Horticulture Innovation Australia

Final Report

National Turf Industry Cost of Production Calculator Development and Extension Program

John Squires
Rural Directions Trust

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Level 8, 1 Chifley Square
Sydney NSW 2000
Tel: (02) 8295 2300
Fax: (02) 8295 2399

Turf Australia
Grow Green

TU 13005: National Turf Industry Cost of Production Calculator Development and Extension Program

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Summary

The National Turf Industry Cost of Production Calculator Development and Extension Program was promoted as “Staying in the Green”. It began because there was a need for turf growers to better understand the actual cost to produce, install and deliver turf. Nearly fifty percent of turf growers had no idea what it cost to produce turf, and there was a very wide range of estimated costs for growing, delivering and installing turf.

To facilitate a deeper understanding required a Turf Cost of Production Calculator tool that was nationally relevant, and that was as simple as possible to use. An early version of the tool developed in a predecessor project by Turf Queensland and Department of Agriculture, Fisheries and Forestry Queensland was modified to become the “Complete” tool. Subsequently, a light version of the Turf Cost of Production Calculator tool was developed that required significantly less data to calculate production costs. Benchmarking capability, along with the ability to centrally submit results, were also added.

To achieve national coverage required that there be a delivery team that extended into each state in Australia. Turf Industry organisations, through the Industry Development Officers network in each state, along with Local Land Services in New South Wales and Rural Directions Pty Ltd in South Australia, fulfilled this need. Delivery team members received training to ensure that national delivery was consistent.

To generate interest, turf growers needed to be aware of why cost of production was important. They also needed to know that training in the topic area was available. A promotional package of information, including fact sheets and case studies, along with broader industry promotion through magazine and newsletter articles and industry presentations, assisted. Direct contact via email, visits and telephone also occurred.

The training was also tailored to individual needs, so that depending on preferences, turf growers could attend a workshop, access via a 1:1 delivery session, or participate remotely using supplied project resources and a series of YouTube webinars. Resources included workshop booklets, case study farm examples and data entry sheets, along with a USB that contained all project outputs. All participants could access telephone support from project delivery team members.

Case study farms were used to assist growers in learning the process, without needing to divulge personal business information, which would be a disincentive for growers participating. This then meant that turf growers needed to enter their own data at another time, to allow them to calculate their individual business costs to grow, deliver and install turf.

A total of one hundred and thirty three turf growers, representing ninety five turf businesses, participated in the Staying in the Green Program. There were often multiple attendees from the one business at a workshop session. Given there are two hundred and twenty levy paying turf businesses in Australia, this indicates a 43% participation rate. Skill and confidence levels in how to calculate cost of production both increased. Fifty five percent of participants thought that their estimated of cost of production increased post attending a workshop session.

The time needed, and level of information required, meant that it was a challenge for turf growers to actually complete calculating their individual cost of production figures. Just over half of the growers who attended Staying in the Green activities actually attempted to calculate their own individual cost of production figures at home. Those who did complete their own COP figure found the task relatively easy. Some participants did access post workshop support, which was valued.

Fifty four percent of those who entered their own data actually completed calculating their own cost per square metre for producing turf. Sixty four percent calculated their delivery and their installation cost.

Encouragingly though, growers have adjusted turf pricing. Turf growers have increased prices per square metre of turf, and for delivery of turf, since participating in a Staying in the Green Project activity. It should be noted that there was less adjustment of installation costs.

Keywords

Turf Industry, Production Cost, Delivery Cost, Installation Cost, Benchmarks, Varieties, Calculator

Introduction

The National Turf Industry Cost of Production Calculator Development and Extension Program, which was promoted as “Staying in the Green”, ran from October 2013 through to June 2015. This was a national project that involved a collaborative effort between Turf Australia, Turf Industry Associations in each state, Department of Agriculture, Fisheries and Forestry in Queensland (DAFFQ), Local Land Services in New South Wales and the Project Manager, Rural Directions Pty Ltd.

The Turf Cost of Production Calculator was originally developed as part of a joint Turf Queensland and DAFFQ project “Turf cost of Production Calculator for turfgrass production to improve profitability and sustainability in turf farming practices”. This project extended this on a national basis.

Turf growers were provided with the opportunity to gain a detailed insight into what it actually costs to grow, deliver and install turf. The methodology for calculating was introduced through the use of case study farms of different sizes. Growers, with support post workshop or consultation, were then able to calculate the actual costs for their own business.

Often, the actual cost of production was higher than many growers had estimated. For many, this increased understanding of actual business costs, which included many costs that had not been considered. This lead to a review of price charged. Ultimately, this meant that profitability was improved and that long term business success was more likely.

Methodology

An overview of the methodology is provided below.

This project modified the original Cost of Production Calculator Tool to produce a light version, along with adding some business benchmarking and benchmark data collection capability. Both the complete and light versions were available to turf growers. Workshop materials and supporting resources were developed. Delivery team members across Australia were trained in the use of both of the calculator tools and in workshop processes, including workshop evaluation techniques. Promotional packages were also developed to support the program.

Delivery included a combination of workshops, access to one to one consultation and also the ability to access the tool electronically. Telephone support was offered to all project participants. Also available was a series of YouTube webinars. The first webinar introduced the program. Subsequent webinars addressed individual components of the light tool, including gross margin analysis, entering overhead costs, and considering the cost of turf delivery and installation. A sixth clip introduced the complete tool, and the final in the series addressed interpretation of the outputs.

Evaluation occurred both as the project was delivered and also as the project drew to its conclusion. Project evaluation consisted of both pre and post workshop assessment. A final project survey of project participants, delivered via email as a survey using the program Survey Monkey, was also conducted.

Project management was a considerable task given the breadth of the project, the number of organizations and individuals involved. Subcontracting agreements were required for each organization. Additional agreements were needed as the project progressed, due to an unexpected change in personnel in Queensland, and the addition of Local Land Services NSW to the delivery team. There was regular liaison with Horticulture Innovation Australia Limited, and with Turf Australia who were assisting with promotions. A project steering committee helped to provide project direction on an ongoing basis, with regular teleconferences being held. As the project progressed it also became evident that some flexibility was required, with plans needing to change, to ensure that project outcomes could be met. This added to the management workload.

More detail on the methodology for each of the major project components is described below.

Initial training of the project delivery team

A project inception meeting was held in Adelaide on the 21st and 22nd of October 2013. In attendance were the project team members, members of the project steering committee and Turf Australia staff.

The workshop included introductions for all team members, some background on the turf industry and its nuances in each state, and an introduction to the cost of production tool by developer (and project delivery team member) Bill Johnston.

This meeting also identified some actions that were regarded as critical success factors going forward for the project. These included:

- refinements to the cost of production calculator;
- the development of supporting materials including data entry forms and case study farms (in addition to workshop booklets and a power point presentation);
- development of standardized workshop evaluation processes;
- the need to engage Turf Queensland to assist with promotional support in that state;
- a change in the mix of workshops and 1:1 delivery so it was better tailored to individual states needs.
- the addition of business benchmarking as a value add, with the ability to submit data. This addressed a longer term goal of the turf industry, to have benchmarking information available to support decision making at the industry level.

Refine the Cost of Production Calculator for national delivery

During the initial project delivery team training session a number of necessary refinements to the tool were identified. These included the addition of ready reckoners, additions that were needed to cater for common practices within individual states, different business structures and modes of operation. The level of complexity of the tool was also seen as a potential problem.

Once initial changes were made, the "Complete" Cost of Production (COP) tool was tested with two turf growing businesses in New South Wales. This confirmed that the tool was complex and that the level of detail required to calculate a cost of production remained a challenge for the majority of growers.

Given this, the Turf Cost of Production Calculator was again modified so that a light version was also available. This then meant that further team training in the use of the tool would be required.

Develop promotional package materials and case studies with advocate producers

Promotion was explored in detail at the project inception meeting, as team members identified this as critical to project success. The development of a formalized promotional package was suggested. This included:

- Workshop flyers
- Webinar Flyers
- Email templates
- Press release templates
- A promotional Power Point (Attachment 5)
- Case studies with data for two turf businesses of different sizes (Attachment 11 and 12)

- Data entry sheets to enable easier collation of data, tailored to both the Complete and Light versions of tool (Attachment 9 and 10)
- Fact sheets about the program
    - Staying in the Green, with information about the program in general (Attachment 1)
    - Secret Seven Insights, highlighting benchmarking and its benefits (Attachment 2)
- Promotional case studies, where turf businesses were interviewed about the importance of understanding cost of production and were profiled
    - Coastal Turf (Attachment 3)
    - Qualturf (Attachment 4)
- A USB that contained both project resources and both versions (Complete and Light) of the Turf Cost of Production Calculator tools

In addition to the above resources, there was also a promotional plan developed to ensure that the program was broadly promoted to create awareness through turf grower networks. This included using mechanisms such as magazines e.g. Turf Australia Industry magazine, Turfcraft, the Turf Australia website, Turf Australia E news, industry presentations such as at field days, the Turf Australia and Next Gen conferences.

At the individual state level, industry development officers in each state were responsible for promoting the program, including individual workshop events, to turf growers. This included via direct email, SMS, phone calls, mentions in newsletters, and through presentations at industry events. In New South Wales Local Land Services staff also assisted in this process.

Workshops, 1:1 consultative delivery and also the YouTube webinar programs were all promoted as being available.

Develop the remote delivery process

The remote delivery process was initially designed as interactive webinars that were to be scheduled at specific times. This meant that turf growers would need to be available at those times, often during a working day, to be able to participate in the program remotely.

It was recognized that this would be a considerable impediment to turf grower participation, and so the process was modified. A series of YouTube webinar clips were produced, which turf growers could access at home, in their office via a computer at any time to suit them. Subjects of the YouTube clips were:

- Webinar 1 – An introduction to the Staying in the Green program
- Webinar 2 - Completing a gross margin analysis
- Webinar 3 - Entering overhead cost information

- Webinar 4 – Turf delivery cost analysis
- Webinar 5 – Turf installation cost analysis
- Webinar 6 – An introduction to the 'Complete' tool
- Webinar 7 - 'Interpreting the Outputs'.

The YouTube links can be found on the Turf Australia website at
http://www.turfaustralia.com.au/associationnews/are-you-staying-in-the-green

The availability of the clips, when coupled with the project resources such as the data entry sheets and turf farm case study documents, and telephone support from members of the project delivery team, allowed remote growers to access the Turf Cost of Production Calculator tool.

Further training of project delivery team members

Given that the light version of the Turf Cost of Production Calculator was developed, an additional training session for team members was scheduled. This occurred in Melbourne on the 3rd and 4th of April 2014. Training was delivered by John Squires and Simon Vogt. For Local Land Services staff, this was the initial introduction to the process, given that they joined the project team at a later stage.

Day 1 introduced the team to the Turf Cost of Production Calculators and the differences between the complete and newly developed lite version. It ran them through the data collection sheets, workshop materials, case studies and all required workshop processes including pre workshop engagement, evaluation requirements and the post workshop follow up required.

On day 2 the team attended a Staying in the Green Workshop run for members of the Turf Growers Association of Victoria. This was delivered by Simon Vogt and John Squires. This provided the team with the opportunity to observe delivery of a workshop to grower participants. It also provided them with an opportunity to use the tool and assist growers in the workshop.

Project steering committee and project review

The project steering committee consisted of representatives from Turf Australia (Business Industry Development Manager), from Horticulture Innovation Australia Limited (R&D Strategy Implementation Manager), and from the Turf Industry Advisory Committee (John Keleher and Sarah-Jane Mason). Barry Underhill also participated on occasion.

They provided invaluable support, particularly to the project managers, throughout the course of the project. Most attended the project inception meeting in Adelaide and actively contributed to discussion. This was important because it provided them with a sound understanding of the project and the issues that were identified. They provided feedback as it was needed, both through formal teleconferences, and also on an ongoing basis. They also acted as project advocates.

The project review component was the responsibility of Horticulture Australia Innovation Limited, lead by Brad Wells, R & D Strategy Implementation Manager. This occurred during February - March 2015.

The project leader, Rural Directions Pty Ltd participated in a teleconference to update on project history and progress (given that Brad was new to management of the project). Also explored were possible future directions in regard to benchmarking and business management programs. Follow up emails also supplied further information.

Brad Wells also consulted with Richard Stephens, Turf Australia Business Industry Development Manager, and grower members of the project steering committee and the previous Turf Industry Advisory Committee.

Extension via workshops, remote and 1:1 delivery

The Staying in the Green Turf Cost of Production Calculator was made available to turf growers by three different mechanisms.

The principle method was through being able to attend workshop sessions held at a variety of locations around Australia. These were held in Victoria, Queensland, New South Wales, and in Western Australia. This was by the Industry Development Officer in New South Wales and also by Local Land Services staff in that state. The New South Wales Industry Development officer also delivered a workshop in Western Australia, because use of an independent person was needed to attract participants. In Victoria, workshops were delivered by Rural Directions Pty Ltd. In Queensland, workshops were delivered by Bill Johnston, Department of Agriculture, Fisheries and Forestry Queensland. Co deliverers with Bill were Shane Holborn and Sarah Jane Mason.

Turf growers were also able to access 1:1 consultancy sessions, where members of the project delivery team met with individual turf growers to introduce the process and work through figures. This occurred in Queensland, New South Wales, South Australia and Western Australia.

Growers who were unable to participate in a workshop or on a 1:1 basis (principally due to a remote location, or because workshops or 1:1 delivery was not offered in their area) were able to access the Turf Cost of Production Calculator tool. They could contact a delivery team member, obtain the project resources and spreadsheet password, and use the YouTube webinars to assist. Availability by this mechanism was promoted in all states, via direct email and through mentions in a number of newsletters.

In South Australia, where the YouTube webinar was the primary mechanism, growers were mailed with a covering letter and provided with all project resources on a USB. They were then followed up with subsequent emails inviting them to participate.

All turf growers were offered follow up support post initial participation, through telephone support. For some, this was a programmed call from a member of the project delivery team. For others, they chose to contact at their convenience when they had a specific query. Links to the YouTube webinar series were also emailed to participating growers as an additional form of support.

Final evaluation survey

In order to understand the impact of the program, participants were provided with the opportunity to complete an on line survey, distributed through the project delivery team members in each state via email.

The survey explored how well each of the project components had been delivered and the value of that delivery to turf growers. It also sought to understand how many growers had completed calculating their own cost of production figures, and if price or other changes to businesses have resulted from participation. Use of the “Submit Now” benchmarking function was also addressed, as were future business management related training needs for turf growers. Results of this evaluation are discussed in the Evaluation and Discussion section.

Outputs

The outputs developed by the project were numerous, and include:

- A refined Complete Turf Cost of Production Calculator tool that is nationally relevant, with improved ease of use, and added benchmarking and data capture capability.
- A new Light Turf Cost of Production Calculator Tool, that simplifies the amount of information required to calculate cost of production figures.
- A suite of promotional resources, including a promotional Power Point, website content, flyers, email templates, press release templates, turf grower case studies, and fact sheets about the program and benchmarking.
- A workshop session plan and supporting materials, including a Power Point presentation (attachment 7) , example data for case study farms of two different sizes, data entry sheets for both the complete and light versions of the Cost of Production Calculator tool, and a workshop booklet (attachment 6). A workshop evaluation process was also designed.
- Staying in the Green USB's, distributed to project participants. These included all promotional materials, both complete and light versions of the Turf Cost of Production Calculator tools, and other project resources including the data sheets and case study farm examples.
- A series of seven YouTube webinars that walk turf growers through a step by step process to enable them to calculate their own cost of production figures. These are used in conjunction with other project resources, such as data entry sheets, the Turf cost of Production Calculator tools, and example case study farms. These were designed so that remote growers could access the tool.
- A trained delivery team, who now have the ability to assist turf growers to better understand the range of business costs that need to be considered, and can assist them to calculate cost of production. There are now individuals with capability to deliver or assist in New South Wales, Queensland, Victoria, Western Australia and South Australia.
- An end of project evaluation process was designed, through an on line survey process that could be emailed to each individual project participant. Results from this evaluation are included in the final report. Not only did the evaluation report address the impact of the program, it also addressed future priorities for the turf industry.
- A series of five milestone reports were produced. Each of these described in detail the achievements of the project as it progressed.
- This final project report was the last output from the project.

Examples of these outputs are provided in the appendix.

Outcomes

Promotional Package

The turf industry now has available an easily accessible suite of factsheets, promotional case studies, promotional Power Point, email and other promotional templates for promoting the importance of understanding cost of production and benchmarking to turf growers.

These readily available resources can be used to promote any future cost of production and benchmarking activities for the turf industry. There is also increased awareness that it is important to understand an individual business' cost of production.

Enhanced and Simplified Cost of Production Calculator tools, with benchmarking capability

The refined Complete Cost of Production calculator tool is now more nationally relevant, having had changes made so it was practically functional for each state. Other additions improved ease of use.

A significant barrier to calculating cost of production was the substantial level of data required to be able to calculate figures using the Complete version of the tool.

An important outcome for the turf industry is that this barrier has been addressed through the development of the Light version of the Turf Cost of Production Calculator tool.

Another significant outcome is that both tools now have added benchmarking capability. This encourages turf growers to begin to focus on business performance and business management issues, when traditionally there is a strong focus on production matters.

The addition of the Submit Now function in both Turf Cost of Production Calculator tools means that data for growers who choose to submit information are able to be collected in a central location. In the future, this data could be used to generate across industry turf business benchmarks.

This is an important outcome, as the availability of this benchmarking information can be used to benefit the turf industry in a number of ways. For individual turf business owners it could allow comparison to like businesses, helping to identify where performance could be improved.

At the broader industry level trends can become evident and issues can be identified, helping to direct areas for future investment that can positively impact the industry.

These simple benchmarks also provide an introduction to benchmarking as a concept, which could be extended into greater depth in the future.

Project Resources

The turf industry now has available a suite of resources that support training turf growers to be able to calculate their individual businesses cost of production.

Data entry sheets and case study farm examples help make the process more transparent and easier to implement. Workshop session plans, the associated PowerPoint and workbook drive face to face delivery. The YouTube webinar series provide a ready, step by step reference point, either at the prime learning mechanism, or as a refresher for those who may require assistance as they calculate their own figures.

The outcome is that, when combined with the developed Cost of Production Calculator tools, there are now turf growers who can more easily calculate their own cost of production. There are also readily available resources that can be used for running any cost of production and benchmarking activities for the turf industry into the future.

Trained delivery team

A very important outcome for the turf industry is that there is now a significant network of individuals who have training in, and a detailed understanding of, how to calculate cost of production for turf businesses.

Industry Development Officers in each state, and Local Land Services staff in New South Wales, now have this ability. This provides a significant legacy for the project that the turf industry will be able to draw on into the future.

Turf Growers trained in how to calculate cost of production

To learn how to calculate turf cost of production, installation and delivery, turf growers could have elected to attend a workshop or participate in a 1:1 session with a member of the project delivery team. Alternatively, they could have used the YouTube webinars, in conjunction with the project resources that they requested from delivery team members. This meant that remote turf growers were also catered for.

A total of seventeen Staying in the Green workshops were delivered, with a total of one hundred and eight attendees at workshop sessions. There were seven workshops in New South Wales, seven in Queensland, two in Victoria and one in Western Australia.

Some changes to the original delivery plan occurred. A workshop was not originally planned in Western Australia, but did eventuate because engagement on a 1:1 basis proved a challenge. A lack of a cohesive industry structure in South Australia mean that strategy changed to remote delivery, with an additional workshop then taking place in Victoria in lieu. In Queensland an additional workshop was run in lieu of some 1:1 sessions, meaning that more growers could participate.

Delivery on a 1:1 consultative basis was offered in Queensland, New South Wales and in Western Australia. Uptake in Western Australia was minimal, meaning that the workshop was offered as an alternative. One grower in South Australia was also assisted in this way. In total, there were eighteen growers assisted in this way.

Turf growers were made aware of the availability of the YouTube webinars and associated supporting project resources in a number of ways. There was an article in the Turf Australia Magazine, and a series of articles in the Turf Australia e news letter. Each individual State Turf organization, via the Industry Development Officers, promoted directly to turf growers in their state via email distribution on more than one occasion. South Australian turf growers received a personalized letter and also follow up emails. Mentions were also made at industry events during presentations. Links direct to the YouTube webinars were placed on the Turf Australia website.

Despite these efforts, uptake by remote growers was low. Listed below is the number of views for each webinar as at the 25th of June 2015.

- Webinar 1 – An introduction to the Staying in the Green program – 20 views
- Webinar 2 - Completing a gross margin analysis – 11 views
- Webinar 3 - Entering overhead cost information – 4 views
- Webinar 4 – Turf delivery cost analysis – 13 views
- Webinar 5 – Turf installation cost analysis – 6 views
- Webinar 6 – An introduction to the 'Complete' tool – 10 views
- Webinar 7 - 'Interpreting the Outputs' – 7 views

In South Australia, where remote delivery only was the strategy, a total of three turf growers requested information, one of whom was from the Northern Territory. One grower received a 1:1 delivery session.

In total, there are one hundred and thirty three growers, representing ninety five turf businesses, that have taken up the opportunity to learn how to calculate the cost to produce, deliver and install turf. There were often multiple attendees from the one business at a workshop session. Given there are two hundred and twenty levy paying turf businesses in Australia, this indicates a 43% participation rate.

Table 1 below summarizes the delivery that occurred in the program on a state by state basis. Actual versus target delivery numbers is addressed in the discussion section.

Table 1: Staying in the Green delivery summary

State	*Original Contract requirement*	*Changes introduced*	*Workshops delivered and number of attendees*	*1:1 Delivered*	*Other strategy result*	*Total number of turf growers*
SA	1 workshop Added an additional workshop in Victoria in lieu.	Changed to a remote delivery strategy due to non cohesive industry structure. Contact via personalised letter and emails. Follow up phone calls and emails as required.	Not applicable	1 at grower request	Provided project resources to three turf growers. Included promotional pack, YouTube links and follow up phone calls. On grower was located in NT.	4
Vic	2 workshops 3 Victorian growers attended in NSW*	Nil	4/4/14 Melbourne 3 attended 12/8/14 Albury 4 attended* 27/5/15 Melbourne 10 attended	Nil as none required	Not applicable	17
NSW	8 workshops 8 1:1 delivery Turf NSW 22 1:1 delivery Local Land Services* * funded outside HIAL.	A final workshop was planned in June 15, but did not run due to a lack of numbers.	27/5/14 Richmond 8 attended 10/6/14 Richmond 3 attended 11/6/14 Central Coast 6 attended 16/7/14 Richmond 7 attended 29/7/14 Maitland 7 attended 12/8/14 Albury 4 attended* 19/8/14 Taree 8 attended	9 delivered (5 Turf NSW, 4 LLS)	Extra 1:1 sessions may take place in lieu of the final workshop. *also 4 growers from Victoria	56
QLD	6 workshops 8 1:1 delivery	Some 1:1 substituted for an additional workshop.	19/5/14 Cairns 6 attended 21/5/14Townsville 5 attended 23/5/14 Mackay 3 attended 19/6/14 Bundaberg 2 attended 22/7/14 Nambour 6 attended 29/7/14 Redlands 6 attended 21/5/15 Maroochydore 10 attended	5 delivered	The final workshop that was substituted for 1:1 sessions was well attended, meaning that more growers were reached.	43
WA	1:1 delivery to 12 growers	Original 1:1 delivery moved to workshop delivery	10/3/15 10 attended	3 delivered	Workshop resulted in greater participation	13

Evaluation and Discussion

Delivery Targets

The original ambitious delivery target for the program at inception was a total of two hundred turf grower participants. The actual level achieved is 67% of this target. There are a number of reasons why this target has not been achieved.

An assumption for the workshop program was an average of eight attendees per workshop. As can be seen in table one above, this proved to be incorrect. Often growers would indicate an intention to attend but not be there on the actual day of the workshop. This was despite a strategy that ensured they were reminded of the event just prior to the day. The result was that some workshops were poorly attended. One workshop in New South Wales was also cancelled due to a lack of registrations.

The remote delivery strategy was originally a series of programmed webinar events at set times, with the assumption that five turf growers per session would participate. There were ten of these sessions planned, meaning the target was fifty grower participants. This strategy changed as the requirement to be available at specific times during working hours was viewed as a significant barrier to participation. Despite promotion via direct email on numerous occasions, through magazine articles and industry presentations, and through e newsletter articles, and the fact that availability was totally flexible, uptake was very significantly less than hoped for.

The 1:1 delivery in New South Wales was significantly hampered by severe flooding events in that state during the planned peak delivery period. The majority of 1:1 delivery was to be conducted by Local Land Services staff who were unavoidably diverted onto other essential flood damage management tasks. This was an event that could not be planned for. The funding for this delivery was actually supplied through Local Land Services channels. It is proposed that some delivery to use these funds still occurs post the 30th June 2015.

Evaluation

There were two primary methods of evaluation used for the Staying in the Green program. At workshops there were pre and post workshop questionnaires that were completed by workshop attendees. These addressed questions, both pre and post workshop, such as:

- Skill and confidence level in calculating a turf cost of production, with a score of 1 indicating a very low level and a score of 10 indicating a very high level of either skill or confidence
- The degree to which turf growers thought that increased knowledge of cost of production could lead to a more resilient and profitable industry
- Estimated cost per square metre to grow, deliver and install turf, or how those estimates had changed post workshop.

Participants were also provided with the opportunity to comment on the workshop after they had attended. These evaluation questionnaires are provided as attachment eight. Table two below provides a summary of the evaluation information collected from workshop participants. Important points to consider from this table are:

- The vast majority of growers across all states either strongly agreed or agreed that increased knowledge of cost of production would lead to a more resilient turf industry.
- Nearly half of turf growers across Australia had no idea on their turf cost of production figures. There were wide ranges in estimated costs to grow, deliver and install turf.
- Both skill level and confidence level in calculating cost of production were not high pre workshop.
- Both skill level and confidence level in calculating cost of production had improved significantly post the workshop sessions.
- Post workshop the majority of turf growers either strongly agreed or agreed that they were confident in being able to calculate cost of production at home.
- Just over a quarter of turf growers thought they would need further support to complete calculating their cost of production, and nearly half had not decided if this would be necessary. The remainder did not feel that they would require support.
- Post workshop, fifty five percent of turf growers thought that their cost of production estimates had increased. A further thirty four percent were not yet sure of the impact, and a further eight percent believed there was no change.

A selection of turf grower comments post the workshop sessions were as follows:

- “I think that this is the best project that the turf levy has funded”.
- “Today’s workshop was in my opinion very valuable. It made me think more in depth of costs associated with turf production, and the level of detail that should be looked at when calculating cost of turf to produce”.
- “Good value with useful information and insights on all aspects of our business. Highlighted things I didn't take into consideration before”.
- “The ‘Lite’ version of the tool is very easy to use and attending the workshop makes using the tool so much easier”.
- “The idea of a lite version to give producers an insight into the benefits and then the confidence to use the complete version is fantastic”.
- “Very valuable for on-going viability of farms and understanding true cost of production”.
- “The turf calculator is a great initiative for the industry and will contribute significantly to the viability of the industry”.
- “Well presented. First item of value from levy in all the years it has been running.”

- “Today’s workshop was a big eye opener. I didn’t realise how much turf actually cost to grow”.
- “Fantastic! Well done on providing a tool to help us understand the true costs of production”.
- “Will definitely help local turf growers understand and hopefully discuss cost of production amongst ourselves”.
- “The workshop itself promotes better relationships amongst the producers and helps build a strong industry”.
- “Very valuable for on-going viability of farms and understanding true cost of production. Will be extremely valuable in identifying areas of production that are inadequately recorded”.
- “Very helpful tool. Can’t wait to find my actual cost of production and put my prices up. Great initiative. Thankyou. Look forward to more educational meetings”.
- “Well presented. First item of value from levy in all the years it has been running”.
- ”The Cost of Production Lite toolkit pleasantly surprised me, I believe that this tool will provide me with all the information that I need to define the actualities of running my business. Every WA grower should have attended this workshop. Those who did not send a representative were foolish, I think that it’s an excellent tool that will be extremely beneficial to all turf farms. I thought that the recent Profitability workshop was exceptional, and I raised my prices as a direct result of that workshop. This new tool will afford me the information to make further decisions regarding the pricing of my turf”.
- “Very interesting and glad we came, am excited to go and put to use. I would encourage all farms to use this as it may let them realize price cutting doesn’t work”.
- “I wish more members of our industry had attended, giving them a better understanding of their strengths and weaknesses and their position within the industry”.
- “Question whether it would be of value to have pre-workshop sent out to complete prior. This would give participants the opportunity to prepare some specifics. But as I say questionable value. Course content is good as it is”.
- “Really good, but it will take me 1 or 2 seasons before I run using this workshop. Good to meet some more turf farmers. I found that the workshop will be helpful”
- “Good job guys. Could maybe make the process happen quicker i.e. condense”.
- “Very informative. You can have the tools at home but without the clarification of how to apply them properly you intend to let it slide”.
- “Excellent concept needs to be sold to industry more”
- “Very valuable however the people that most need it aren’t here”
- “Shame more growers weren’t here but think todays workshop will be a huge benefit to all of us”

Table 2: Workshop evaluation summary

Parameter	*Victoria*		*Queensland*		*New South Wales*		*Western Australia*		*All states*	
	Pre workshop	*Post Workshop*	*Pre workshop*	*Post Workshop*	*Pre workshop*	*Post Workshop*	*Pre workshop*	*Post Workshop*	*Pre workshop*	*Post Workshop*
Skill in calculating cost of production	5.00	6.75	4.94	6.75	4.18	7.07	6.54	7.55	4.59	6.90
Confidence in calculating cost of production	5.31	7.75	5.06	7.75	4.77	7.51	7.00	7.82	4.83	7.65
Agreement that increased knowledge of Cost of Production leads to a more resilient industry										
Strongly agree	75%	75%	50%	47%	60%	51%	54%	64%	58%	64%
Agree	25%	25%	41%	47%	30%	49%	46%	36%	35%	34%
Undecided	0%	0%	6%	6%	8%	0%	0%	0%	5%	2%
Disagree	0%	0%	3%	0%	0%	0%	0%	0%	1%	0%
Strongly disagree	0%	0%	0%	0%	2%	0%	0%	0%	1%	0%
Estimated cost of production per square metre of turf										
Average	$ 3.04		$ 2.54		$ 2.26		$ 4.07		$ 2.72	
Maximum	$ 4.00		$ 5.50		$ 4.50		$ 6.00		$ 6.00	
Minimum	$ 1.30		$ 1.50		$ 0.40		$ 2.50		$ 0.40	
No idea	38%		53%		49%		33%		47%	
Estimated cost of production per square metre of turf to deliver										
Average	$ 2.69		$ 2.75		$ 1.51		$ 3.89		$ 2.40	
Maximum	$ 5.30		$ 6.00		$ 4.10		$ 7.00		$ 7.00	
Minimum	$ 0.50		$ 0.60		$ 0.50		$ 0.50		$ 0.50	
Estimated cost of production per square metre of turf to install										
Average	$ 3.58		$ 3.51		$ 1.79		$ 6.00		$ 2.93	
Maximum	$ 10.00		$ 7.00		$ 5.10		$ 9.00		$ 10.00	
Minimum	$ 1.00		$ 0.86		$ 0.50		$ 4.00		$ 0.50	
Confidence in being able to complete calculating COP at home										
Strongly agree		56%		21%		32%		55%		34%
Agree		44%		66%		63%		45%		59%
Undecided		0%		13%		5%		0%		7%
Need for additional suport to complete at home										
Strongly disagree		0%		0%		2%		0%		1%
Disagree		31%		13%		22%		45%		23%
Undecided		38%		55%		44%		55%		48%
Agree		0%		26%		32%		0%		26%
Strongly agree		0%		6%		0%		0%		2%
My estimates of cost of production have										
Increased		64%		46%		59%		64%		55%
Unsure		29%		51%		22%		27%		34%
Stayed the same		9%		0%		15%		9%		8%
Decreased		0%		3%		4%		0%		3%

The second tier of evaluation involved an end of program questionnaire that addressed project impact and operation and also future industry needs. Attachment thirteen provides a copy of the questions. The questionnaire was set up in the program Survey Monkey.

Explanatory information and a link to access the survey was emailed to all program participants directly from each State Industry Development Officer, on multiple occasions. This meant that the contact was direct from the individual that the turf grower had previously had contact with. The availability of the survey was also promoted in Turf Australia E newsletters on consecutive weeks. An incentive for completion was also provided, with a complimentary registration to the 2015 Turf Australia conference.

Despite these efforts, at the time of writing this report, a minimal number of project participant (only 10% i.e. thirteen) turf growers had chosen to respond. Results from the survey revealed the following:

- Most had become aware of the program through Industry Development Officers, State Turf Associations, the Turf E news, at a turf industry event or through the Turf Australia Industry Magazine.
- Sixty nine percent of those who responded participated in the program in 2015, with the remainder in 2014. Ninety two percent had attended a workshop, with others taking advantage of a 1:1 delivery session.
- Over ninety percent of turf growers worked through the case study examples to learn how to use the cost of production calculator
- Only thirty three percent of turf growers were aware of availability of the YouTube webinar series. Most had not actually used them. The one grower that had stated that they were valuable.
- Thirty percent of turf growers who attended a workshop did receive follow up from a member of the project delivery team after the workshop was completed. All thought that this follow up was valuable.
- Follow up was irregular as some turf growers indicated that they would prefer to contact delivery team members on an as needs basis. Sometimes contact was made by delivery team members where messages were left, but there was no subsequent response from the turf grower concerned. It was also difficult to know when the appropriate time to make contact actually was. It became evident early in the program that many growers had not had time to enter data when scheduled calls were planned. Given this follow up became a more difficult task.
- Fifteen percent of turf growers contacted a project delivery team member to request assistance, and that assistance was highly valued.
- Fifty four percent of turf growers had attempted to enter their own data into the Turf Cost of Production Calculator, with seventy one percent of these finding the task relatively easy.
- Of those that had entered their own data, fifty four percent had completed calculating a cost per square metre for turf, and sixty four percent had calculated both a delivery and an installation cost.

- Barriers for those who had not calculated costs of production were a busy season, a lack of time available (for more than one respondent), and the need for more information to be on hand.
- Fifty percent of turf growers were aware of the Submit Now function to enable submission of data for benchmarking to a third party able to guarantee confidentiality. Seventy percent of those aware are prepared to submit information. However, in practice only two data sets have been received.
- The major concern in regard to submitting data for benchmarking purposes was that data would not remain confidential. However, fifty seven percent of turf growers that responded had no concerns. One stated that it would be beneficial for the industry to be able to collate this data.
- Over forty percent of turf growers had increased prices per square metre of turf, and for delivery of turf, since participating in a Staying in the Green Project activity. Only one had made a change to price charged for installation.
- Turf growers also stated that the Turf Cost of Production Calculator had resulted in easier decision making, in shopping around for better electricity prices, in more micro costing and in conducting a more detailed analysis of certain fields.
- Seventy percent of turf growers rated participated in the Staying in the Green Program as highly valuable. The remaining thirty percent viewed it as valuable.
- Turf growers indicated that they were interested in understanding more about:
    - When cost of production should be reviewed once initially calculated
    - The benchmarks calculated by the Turf cost of Production Calculator tool
    - Benchmarks for the broader turf industry, and how their business compares
    - Making machinery purchase decisions for their business
    - What records they need to keep to calculate cost of production

Note that the above results should be viewed with caution. They were from a very limited sample size. It is also possible that the sample was skewed, as the growers that had benefitted from the program were more likely to respond to the survey request.

Discussion

From the above, it is evident that a significant number (nearly fifty percent) of turf growers did not have an understanding of cost of production for their enterprise. A contributing factor was a low level of existing skill and confidence in how it could be calculated. This was despite the fact that the majority of growers acknowledged that an increased knowledge of cost of production contributes to a more resilient industry.

Participation in a Staying in the Green activity increased this skill and confidence level. Growers were surprised at the number of costs that actually contributed to the calculation; they became aware of costs that they had never considered. Turf growers increased their estimate of cost of production post workshop sessions.

The majority of turf growers felt confident that they could calculate a cost of production at home. The light version of the tool contributed to this confidence. Despite this confidence level, just over half of the growers who attended Staying in the Green activities actually attempted to calculate their own individual cost of production figures at home. Those who did found the task relatively easy, although some did access post workshop support, which was valued.

Only fifty four percent of those who entered their own data actually completed calculating their own cost per square metre for producing turf. Sixty four percent calculated their delivery and their installation cost. Availability of data and a lack of time were issues for those who did not complete the task. Comments included “busy season, will get back to it in winter”, “need more time to get an exact cost” and “waiting on information”.

Encouragingly though, growers have adjusted turf pricing. Turf growers have increased prices per square metre of turf, and for delivery of turf, since participating in a Staying in the Green Project activity. There was less adjustment of installation costs.

Turf growers are interested in understanding more about benchmarking, at both the individual and at the industry level. Turf growers are not averse to providing data for this to occur, but need to be reassured that confidentiality can be maintained.

The numbers of turf growers who participated in the Staying in the Green program was lower than anticipated. However, it was highly valued by those who did participate, who have stated that it represents good use of turf levy funds.

Recommendations

There are a number of recommendations that result from insights gained during the Staying in the Green program.

- There remains some 1:1 delivery that needs to occur in New South Wales. Local Land Services, working in conjunction with the Turf New South Wales Industry Development Officer, are proposing that this still occur post June 2015, to be completed by the end of September 2015. Turf Australia has been approached for approval. The funds for this delivery were allocated by Local Land Services early in 2014 and there is no requirement for financial support from this project. It is recommended that this initiative be supported.

- The end of project evaluation survey has been poorly responded to despite promotional efforts. For some growers, there has been a very short time frame between attending an event and the end of the project when evaluation was to occur. Assuming that additional 1:1 delivery occurs there is also a larger pool of turf growers that could provide feedback. It is suggested that the end of project evaluation survey be recirculated again later in 2015 so that more thorough evaluation takes place. Turf Australia has been approached to see if they will coordinate this process.

- There is now a “sunk cost” for the turf industry that has resulted in the development of the promotional, workshop and remote delivery resources that now exist to support training turf growers in how to calculate a turf cost of production. There is an opportunity to gain further leverage from these committed resources.

    - Depending on developing an understanding of further demand, there is the opportunity to deliver more Staying in the Green Turf Cost of Production activities to turf growers who are yet to participate. Demand would need to be assessed on a state by state basis. In some states a significant proportion of growers have participated, while there may exist some demand in other states.

    - In particular the YouTube webinar resources have been under-utilized. These, in conjunction with other resources and telephone support from Industry Development Officers, could be used to reach more growers.

- There are a considerable number of turf growers who have received initial training in how to calculate cost of production who are yet to actually calculate figures for their individual business. The introduction of a “refresher” workshop could encourage completion. The YouTube webinar series could also support this process.

- A barrier for some growers is the level of information that needs to be on hand to be able to calculate cost of production. This is reliant on the availability of appropriate data recording mechanisms. Some standardized templates or systems could be investigated and/or developed to assist manage this issue.

- There is interest among turf growers to learn more about the benchmarking component of the turf cost of production calculator tool. Extension in this area could be a natural follow on from a refresher session, so that benchmarking becomes the emphasis. This would also provide an opportunity to encourage turf growers to submit individual business data. For this to occur there would also need to be some training for the delivery team.

- Turf growers are not averse to submitting benchmarking data if they can be assured that confidentiality can be maintained. Low submission rates to date are most likely because turf growers have not yet completed their own calculations. There is also a partial lack of awareness of the "Submit Now" function in the Turf Cost of Production Calculator tool.

- To encourage turf growers to submit benchmarking data there must be a benefit for them. A suggestion here is that turf growers are able to compare their individual business to some industry standard benchmarking data. Such a report can be developed and generated if there is a critical mass of submitted data from individuals. This would also support the aim of the turf industry to be able to use such data to support decision making.

- The above concepts need to be further explored and developed with input from the broader turf industry. It is suggested that Turf Australia convene a turf industry business management focus group, with a panel of selected experts and industry representatives, to further develop ideas. The Staying in the Green program, along with other recent initiatives such as profitability workshops, has resulted in turf growers beginning to focus on business management, profitability and price. It is important for the industry that the key messages relating to cost of production are maintained and the momentum of the completing project to be capitalized on.

Scientific Refereed Publications

None to report

Intellectual Property/Commercialisation

Intellectual property that has been generated by this project includes:

- The updated Complete Turf Cost of Production Calculator tool
- The newly developed Light Turf Cost of Production Calculator tool
- Workshop session plan, Power Point, Case Study Farm examples, workbook and data entry sheets
- The YouTube webinar series, consisting of seven clips

Acknowledgements

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- David Raison Turf NSW – project promotion, logistics and delivery and assistance with project evaluation.
- Eva Ricci, Turf WA - project promotion, logistics, co delivery and assistance with project evaluation.
- David Reid, Turf Vic – project promotion, logistics and assistance with project evaluation.
- Jim Vaughan, Turf Qld – project promotion, logistics and assistance with project evaluation.

Bill Johnston, of Department of Agriculture, Fisheries and Forestry, Queensland. - Training of the delivery team; willingness to fine tune the Complete Turf Cost of Production Calculator tool; development to provided specifications of the Light tool version and delivery in Queensland.

Turf Australia personnel, including Richard Stephens, for input via project management and the Steering Committee. Christine Hughes and David Raison, in their roles as Turf Australia Communication Officers, who assisted greatly with project promotion. All provided strong project advocacy.

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Sarah-Jane Mason and John Keleher, Turf Industry Advisory Committee and Project Steering Committee members. Input into project operation via the steering committee and on an ongoing basis as required. Both were strong project advocates. Sarah-Jane Mason also assisted in coordination and co delivery at one Queensland workshop.

Turf producers Sarah-Jane Mason, of Coastal Turf, and Charlie and Pauline Saliba at Qualturf Pty Ltd are also to be thanked for the time taken, and willingness to be involved, to produce the promotional case study documents.

Turf growers who were willing to make the time available so that they could better understand production costs for their business.

Finally, we acknowledge funding providers, being Horticulture Innovation Australia Limited using the turf levy, and matched funds from the Australian Government.

Appendices

Attachment 1: Staying in the Green Fact Sheet

Attachment 2: Secret Seven Insights Document

Attachment 3: Coastal Turf Case Study

Attachment 4: Qualturf Pty Ltd Case Study

Attachment 5: Promotional Power Point

Attachment 6: Workshop Program Workbook

Attachment 7: Workshop PowerPoint Slides

Attachment 8: Pre and Post Workshop Evaluation forms

Attachment 9: Data Entry Sheet Lite

Attachment 10: Data Entry Sheet Complete

Attachment 11: 15 ha Case Study Farm Example

Attachment 12: 60 Ha Case Study Farm Example

Attachment 13: Final Program Evaluation Questionnaire

Staying in the Green

Building Profitable Turf Businesses through understanding Cost of Production

Turf production is a competitive business. To remain in business for the long term you need to understand your individual cost of production. This can be used to determine profitable price points for selling, delivering, and installing the turf that you produce.

Staying in the Green offers workshops, webinars and support in using the Turf Cost of Production Calculator to help you, the turf grower, understand your true cost of production. This assists with:

- Improving business profit, because you can set prices for the products and services offered by your turf business that include a profit margin
- Controlling your business costs. Developing a deep understanding of the cost drivers for your individual business highlights areas where cost control can be improved
- Variety selection. Understand which varieties are the best for you to grow, based on which provide your best gross margin.

The result is a profitable business that can provide for you and your family for the long term.

Benefits

Increase profit by understanding your true cost of production

- Enhance cost control within your turf business
- Gain leverage from the key profit drivers within your turf business
- Build a more robust and sustainable turf business

"Turf farming is now not only about producing a great quality new lawn for someone; it's about having a good quality business to support your great farm. This means understanding where your dollars are going and how to have more money in your pocket and less going out the door". Sarah-Jane Mason - Coastal Turf

Staying in the Green

Features

Staying in the Green includes workshops, webinars and ongoing support.

Workshops

- A national program with workshops in key turf producing areas
- Based on case study farm examples to help you understand the process, so information for your business stays confidential
- Materials, data input sheets and your own copy of the Turf Cost of Production Calculator to take home
- You can enter data for your business at a time that suits you, where you can readily access the information you need

Webinars

- A webinar is an on line workshop, accessed using your computer while you sit at home
- Detailed instructions provided to make it simple
- Listen and ask questions live, then access again later if you need to review.
- Provision of materials, data input sheets and access to a copy of the Turf Cost of Production Calculator to use at home

Ongoing Support

- Access to phone support post workshop or webinar participation
- Availability of 1:1 face to face support in some areas
- Designed to help you complete the tool for your individual business

The Turf Cost of Production Calculator

- Receive a copy of the Turf Cost of Production Calculator to use on an ongoing basis for your business
- Consider your variable and business overhead costs to calculate your cost of production
- Calculate the cost of production for growing, for delivering and for installing turf
- Generate some key business benchmarks for your business to help you make decisions that are right for you

Other Benefits

Are these common questions that you would like to be able to answer for your turf business:

- What price do I need to sell my turf for so that I make a profit?
- Where can I reduce my business costs?
- Which varieties will give me the best return?
- What is the minimum amount I should charge for delivering turf?
- How much do I need to charge for installing turf?

Why Staying in the Green?

Staying in the Green is:

- Supported by Turf Australia and State Turf Organisations
- Delivered by someone who knows turf in your area
- Has a trained delivery team to introduce concepts and help you through the process
- Uses the Turf Cost of Production Calculator specifically designed for turf, that is tried and proven
- Designed so that it is suited to you, be it a workshop, a webinar, or some 1:1 support

Project deliverers have a genuine desire to help you understand and improve your turf business.

Contact Turf Australia on ph 02 4588 5735, email admin@turfaustralia.com.au or visit the website www.turfaustralia.com.au, for information on workshops and webinars or to find contact details for a member of the project delivery team to help you.

This project has been funded by HAL using the turf levy and matched funds from the Australian Government.

Secret Seven Insights

Understanding the benefits of benchmarking for Staying in the Green

What is Staying in the Green?

Staying in the Green aims to build profitable turf businesses through understanding cost of production. To create turf businesses that can be profitable, sustainable and remain in the industry for the long term. It can help your turf business identify opportunities for increased business profitability.

Why should you consider Staying in the Green? Introducing the 'Secret Seven'

An example of how it works can be drawn from a recent benchmarking study undertaken by Rural Directions Pty Ltd. It identified seven farming businesses that were consistently outperforming their peers when it came to return on investment over the long term. They became the 'Secret Seven'.

Businesses that looked very similar on the outside were benchmarked. They had almost identical climates, rainfall, soil type, and farming enterprises. They were operating in the same region and yet were generating very different profit outcomes.

When it came to net profit across a range of seasons, the 'Secret Seven' consistently retained 30% of business turnover as net profit before tax, compared to only 7% for many other businesses in the same region. A large difference.

This level of retained net profit before tax provided the 'Secret Seven' businesses with an enormous opportunity to fund business growth from profit, rather than through having to increase debt levels.

This means they can continue to develop robust, sustainable businesses that are also able to withstand and manage the inevitable business shocks that happen in primary production.

Seven Secret Insights

Sometimes increased profits can be found in unexpected places. The difference between the 'Secret Seven' businesses and their peers came down to:

- Machinery and asset utilisation. The 'Secret Seven' businesses were making their investment in machinery work hard for them, rather than the other way around. Each had a low machinery investment to income ratio.
- Enterprise gross margin. The 'Secret Seven' businesses generate greater returns per hectare from a very similar or lower cost base. They select varieties best suited to their environment and markets and grow them at a lower cost.
- Serviceable levels of business debt. The 'Secret Seven' businesses generally had low levels of business debt and high equity.
- Business model. Enterprise scale and securing cost effective access to land through leasing in addition to ownership was common across the 'Secret Seven' businesses.

Developing a 'Secret Seven for Turf': Become involved in Staying in the Green

To learn more about your turf business, gain insights into business performance and key business benchmarks, get involved in Staying in the Green. Taking part can help your turf business identify opportunities for increased business profitability.

Contact Turf Australia on ph 02 4588 5735, email admin@turfaustralia.com.au or visit the website www.turfaustralia.com.au, for information on workshops and webinars or to find contact details for a member of the project delivery team to help you.

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Staying in the Green

Turf Australia
Grow Green

Case Study

Coastal Turf

Key individuals involved in the business:
John Commens *(Owner and Farm Manager),* Barbara Backman *(Bookkeeper),* Sarah-Jane Mason *(Farm worker and Office Manager)*

Property location:
Round Mountain Road, Cabarita Beach NSW

Family or corporate:
Family

Owned or leased:
100% owned

Size of property:
25ha

Ha or sqm of turf produced:
24ha or 100,000sqm

Enterprise:
Specialist turf farmers

Average annual rainfall:
1,614mm

Being a turf farmer is a tricky business. For smaller farms like ours, not only do we have to be great farmers, but also businessmen, transport operators, and technological wizards. The Turf Cost of Production Calculator, delivered under the Staying in the Green program has helped us refine the business side of our operation.

My name is Sarah-Jane Mason. My family has owned, managed and produced high quality turf in Northern NSW for the past 20 years.

Coming from an agricultural background, my father John Commens started working life in the oil industry. When he first took over the Coastal Turf business 20 years ago, the little 23-acre paddocks only produced Green Couch and Queensland Blue Couch. We now currently market 10 different varieties of turf.

Four years ago my brother left Coastal Turf to pursue his interests in the Macadamia industry. At this time my children had all gone to school and this allowed me to come back into the organization on a full time basis.

Growing up in the business led to us having a strong belief in high levels of customer service. My experience as a daughter, mother, wife, sister, and turf farmer has given me a well-rounded perspective when talking with clients. Not only in regards to their grass needs, but the intricate details to consider when making a purchase such as a new lawn for their home.

Buying turf 20 years ago was a luxury item for those with lots of money and little time. Over the years, turf has changed from being a luxury item to becoming main stream. We have observed that the people within the industry have moved from being farmers to professionals. Many now have a university level understanding of agriculture.

To value-add to the business, my husband undertakes professional installations for Coastal Turf. He offers ongoing maintenance of the newly-installed grass, weed eradication, installing irrigation systems, and correct mowing and management procedures for optimum grass health. This partnership means that at Coastal Turf we provide our customers with premium turf grass and quality after-sales service.

Coastal Turf

What challenges do you face?

Water security remains a constant challenge for Coastal Turf and our team. We are always looking for opportunities to increase water security, improve business viability and provide our customers with a better quality product.

Long term challenges for Coastal Turf include:

- Rainfall
- Water security
- Market competition
- Competition from other farms that are not competing with the same quality of products
- Finding skilled labour willing to work at industry rates and competing with the mining sector for these employees
- Council regulations

We have noticed a discrepancy in how different companies are grading their lawn quality. This impacts the price and therefore confuses the customer when comparing and purchasing turf.

Overall, turf prices across the industry seem to be falling rather increasing, while our cost of production is rising.

Labour is a huge production cost for us; then diesel, chemicals and fertilizers. A significant challenge we are facing is the lack of skilled labour. It is a struggle to find a work force who are willing to work in our industry, rather than in the mines or overseas

Why is knowing your cost of production (COP) important?

Initially I was not interested in the Turf COP tool; however, I became more interested after several recommendations. After I saw the work sheet, how it worked and what information it could actually provide us with, I was impressed. It allows me to input scenarios to see how it would affect our bottom line. For example, if we employed another person full time, how much would that cost on a $ per square metre basis and what would be the overall impact on our business?

With increased competition, I needed to determine that the prices that were charging were covering our costs. After inputting our figures and costings, which didn't really take up too much time, I was happy to see that we were actually on target with most varieties. We did adjust our prices for some varieties however to ensure our cost of production was being covered.

Turf farmers are a secretive lot. At first we were a bit suspicious about 'big brother' looking in at our business. Our competitive edge is our production methods to produce quality turf and we wanted to protect that. We understand that we need to charge enough so that we cover all costs so that we are profitable now and in the future. We have learnt that when you calculate your COP, you are doing it for your business – not for Turf Australia or anyone else. Knowing how much it costs to produce your grass means you know how much you need to sell it for. This has been very beneficial for our business.

Other growers should use this tool because firstly we have already paid for it with our levies. It's good to get something back! Secondly and more importantly turf farming is now not only about producing a great quality new lawn for someone; it's about having a good quality business to support your great farm. This means understanding where your dollars are going; how to have more money in your pocket and less going out the door.

Research from Turf Australia has shown that people are willing to pay higher prices for good quality turf. By understanding our true cost of production, we can increase our confidence in appropriately pricing our turf.

Contact Turf Australia on ph 02 4588 5735, email admin@turfaustralia.com.au or visit the website www.turfaustralia.com.au, for information on workshops and webinars or to find contact details for a member of the project delivery team to help you.

Horticulture Australia

This project has been funded by HAL using the turf levy and matched funds from the Australian Government.

Staying in the Green

Turf Australia
Grow Green

Case Study

Qualturf Pty Ltd

Key individuals involved in the business:
Charlie and Pauline Saliba *(Business Owners),*
Paul McCullough *(Production Manager)*

Property location:
Cornwallis and Wilberforce, NSW

Family or corporate:
Corporate

Owned or leased:
Approximately 80% owned, 20% leased

Size of property:
100ha

Ha or sqm of turf produced:
over 1,000,000m^2

Enterprise:
Producers of premium quality turf

Average annual rainfall:
744mm

Our names are Charlie and Pauline Saliba and we have owned and managed turf farms for over 25 years. We now employee 15 staff to work in our specialist turf business. The Turf Cost of Production Calculator, delivered under the Staying in the Green program, has helped us compare our 'actual' Cost of Production (COP) to our 'gut feel'.

We previously produced quality fruit and vegetables and experienced a downturn in the market. We reassessed our business direction, diversified into turf production and have been growing turf since the late 1980's.

Qualturf is located in Richmond NSW along the Hawkesbury River. We irrigate from the river and we also have a large dam on site. This guarantees a constant water supply for turf irrigation. This infrastructure recently enabled us to sustain consistent production of quality turf throughout the worst drought in recorded history.

Our convenient location allows us to deliver fresh cut turf to all of the Sydney metropolitan areas, Newcastle, Central Coast and South Coast.

Our staff includes a team of specialists experienced in farm management, turf and landscape project construction, renovation, turf nutrition and turf consultancy. Qualturf is an innovative turf supplier who is recognised for high quality service, turf and turf supplies. We offer a number of services to clients, including turf installation and washing, sprig planting and over-planting.

We have expanded Qualturf's operations through leasing both land and equipment, and all profits have been reinvested into the growth of our business. We have both domestic retail and commercial markets with the varieties we grow. We also offer clients a number of options in how we cut the turf specific for their intended purpose.

In recent years we have introduced a number of 'new' turf varieties. These have included improved variations of traditional turf varieties and also developing additional varieties from overseas. Over time we have implemented more modern farming practices. Our machinery is now more high-tech with GPS capabilities in tractors and automated harvesters and stackers. Overall we have a more mechanised machinery inventory to help get the work done in a quicker and safer manner. The latest addition within our business is a large automated travelling irrigator. This applies a known volume of water evenly across a paddock and adds precision to our irrigation management practices.

Qualturf Pty Ltd

What challenges do you face?

Generally we have seen the industry become more competitive. There are more local turf growers and consumer demand has increased.

Consumer expectations have also increased to the point where they require turf that is:

- weed free,
- available all year,
- available within hours of making the phone call.

There is certainly a generational change in the expected lead times for processing turf orders. The modern consumer seeks turf 'now', instead of previously ordering and then waiting for the order to be processed.

The short term challenge that Qualturf face is sourcing and retaining good, reliable staff. We have also identified that some growers are undervaluing their products and services.

The long term challenges include:

- Regulations and legislation: changes to WHS Acts, Pesticide Acts, Heavy Vehicle, and water usage legislation.
- Changes to climatic conditions are another challenge we face.

Some challenges with production costs include:

- Parts replacements for machinery and equipment.
- Broad pricing increases eg. fuel, oil, electricity, and water.

Why is knowing your cost of production (COP) important?

There are two main reasons why we wanted to understand our cost of production:

- Financially, to ensure our pricing is competitive in the market place and to ensure our expenses aren't above our income, and
- To understand the profitability associated with growing particular varieties.

We feel that if all growers have an accurate understanding of their COP, there may be an opportunity to develop more sustainable and consistent pricing for good quality turf across the whole industry. The outputs from the Turf COP Calculator can assist businesses to remain viable and competitive at the same time.

There are many benefits to growers from understanding their turf COP. Through increased knowledge, growers may be able to withstand pressure from consumers expecting or seeking reduced prices. Understanding your true cost of production is also good business practice.

Initially there were some barriers to us becoming involved in calculating our turf COP. The original tool required a detailed level of technical knowledge and information to complete.

With such a significant level of production in our business this was a limitation. We have a significant number of tractors working in our business and entering values, fuel consumption, annual hours, and annual repairs and maintenance for each of these machines was far too time consuming. We welcomed the development of a 'Lite' version of the calculator and this version is much easier to use. We find it quite motivating to put in the data and look forward to how it will positively impact our business and businesses around us.

Other growers should use this tool so as they can gain accurate information pertaining to their actual cost of producing turf rather than going on their 'gut feel'.

Contact Turf Australia on ph 02 4588 5735, email admin@turfaustralia.com.au or visit the website www.turfaustralia.com.au, for information on workshops and webinars or to find contact details for a member of the project delivery team to help you.

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Turf Australia
Grow Green

HAL
Horticulture Australia

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Why Staying in the Green?

- Building Profitable Turf Businesses through understanding Cost of Production

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What is Staying in the Green?

- National program with workshops in key turf producing areas
- Webinars ie. on line workshops accessed from your computer while you sit at home
- Assess to phone support to provide help
- 1:1 face to face support in some areas

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Turf Australia
Grow Green

How does it work?

- Uses a simplified Turf Cost of Production Calculator
- Based on case study farm examples
- Data input sheets to make it easy to collect your own data
- Calculate what it costs your business to:
  - Grow turf
  - Deliver turf
  - Install turf

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Turf Australia
Grow Green

Benefits

- Know you are pricing turf so there is a profit margin
- Understand and reduce your business costs
- Grow varieties that give you the best return
- Charge the right amount for delivering and/or installing turf

Profitable, robust and sustainable turf businesses

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Who is involved

- Supported by Turf Australia and State Turf Organisations
- Make use of your turf levy

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To get started, contact

- Turf Australia
  Phone: 02 45885735
  Email: admin@turfaustralia.com.au
  www.turfaustralia.com.au

- State Turf Organisations or Rural Directions

NSW	WA	Queensland	SA and Victoria
Dave Raison ph 0413 837 837 ido@turfnsw.com.au	Eva Ricci ph 0422 120 990 idowa@turfaustralia.com.au	Jim Vaughan Ph 0407 131025 jim@qtpa.com.au	Simon Vogt ph 0407 959 836 svogt@ruraldirections.com

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Turf Cost of Production Calculator

Workbook

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TGA Turf Growers Association of Western Australia Inc.

Turf Victoria
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NSW Local Land Services Greater Sydney

Turf Queensland
Grow Green

TURF NSW

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Learning Outcomes

- At the end of this session, participants will understand:
- How to calculate a gross margin for each of the different varieties of turf that they produce
- How to calculate their average cost of production for growing turf
- How to calculate their average cost for delivering turf
- How to calculate their average cost for installing turf
- Some key production and whole of business benchmarks for their turf business

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Session plan

Time	Session	Topic
9.00 – 9.30	30 minutes	Welcome and introductions • Everyone to introduce themselves and tell us what they love about Turf • Aims and expectations • Ground rules – confidentiality, phones, working above the line
9.30 – 9.45	15 minutes	Pre workshop evaluation form
9.45 – 10.45	60 minutes	Gross Margin analysis using "Lite" COP tool • What is a Gross Margin? • Production parameters • Variable cost estimates • Price, yield, and cost assumptions by variety • Farm Production Summary • Process – Case study first; own figures second
10.45 – 11.00	15 minutes	Morning Tea break
11.00 – 12.00	60 minutes	Business Overheads • What is an Overhead? • Farm labour • Farm operating overhead expenses • Farm capital expenditure • Process – Case study first; own figures second
12.00 – 12.30	30 minutes	Turf Delivery cost analysis • Case study only
12.30 – 1.15	45 minutes	Lunch
1.15 – 1.30	15 minutes	Reflection on the morning session
1.30 – 2.00	30 minutes	Turf Installation cost analysis • Case study only
2.00 – 2.30	30 minutes	Summary of outputs • Summary worksheet • Benchmark report • Submission of benchmarking data (optional)
2.30 – 2.45	15 minutes	Afternoon break
2.45 – 3.30	45 minutes	Identify and discuss some of the additional outputs that the "Complete" COP tool will produce Gross Margin analysis using "Complete" COP tool • Machinery costs • Detailed price, yield, and cost assumptions by variety • Detailed labour costs
3.30 – 3.45	15 minutes	Reflection
3.45 – 4.00	15 minutes	Post workshop evaluation and close

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Welcome and Introductions

My expectations from the workshop are:

Some dual responsibilities during this workshop include:

- Confidentiality – what is said in these workshops is confidential, please listen and share openly, but remember "what is said here, stays here"
- Work above the line
  - Take ownership
  - Be accountable
  - Be responsible
- Ask questions and think about what might be possible
- Understand the case study financials provided are examples only. It is critical to focus on the methodology being presented. Recognise the actual numbers will be different from one turf business to the next. All financials are from real examples.
- Respect others in the group

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1. Introduction

What is cost of production?

Your turf cost of production is the full factor average cost for your business that is associated with growing, delivering, and installing a unit (square metre) of turf.

What costs are included in the calculation?

- Variable costs such as fuel, fertiliser, seed, soil conditioners, herbicides, and machinery repairs and maintenance
- Irrigation costs (water and pumping)
- PBR and industry levy costs
- Farm labour costs
- Farm overhead costs such as electricity, telephone, insurance, land and building leases
- Depreciation and finance costs associated with all items of farm capital such as land, buildings and infrastructure, vehicles and machinery, and farm irrigation
- An optional worksheet to calculate the costs associated with turf delivery
- An optional worksheet to calculate the costs associated with turf installation

Why is it important to understand your cost of production?

Please list some of the reasons why you think it is important to understand your turf cost of production.

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Understanding your cost of production

Understanding your cost of production can assist with:

- Building a profitable, sustainable, and robust turf business by understanding your true cost of production
- Ensuring that you build in an appropriate margin when selling your turf and any other products and services which you offer
- Understanding your cost of production can assist you with individually pricing the different varieties of turf that you produce
- Understanding the full costs to of delivering and installing turf can assist you with pricing each of these additional services
- Identifying the biggest cost drivers within your turf business and how these could be better managed
- Understanding which business models can assist with reducing your cost of production or increasing your profit margin

Take a couple of minutes to reflect on what you think your cost of production might be for:

- Growing turf
- Delivering turf
- Installing turf

Record your answers here

- $_____ per square metre for growing turf
- $_____ per square metre for delivering turf
- $_____ per square metre for installing turf

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Other business indicators

Cost of production is one business indicator that is important to your business. What are some other business indicators that are important to your turf business?

1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

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Some other important business indicators include:

- Gross margin per hectare
- Average price received per square metre
- Net profit
- Business turnover
- Net profit as a percentage of turnover
- Return on capital or return on investment
- Benefit : Cost ratio
- Machinery investment to income ratio
- Customer satisfaction
- Environmental indicators
- Annual business growth
- Level of employee turnover
- Level of business innovation

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Overview of the turf cost of production calculator

The Turf Cost of Production Calculator "Lite" version contains the following worksheets.

	Worksheet title	Content
1	Title	Introduction to the model
2	Production Parametres	Turf varieties grown and farm details
3	GM Information	An intro to the gross margin analysis
4	Variable Cost Estimates	"Lite" version estimates for variable costs
5	Variety 1	Yield and price assumptions for 1st variety
6	Variety 2	Yield and price assumptions for 2nd variety
7	Variety 3	Yield and price assumptions for 3rd variety
8	Variety 4	Yield and price assumptions for 4th variety
9	Variety 5	Yield and price assumptions for 5th variety
10	Variety 6	Yield and price assumptions for 6th variety
11	Variety 7	Yield and price assumptions for 7th variety
12	Variety 8	Yield and price assumptions for 8th variety
13	Variety 9	Yield and price assumptions for 9th variety
14	Variety 10	Yield and price assumptions for 10th variety
15	Farm Production Summary	Summary of gross margin by variety
16	Farm Labour	"Lite" version data entry for farm labour
17	Farm Overhead Expenses	Data entry for farm overheads
18	Farm Capital Expenditure	Full schedule of assets employed in the business
19	Turf Delivery	Cost of production data entry for turf delivery
20	Turf Installation	Cost of production data entry for turf installation
21	Summary	Full summary of Cost of Production indicators
22	Benchmark Report	Summary of key business benchmarks

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The Turf Cost of Production Calculator "Complete" version contains the following worksheets.

	Worksheet title	Content
1	Title	Introduction to the model
2	Production Parametres	Turf varieties grown and farm details
3	Machinery Costs	Full analysis of machinery costs on a per pass basis
4	GM Information	An intro to the gross margin analysis
5	Variety 1	Yield, price, and input assumptions for 1st variety
6	Variety 2	Yield, price, and input assumptions for 2nd variety
7	Variety 3	Yield, price, and input assumptions for 3rd variety
8	Variety 4	Yield, price, and input assumptions for 4th variety
9	Variety 5	Yield, price, and input assumptions for 5th variety
10	Variety 6	Yield, price, and input assumptions for 6th variety
11	Variety 7	Yield, price, and input assumptions for 7th variety
12	Variety 8	Yield, price, and input assumptions for 8th variety
13	Variety 9	Yield, price, and input assumptions for 9th variety
14	Variety 10	Yield, price, and input assumptions for 10th variety
15	Farm Production Summary	Summary of gross margin by variety
16	Farm Labour	"Complete" version data entry for farm labour
17	Farm Overhead Expenses	Data entry for farm overheads
18	Farm Capital Expenditure	Full schedule of assets employed in the business
19	Turf Delivery	Cost of production data entry for turf delivery
20	Turf Installation	Cost of production data entry for turf installation
21	Summary	Full summary of Cost of Production indicators
22	Benchmark Report	Summary of key business benchmarks

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2. Gross Margin Analysis

2.1 Background

A gross margin is the profit margin that can be generated from selling a product in the market place before business overheads are taken into consideration. As a result a gross margin is calculated by subtracting the variable costs associated with producing a product from the price that you can achieve in the market price.

Gross margin = selling price – variable costs

The turf cost of production calculator completes a gross margin analysis for each variety of turf that you produce.

It does this by considering:

- Yield assumptions for each variety
- Price assumptions for each variety
- Your variable costs associated with growing turf

Variable costs are costs to your business that change according to any changes in the quantity of turf that you grow each year. Examples of variable costs include:

- Fuel and oil costs
- Machinery repairs and maintenance costs
- Fertiliser costs
- Chemical costs
- Soil conditioners
- Seed or stolon costs
- Irrigation costs

The gross margin analysis in the Turf Cost Calculator involves entering production data into the following twelve worksheets within the tool that are relevant to your business.

Worksheets	Topics
Worksheet 1	Production Estimates
Worksheet 2	Variable Cost Estimates
Worksheets 3 - 12	Yield and Price Assumptions for up to 10 Varieties

A summary of the gross margin analysis is then presented in the worksheet - Farm Production Summary.

2.2 General Data Entry tips

All data entry cells throughout the tool are shaded in yellow or have a drop down box to choose from. Cells which are not shaded in yellow will calculate automatically.

The password to access the Turf Cost Calculator is: tq2012

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2.3 Farm Production Parameters

You will note the following input requirements on the 'Production Parameters' worksheet. This first section of data entry captures the varieties of turf that are grown on your turf farm and also captures some basic information about your turf business. The Turf Cost of Production Calculator provides scope to enter information for up to 10 different varieties of turf.

Entering each of the different types of turf that you grow on your farm allows you to calculate the corresponding gross margin that can be achieved for each variety. This is achieved by entering the unique yield, price, and cost assumptions for each variety.

Farm Production Parameters

Total farm production area	**60.00**	**hectares**

Farm varieties - areas planted

Couch	**20.00**	**hectares**
Buffalo	**30.00**	**hectares**
Zoysia	**10.00**	**hectares**
	0.00	**hectares**
	0.00	**hectares**
	0.00	**hectares**
	0.00	**hectares**
	0.00	**hectares**
	0.00	**hectares**
	0.00	**hectares**

Farm Details

State	QLD	
Growing Region (within State)	**Sunshine Coast**	
Business Ownership	Family	
Annual Rainfall	**800.0**	**mm**
% Land Owned	**80.00%**	
% Land Leased or Sharefarmed	**20.00%**	

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2.4 Variable cost estimates

You will note the following data entry cells on the 'Variable Cost Estimates' worksheet. The variable costs worksheet allows you to enter data for the following variable costs within your business:

- Fuel and oil
- Machinery repairs and maintenance
- Fertiliser
- Chemical
- Soil conditioners
- Seed or stolons
- Irrigation costs

These costs can be sourced from either your management accounts or historical tax returns. If taking these numbers from historical tax returns you will need to make sure that they reflect the current level of production that is taking place within your business. If the scale of your business has changed since your most recent available tax returns then you will need to adjust the numbers to reflect your current level of operations.

Variable Cost Estimates for GMs

Machinery (FORM)	$ per Annum	Total SqM Harvested Annually	$ per SqM (allocated as a variable cost)
Annual business cost for fuel & oil (net of rebate and fuel and oil costs associated with delivery and installation)	$90,000	408,800	$0.22
Annual business cost for machinery R&M (net of any R&M associated with delivery and installation)	$138,000	408,800	$0.34

Fertiliser, Chemicals, Seed & Water	$ per Annum	Total SqM Turf Grown Annually	$ per SqM (allocated as a variable cost)
Fertiliser	$35,000	408,800	$0.09
Chemical (herbicide, fungicide, insecticide)	$48,500	408,800	$0.12
Soil Conditioners	$5,500	408,800	$0.01
Seed or Stolons	$25,000	408,800	$0.06
Irrigation (water cost and pumping)	$25,500	408,800	$0.06

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2.5 Variety Yield and Price Assumptions

The following input cells are utilised to capture the yield and price assumptions for each of the varieties of turf that you grow.

Income								per SqM	Total Area
Yield									
No of cuts per year	1.2								
Total area to be cut	200,000	square metres							
less									
Retention for regrowth (rhizomes)	0.00%								
Scrap rate	1.00%	→	2,000	square metres	**Sq M Harvested**	237,600			
Pricing									
Market Sector Splits							PBR % Cost		
Retail (direct to customers)	25%	of crop @	$5.00	per sq metre			2.00%	$5.00	$297,000.00
Trade (i.e. landscapers)	25%	of crop @	$4.00	per sq metre			2.00%	$4.00	$237,600.00
Re-seller (i.e. lanscaping yards)	25%	of crop @	$3.00	per sq metre			2.00%	$3.00	$178,200.00
Wholesale (to other farms)	25%	of crop @	$2.00	per sq metre			2.00%	$2.00	$118,800.00
Levies and Other			Per Sq Metre						
Levies			$0.015					$0.02	$3,564.00
PBR			$0.070					$0.07	$16,632.00
Other			$0.000					$0.00	$0.00
Total Income								$3.42	$811,404.00

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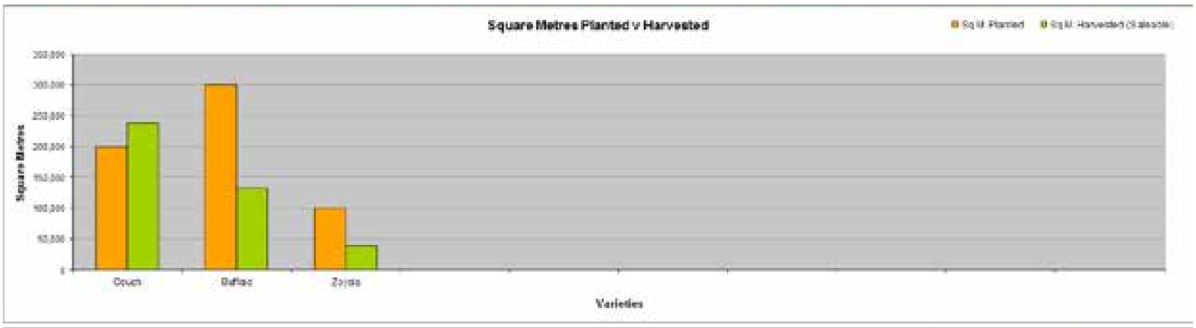
2.6 Farm Production Summary

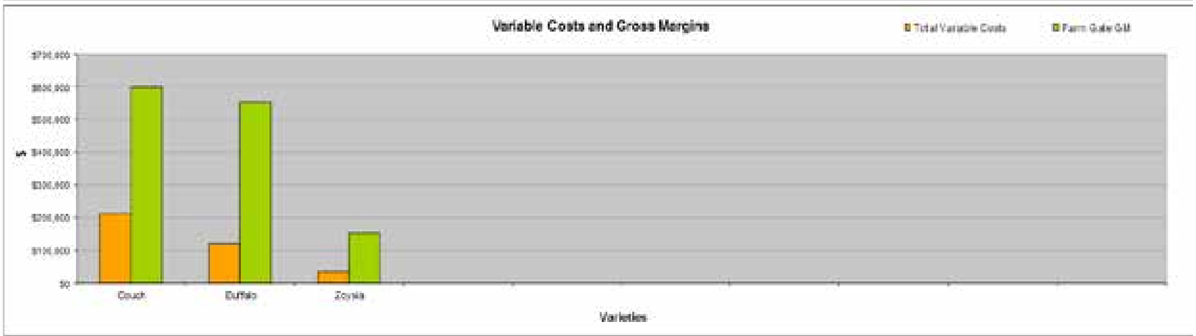
The outputs from the gross margin analysis by variety are summarised on the 'Farm Production Summary' worksheet as follows:

Production Summary

Total farm production area 60.00 Ha

Varieties	Ha Planted	Sq M Planted	Ha Harvested	Sq M Harvested (Saleable)	Total Variable Costs	Total Variable Costs / Sq M	Total Revenue	Farm Gate GM	GM / Sq M
Couch	20.00	200,000	23.76	237,600	$213,596	$0.90	$811,404	$597,808	$2.52
Buffalo	30.00	300,000	15.00	132,000	$118,664	$0.90	$669,570	$550,906	$4.17
Zoysia	10.00	100,000	4.00	39,200	$35,240	$0.90	$188,332	$153,092	$3.91
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
	0.00	0	0.00	0	$0	$0.00	$0	$0	$0.00
Totals	60.00	600,000	42.76	408,800	$367,500	$0.90	$1,669,306	$1,301,806	$3.18





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3. Business Overheads

Business overheads are the costs incurred to your business which are fixed and do not vary according to the quantity of turf that you produce in your turf business on an annual basis.

Examples of business overheads or fixed costs include:

- Annual council rates
- Accounting expenses
- Utilities such as electricity and telephone
- Permanent labour
- Financing costs
- Depreciation
- Building leases
- Membership fees

3.1 Farm Labour Requirements

All farm labour that relates to growing and marketing your turf should be accounted for in the 'Farm Labour' worksheet. The only labour not to be included in this section is any labour that relates to turf delivery or turf installation as this is accounted for separately.

The 'Farm Labour' worksheet captures the following data inputs.

Labour Requirements

Total Labour	$ per Annum	Estimated Number of Full Time Equivalents (FTEs)	Total SqM Harvested Annually	$ per SqM
Permanent or Part-Time	$228,250	3.50	408,800	$0.56
Casual	$0	0.00	408,800	$0.00
Owner/operator drawings	$100,000	1.20	408,800	$0.24
Total	$328,250	4.70	408,800	$0.80

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3.2 Farm Overhead Expenses

The majority of farm overhead expenses are captured in the "Farm Overhead Expenses' worksheet. A copy of what this data input sheet looks like is included below.

Additional Operating Expenses

Diesel and unleaded figures entered here should represent fuels used other than those already accounted for in the growing costs of the turf (F.O.R.M for tractors) at the beginning of the model. These figures should cover utilities and other equipment not already accounted for.

Diesel	2,000	litres at	$1.10	per litre	$2,200	Water charges	$1,000
Unleaded	1,000	litres at	$1.50	per litre	$1,500	Licenses and permits	$500
Engine oil (10%)	300	litres at	$8.00	per litre	$2,400	Fees and charges (government)	$0
Repairs and maintenance					$12,000	Audits	$0
Electricity	100,000	kwh at	$0.20	per kwh	$20,000	Consultants	$1,500
Accounting and legal					$8,000	Training	$1,500
Administrative expenses					$3,000	Membership fees	$500
Phone (domestic and mobile)					$5,000	Marketing and advertising expenses	$5,000
Travel (related to business)					$500		$0
Vehicle registrations	3	at	$600	each	$1,800		$0
Vehicle insurance			$500	each	$1,500		$0
Farm insurances					$10,000		$0
Council rates					$6,000		$0
Chemicals (cleaning)					$0		$0
Equipment leases					$20,000		$0
Land and building leases					$6,000		$0
Total Farm Operating Expenses					$109,900		

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3.3 Capital related overhead costs

A cost of production analysis would be incomplete without considering the capital related costs which are incurred to operate your turf business. Capital related costs which are essential to include in a cost of production analysis include:

- Any depreciation related costs representing the decrease in value over time and use of the machinery and equipment employed in your turf business.
- The finance or opportunity cost associated with holding.
    - Plant and equipment
    - Buildings and infrastructure
    - Land

While there may not always be a cash cost associated with capital items such as land (if they have been fully paid for) there is still an opportunity cost associated with holding this land which needs to be taken into consideration when calculating your true cost of production. If you were not using that land to grow turf you could either be earning a rental income stream from leasing the land or you could sell the land and invest the money into an alternative form of investment and earn a monetary return. The same goes for any plant or equipment in your turf business that is fully paid for and not financed. If you weren't using this item in your turf business you could sell the item and invest the resulting money in an income earning asset such as a bank deposit.

It is also important to fully capture the depreciation in asset values such as machinery or buildings over time as there will come a time when they will need to be replaced. If you haven't factored in this depreciation cost when calculating your cost of production and pricing your turf and other services your business will not be in position to replace these essential items of capital when they need to be replaced.

The Turf Cost of Production Calculator allocates a cost for all items of capital expenditure required to operate a turf business based on their acquisition cost, useful life, and likely salvage value at the end of their useful life. To do this the tool considers your turf business as a 20 year project and allocates capital related expenditure according to when it will be incurred across this 20 year time frame. The tool uses a discounted cash flow analysis to calculate the equivalent annual capital related cost that needs to be included for your turf business in a cost of production analysis.

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You will need to complete the following table within the 'Farm Capital Expenditure' worksheet to establish the capital related costs for your turf business.

Capital Cost

Project Length (Years)	20					
Capital Item	**No. of Items**	**Cost of Items**	**Total Cost**	**Purchase Year**	**Life (0-20 years)**	**Salvage Value**
Buildings and Infrastructure						
Land	1	$1,500,000	$1,500,000	0	20	100%
Office	1	$25,000	$25,000	0	20	60%
Shed	1	$100,000	$100,000	0	20	60%
Land Prep	1	$100,000	$100,000	0	20	0%
Electricity Connection	1	$40,000	$40,000	0	20	0%
Office Equipment	1	$10,000	$10,000	0	5	10%
Fencing	1	$20,000	$20,000	0	20	20%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
Vehicles and Machinery						
Utilities	1	$50,000	$50,000	0	5	40%
Slasher	1	$10,000	$10,000	0	10	20%
Spray Rig	1	$20,000	$20,000	0	10	20%
Tractor 70HP	4	$60,000	$240,000	0	10	30%
Large Mower	1	$48,000	$48,000	0	10	40%
Medium Mower	1	$30,000	$30,000	0	10	20%
Small Mower	1	$10,000	$10,000	0	15	30%
Power Harrows	1	$19,456	$19,456	0	10	20%
Fertiliser Spreader	1	$3,545	$3,545	0	12	20%
Manure Spreader	1	$26,225	$26,225	0	15	30%
Vacuum	1	$30,000	$30,000	0	12	20%
Agrivator	1	$31,636	$31,636	0	12	30%
Harvester	1	$270,000	$270,000	0	15	30%
Planter	1	$30,000	$30,000	0	10	20%
Bobcat	1	$20,000	$20,000	0	10	30%
Fertiliser dump	1	$2,000	$2,000	0	20	20%
Tractor Medium	2	$80,000	$160,000	0	10	40%
Tractor Large	1	$90,000	$90,000	0	12	40%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
Farm Irrigation						
Pumps	1	$1,000	$1,000	0	10	20%
Generator	1	$5,000	$5,000	0	15	10%
Layflat	1	$5,000	$5,000	0	10	10%
Irrigators	2	$200,000	$400,000	0	15	40%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
Other Equipment						
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
Workshop tools and equipment	1	$20,000	$20,000	0	5	20%
Sundries	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Total capital outlay			$3,316,862			

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4. Turf Delivery

The Turf Cost of Production Calculator allows you to calculate the cost to your business associated with delivering turf. The calculator allows you to calculate an average delivery cost if you use contractors to deliver turf in addition to delivering turf with your own plant, equipment, and employees.

The Turf Delivery analysis considers:

1. Contract delivery of turf
2. Farm delivery of turf
3. Fuel, oil, repairs, and maintenance (FORM) costs for turf delivery equipment
4. Delivery labour
5. Capital investments required for delivery
6. Other delivery related expenses

4.1 Contract delivery of turf

The contact delivery of turf component considers the percentage of harvested turf delivered by a contractor, the average price associated with using a contractor for delivering turf and the average end charge to your customer for delivering turf. The income and expenditure lines flow right through to the summary analysis for your whole turf business.

Contract Delivery of Turf

% of harvested turf delivered by a contractor	80.00%	
Contract price for delivery of turf	$1.00	per square metre
Charge to end customer	$1.20	per square metre

Varieties	Total Cost	Total Income
Couch	$190,080	$228,096
Buffalo	$105,600	$126,720
Zoysia	$31,360	$37,632
	$0	$0
	$0	$0
	$0	$0
	$0	$0
	$0	$0
	$0	$0
	$0	$0
Totals	$327,040	$392,448

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4.2 Farmer Owned Delivery of Turf

The analysis for farmer owned turf delivery starts with the following data input

Farmer Owned Turf Delivery Operation

% of harvested turf delivered by the farm	15.00%	
Delivery charge per SqM for deliveries	$1.20	$73,584

4.3 Machinery Operations associated with delivering turf

The fuel, oil, repairs, and maintenance costs for the items of equipment used to deliver turf are calculated based on the following inputs.

Delivery Equipment Details	Delivery Truck	Forklift	Trailer	Other	Other	Other
Annual hours	520	60	0	0	0	0
Machine Operation Costs - Assumptions						
Estimated fuel usage (litres per hour)	20	10	0	0	0	0
Price of fuel less rebate ($ per litre)	$1.10	$1.10	$0.00	$0.00	$0.00	$0.00
Repairs & maintenance cost per year	$2,000	$1,000	$0	$0	$0	$0
Hourly Cost Calculations	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)
Fuel and oil (oil is 10% fuel cost)	$24.20	$12.10	$0.00	$0.00	$0.00	$0.00
Repairs & Maintenance	$3.85	$16.67	$0.00	$0.00	$0.00	$0.00
Total Hourly Cost ($ per Hour)	$28.05	$28.77	$0.00	$0.00	$0.00	$0.00
Annual Transport Machinery Cost (F.O.R.M)	$14,584	$1,726	$0	$0	$0	$0
Cost per Sq Metre	$0.24	$0.03	$0.00	$0.00	$0.00	$0.00

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4.4 Turf Delivery Labour

The following input cells capture the labour related costs to your turf business for turf delivery.

Delivery Labour

On-costs	
Workcover	2.00%
Superannuation contribution	9.25%
Leave loading (percent of 4 weeks wages)	15.00%
Training	0.00%

Casual Employees	Hourly Rate	Annual Hours	Rate + On-costs	Annual Cost
Casual worker 1	$0.00	0	$0.00	$0
Casual worker 2	$0.00	0	$0.00	$0
Casual worker 3	$0.00	0	$0.00	$0

Permanent and Part-time Employees	% FTE	Weekly Salary	Salary + On-costs	Annual Cost
Employee 1 (Driver)	0.5	$1,000	$1,263	$32,825
Employee 2 (Driver assistant)	0.0	$0	$0	$0
Employee 3	0.0	$0	$0	$0
Other	0.0	$0	$0	$0
Other	0.0	$0	$0	$0

Total Labour Cost	$32,825
Labour Cost per SqM	$0.54

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4.5 Items of capital expenditure associated with delivering turf

Capital related items that are specific to the turf delivery side of your business can be included in the following table. Items listed here that relate to turf delivery should not be listed the main capital expenditure table that is included in the business overheads section.

Capital Investment - Delivery

Project Length (Years) 20

Please ensure that if you have selected the **"mixed"** option that you ensure that the capital costs here reflect that there is a reduced requirement for capital from purely a farm owned operation.

Capital Item	No. of items	Cost of items	Total cost	Purchase year	Life (max 20)	Salvage value
Delivery Truck	1	$50,000	$50,000	0	10	20%
Forklift	1	$15,000	$15,000	0	10	30%
Trailer	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
	0	$0	$0	0	0	0%
Total capital outlay			$65,000			

Annual capital cost (over life of farm)	$8,205
Capital cost per square metre of turf delivered	$0.13

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4.6 Other operating expenses related to turf delivery

Additional expenses associated with delivering turf can be recorded in the following section of the 'Turf Delivery' worksheet

Other Operating Expenses

Registrations	$2,500
Insurance	$1,500
Clothing and safety equipment	$500
Ropes and tie-downs	$500
Other	$0
Other	$0
Other	$0
Other	$0
Other	$0
Annual operating (other)	$5,000
Cost per square metre of turf delivered	$0.08

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Reflection

What have been the top 5 things I have learned in this mornings session?

What new questions do you have?

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5. Turf Installation

The Turf Cost of Production Calculator allows you to calculate the cost to your business associated with installing turf. The calculator allows you to calculate an average installation cost if you use contractors to install turf in addition to installing turf with your own plant, equipment, and employees.

The Turf Installation analysis considers:

1. Contract installation of turf
2. Farm based installation of turf
3. Preparation cost calculator for installations requiring preparation
4. Fuel, oil, repairs, and maintenance (FORM) costs for turf installation equipment
5. Installation labour
6. Capital investments required for installation
7. Other installation related expenses

5.1 Contract Installation of Turf

The contract installation of turf component considers the percentage of harvested turf delivered by a contractor, the average price associated with using a contractor for installing turf and the average end charge to your customer for turf installation. The income and expenditure lines flow right through to the summary analysis for your whole turf business.

Contract Installation of Turf

Cost to business for installation of turf by contractor	**$2.00**	**per square metre**
% of total harvest installed by contractor	**20%**	
Installation charge to customer (adding your margin) (Should be greater than the cost to business)	**$2.40**	**per square metre**

Profit
$19,008
$10,560
$3,136
$0
$0
$0
$0
$0
$0
$0
$32,704

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5.2 Farm Based Installation of Turf

The following table captures the first pieces of information required to understand the costs associated with farm based installation of turf. The preferred scale relates to whether you like to price up installation jobs per 10m², 50m², 100m² or any other preferred scale that you like to use when preparing such quotes.

Farm Based Installation Costs (per scale of measurement above)

Preferred scale for estimations	**100**	**square metres**	
% of total harvest installed by farm operation	**20%**		**Revenues**
Turf laying charge	**$2.40**	**per square metre**	**$196,224**
Preparation charge	**$10.00**	**per square metre**	**$81,760**

5.3 Cost Calculator for Preparations prior to installation

Within the 'Turf Installation' worksheet the tool has the capability to calculate an estimated cost for any site preparations required before turf can be installed.

This involves the following input assumptions.

Preparation Product Costs (as per scale)

% of installations that require site prep	**10%**				
Herbicide	**$20.00**		**per**	**100**	**SqM**
Contract soil levelling	**$200.00**		**per**	**100**	**SqM**
Soil depth applied (mm)	**100**	**mm**			
Quantity Required	**10.00**	**m^3**	**per**	**100**	**SqM**
Cost per cubic metre	**$30.00**				
Soil cost	**$300.00**				
Water retention & fertiliser products	**$50.00**				
Disposal costs	**$100.00**				
Other	**$50.00**			**Per Square Metre**	
Total	**$720.00**	→		**$7.20**	

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5.4 Machinery Operations associated with installing turf

The fuel, oil, repairs, and maintenance costs for the items of equipment used to install turf are calculated based on the following inputs.

Machinery Operations (F.O.R.M)

Delivery Equipment Details	Truck	Bobcat	Trailer	Other	Other	Other
Annual hours	400	800	400	0	0	0
Machine Operation Costs - Assumptions						
Estimated fuel usage (litres per hour)	20	15	0	0	0	0
Price of fuel less rebate ($ per litre)	$1.10	$1.10	$0.00	$0.00	$0.00	$0.00
Repairs & maintenance cost per year	$4,000	$6,000	$500	$0	$0	$0
Hourly Cost Calculations	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)
Fuel and oil (oil is 10% fuel cost)	$24.20	$18.15	$0.00	$0.00	$0.00	$0.00
Repairs & Maintenance	$10.00	$7.50	$1.25	$0.00	$0.00	$0.00
Total Hourly Cost ($ per Hour)	$34.20	$25.65	$1.25	$0.00	$0.00	$0.00
Annual Machinery Cost (F.O.R.M)	$13,680	$20,520	$500	$0	$0	$0
Cost per Sq Metre	$0.17	$0.25	$0.01	$0.00	$0.00	$0.00

5.5 Turf Installation Labour

The following input cells capture the labour related costs to your turf business specifically related to turf installation.

Installation Labour

On-costs	
Workcover	4.00%
Superannuation contribution	9.25%
Leave loading (percent of 4 weeks wages)	15.00%
Training	2.00%

Casual Employees	Hourly Rate	Annual Hours	Rate + On-costs	Annual Cost
Casual worker 1	$25.00	1,200	$28.31	$33,975
Casual worker 2	$0.00	0	$0.00	$0
Casual worker 3	$0.00	0	$0.00	$0

Permanent and Part-time Employees	% Full Time Employee	Weekly Salary	Salary + On-costs	Annual Cost
Employee 1 (Driver)	0.6	$1,000	$1,303	$40,638
Employee 2 (Driver assistant)	0.0	$0	$0	$0
Employee 3 (Administration)	0.0	$0	$0	$0
Other	0.0	$0	$0	$0
Other	0.0	$0	$0	$0

Total Labour Cost	$74,613
Labour Cost per SqM	$0.91

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5.6 Items of capital expenditure associated with installing turf

Capital related items that are specific to the turf installation side of your business can be included in the following table. Items listed here that relate to turf installation should not be listed the main capital expenditure table that is included in the business overheads section. Also they should not have been previously listed in the capital expenditure table for turf delivery.

Capital Investment - Installation

Project Length (Years) 20

Capital Item	No. of items	Cost of items	Total cost	Purchase year	Life (max 20 years)	Salvage value
Truck	1	$50,000	$50,000	0	10	30%
Bobcat	1	$45,000	$45,000	0	10	30%
Trailer	1	$5,000	$5,000	0	10	25%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Other	0	$0	$0	0	0	0%
Total capital outlay			$100,000			

Annual capital cost (over life of farm)	$12,085
Capital cost per square metre of turf installed	$0.15

5.7 Other operating expenses related to turf installation

Additional expenses associated with delivering turf can be recorded in the following section of the 'Turf Installation' worksheet

Other Operating Expenses

Registrations	$2,000
Insurance	$1,000
Clothing and safety equipment	$1,000
Ropes and tie-downs	$500
Bobcat hire	$0
Other	$0
Other	$0
Other	$0
Other	$0
Annual operating (other)	$4,500
Cost per square metre of turf installed	$0.06

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6. Summary of Outputs from the "Lite" Turf Cost of Production Calculator

The following summary outputs are generated from the "Lite" Cost of Production Calculator.

Summary Statistics

Output summary

Annual production (square metres)	408,800
Total annual gross revenue	$2,609,546
Total annual production cost	$1,882,769
Average cost per sq m	$4.53
Average revenue per sq m	$6.38
Total overhead costs per sq m	$1.83
Total hectares of turf	60.00

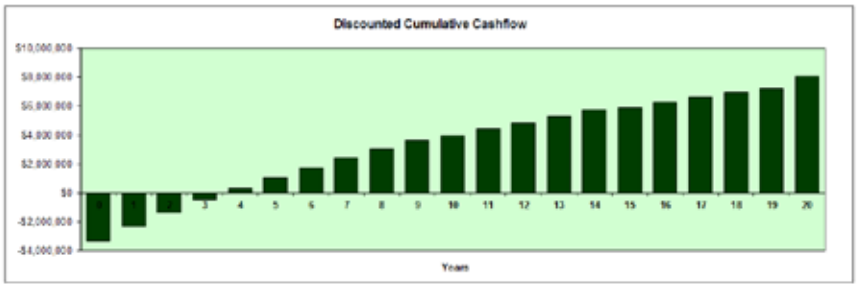
Economic indicators

		per Square Metre
Net present value	$8,017,297	$1.85
Equivalent annual return	$756,776	$1.85
Internal rate of return	31.67%	
Benefit - cost ratio	1.41	
Discount (interest) rate used	7.00%	

Cost structure summary

	Annual cost	Cost per Sq M
Growing Costs	$367,500	$0.8990
Farm Operating	$109,900	$0.2688
Farm Labour	$328,250	$0.8030
Delivery	$389,380	$0.9525
Installation	$348,285	$0.8520
Farm Capital	$309,455	$0.7570
Replacement capital indicator	$47,415	$0.1160

(excludes startup purchases)



Net Present Value (NPV) and Equivalent Annual Return

The net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over the life of the project. If the NPV is positive the project is likely to be profitable. When the NPV is converted to a yearly figure it becomes annualised. In this report the annualised return is called the equivalent annual return. It is a measure of equivalent annual returns generated over the life of the project expressed in today's dollars.

Internal rate of return (IRR)

The discount rate at which the project has a NPV of zero is called the internal rate of return. The IRR represents the maximum rate of interest that could be paid on all capital invested in the project. If all funds were borrowed, and interest charged at the IRR, the borrower would break even, that is, recover the capital invested in the project.

Benefit – Cost Ratio

The benefit – cost ratio is simply a measure of the total flow of benefits over the life of the project as compared to the flow of costs. If the ratio is greater than one the project is deemed acceptable. In other words, the ratio describes the return per dollar invested; e.g. if the b-c ratio is 1.6 then we can say that for every $1.00 invested in the project or enterprise we get a return of $1.60.

Varietal Summary Estimate (per Square Metre)

Variety	Average Price	Total Cost	Profit
Couch	$3.42	$2.73	$0.69
Buffalo	$5.07	$2.73	$2.34
Zoysia	$4.80	$2.73	$2.08
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
Delivery	$1.14	$0.95	$0.19
Installation	$1.16	$0.85	$0.31

Business Benchmarks

Profit as a percentage of turnover	29.00%
Machinery Investment to Income Ratio	0.6
Variable costs as a % of turnover	14.08%
Overhead costs as a % turnover	28.55%
Delivery costs as a % of turnover	14.92%
Installation costs as a % of turnover	13.35%
Turnover per FTE	$565,222
Profit per FTE	$161,016
Return on Capital Employed	22.82%

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7. Additional data entry for the "Complete" Turf Cost of Production Calculator

In addition to the "Lite" Turf Cost of Production calculator that we have worked through this morning there is also a more detailed version known as the "Complete" Turf cost of Production calculator.

The "Complete" Turf Cost of Production calculator offers the following additional capability:

- A more detailed analysis of the machinery costs associated with growing turf where you can break down the fuel and repairs and maintenance costs according to each specific implement
- A more detailed gross margin analysis by variety where you can allocate:
  - Pre planting variable costs
  - Pre harvest variable costs
  - Harvest variable costs
  - Irrigation variable costs by variety
- A more detailed analysis of farm labour

As a result of this more detailed approach the "Complete" Turf Cost of Production calculator also produces a resource summary as an output. This resource summary captures estimates for the following:

- Litres of diesel used annually
- Litres of unleaded fuel used annually
- Litres of oil used annually
- Kilowatt hours of electricity used annually
- Megalitres of water used annually
- Estimated CO_2 equivalent emissions from electricity
- Estimated CO2 equivalent emissions from fuels
- Estimated annual fertiliser usage (kg)
- Estimated annual insecticide usage (L)
- Estimated annual herbicide usage (L)
- Estimated annual fungicide usage (L)

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7.1 Machinery operations associated with growing turf

The following data entry is required to complete the 'Machinery Costs' worksheet within the "Complete" Turf Cost of Production calculator.

Equipment Details	Tractor 1	Tractor 2	Tractor 3	Tractor 4	Tractor 5	Harvester
Annual hours	700	700	500	0	0	1,500
Machine Operation Costs - Assumptions						
Estimated fuel usage (litres per hour)	9	9	20	0	0	25
Price of fuel less rebate ($ per litre)	$1.40	$1.40	$1.40	$1.40	$1.40	$1.40
Repairs & maintenance annual cost	$1,000	$1,000	$1,200	$0	$0	$25,000
Hourly Cost Calculations	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)	($ per Hour)
Fuel and oil (oil is 10% fuel cost)	$13.86	$13.86	$30.80	$0.00	$0.00	$38.50
Repairs & Maintenance	$1.43	$1.43	$2.40	$0.00	$0.00	$16.67
Total Hourly Cost ($ per Hour)	$15.29	$15.29	$33.20	$0.00	$0.00	$55.17

The following machinery cost calculator will assist you in estimating the variable costs associated with machinery operations on your farm. Typically the costs include fuel, oil, repairs and maintenance as they vary with the work load they are asked to complete. Other costs such as depreciation, registrations and insurance are dealt with elsewhere. Calculate the costs of operating a tractor and allocate an implement to match with a tractor. The name and type of implements can be adjusted to suit your operation. Once calculated you will need to enter them into the gross margin templates for each of the species you grow.

Tractor Fuel Calculator	
PTO kW	40
Engine HP reference	67
Power used as % of maximum	80%
Power used	32.00
Fuel Consumption (litres per hour)	10.88

R&M Implements	Harvester	Harrows	Fert Spread	Boom Spray	Org Spread	Small Mower	Med Mower	Large Mower	Vacuum	Agrivator	Slasher	Planter				
Tractor Match		Tractor 2	Tractor 1	Tractor 1	Tractor 2	Tractor 2	Tractor 2	Tractor 3	Tractor 3	Tractor 2	Tractor 1	Tractor 1	Tractor 1	Tractor 1	Tractor 1	Tractor 1
Annual hours		100	100	500	50	500	600	1,000	20	150	100	30	0	0	0	0
Repairs and maintenance annual cost		$1,000	$500	$500	$500	$1,000	$1,600	$4,000	$450	$3,000	$400	$1,000	$0	$0	$0	$0
Repairs & Maintenance cost per hour		$10.00	$5.00	$1.00	$10.00	$2.00	$2.67	$4.00	$22.50	$20.00	$4.00	$33.33	$0.00	$0.00	$0.00	$0.00
Width or coverage of implement	0.60	3.00	15.00	15.00	10.00	3.00	5.00	8.00	3.00	5.00	3.00	2.00	0.00	0.00	0.00	0.00
Travel speed (km/hour)	2.00	4.00	10.00	5.00	10.00	5.00	8.00	8.00	6.00	10.00	10.00	7.00	0.00	0.00	0.00	0.00
Field efficiency	80.00%	70.00%	60.00%	80.00%	75.00%	75.00%	75.00%	75.00%	80.00%	70.00%	90.00%	65.00%	0.00%	0.00%	0.00%	0.00%
Work rate (hectares per hour)	0.10	0.84	9.00	6.00	7.50	1.13	3.00	4.80	1.44	3.50	2.70	0.91	0.00	0.00	0.00	0.00

Area Cost Calculations	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)	($ per Ha)
Fuel & Oil	$401.04	$16.50	$1.54	$2.31	$1.85	$12.32	$4.62	$6.42	$21.39	$3.96	$5.13	$15.23	$0.00	$0.00	$0.00	$0.00
Repairs & Maintenance	$173.61	$13.61	$0.71	$0.40	$1.52	$3.05	$1.37	$1.33	$17.29	$6.12	$2.01	$38.20	$0.00	$0.00	$0.00	$0.00
Total Area Cost ($ per Ha)	$574.65	$30.11	$2.25	$2.71	$3.37	$15.37	$5.99	$7.75	$38.68	$10.08	$7.14	$53.43	$0.00	$0.00	$0.00	$0.00

7.2 Gross Margin analysis by variety

The following table is captured from the 'Machinery Costs' worksheet and can be used when entering the cost in dollars per hectare for each machinery operation in the detailed gross margin analysis by variety.

Machinery Cost Reference

Implement	F.O.R.M $/Ha
Harvester	$574.65
Harrows	$30.11
Fert Spread	$2.25
Boom Spray	$2.71
Org Spread	$3.37
Small Mower	$15.37
Med Mower	$5.99
Large Mower	$7.75
Vacuum	$38.68
Agrivator	$10.08
Slasher	$7.14
Planter	$53.43
0	$0.00
0	$0.00
0	$0.00
0	$0.00
0	$0.00
0	$0.00
0	$0.00
0	$0.00

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Pre-planting variable costs

The following level of detail in the gross margin analysis by variety can be included in the "Complete" version.

Variable Costs - Pre Planting							per SqM	Total Area
Machinery Operations (Fuel, Oil, Repairs & Maintenance) - Preparation Only								
No of years between preperations			5	years				
			Operations			**$ per Ha**		
Contract services for preparation			1		x	$750.00	$0.0126	$3,000.00
Harrows			6		x	$30.11	$0.0030	$722.64
Planting			1		x	$53.43	$0.0009	$213.72
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
			0		x	$0.00	$0.0000	$0.00
Pre-Plant Herbicides								
	Applications		**Litres or Kg / Ha**			**$ / Litre or Kg**		
Herbicide A	2	x	1.80		x	$10.00	$0.0006	$144.00
Herbicide B	1	x	1.25		x	$12.00	$0.0003	$60.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
Soil Preparation Treatments								
	Applications		**Litres or Kg / Ha**			**$ / Litre or Kg**		
Lime	1	x	2,500.00		x	$0.04	$0.0017	$400.00
Manure	1	x	8,000.00		x	$0.05	$0.0067	$1,600.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
	0	x	0.00		x	$0.00	$0.0000	$0.00
Planting Materials								
			Kg / Ha			**$ / Kg**		
Seed			30		x	$3.00	$0.0015	$360.00
			SqM / Ha			**$ / SqM**		
Stolons			0		x	$0.00	$0.0000	$0.00
Total Preparation Costs							$0.03	$6,500.36

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Pre-harvest variable costs

Variable Costs - Pre Harvest

Machinery Operations (Annual)

	Operations		$ per Ha
Mowing	40	x	$7.75
Aerating	2	x	$10.08
Fertiliser applications	3	x	$2.25
Spraying	3	x	$2.71
Rolling	1	x	$8.00

Fertiliser

	Applications		Kg / Ha		$ / Kg
Fertiliser blend	3	x	500	x	$1.00
Trace	0	x	0	x	$0.00
Magnesium	1	x	10	x	$3.00
Manure	1	x	20000	x	$0.05

Herbicide

	Sprays		Litres / Ha		$ / Litre
Herbicide A	2	x	1.00	x	$400.00
Herbicide B	2	x	2.00	x	$50.00
Herbicide C	2	x	1.50	x	$30.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00

Insecticide

	Sprays		Litres / Ha		$ / Litre
Insecticide A	2	x	2.00	x	$60.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00

Fungicide

	Sprays / App		L or Kg / Ha		$ / L or Kg
Fungicide A	2	x	1.50	x	$30.00
	0	x	0.00	x	$0.00
	0	x	0.00	x	$0.00

Growth Regulant

	Sprays		Litres / Ha		$ / Litre
Growth regulant	6	x	2.00	x	$265.00

Other

	$ per Ha
	$0.00
	$0.00
	$0.00

Irrigation

Water	15	ML per Ha	x	$35.00	per ML
Casual labour	0	Hours per Ha	x	$0.00	per Hour

Total Pre Harvest Costs

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Harvest variable costs

Variable Costs - Harvest					
Pre-harvest Spray					
	Sprays		**Litres / Ha**		**$ / Litre**
Chemical A	1	x	2.00	x	$225.00
Turf Harvesting					
			Operations		**$ per Ha**
Final mow before harvest			1	x	$7.75
Vacuum			1	x	$38.68
Scarify			1	x	$10.08
Turf harvesting (calculated in machinery costs)			1.2	x	$574.65
Total Harvest Costs					

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Gross margin sensitivity analysis

The following table within the tool demonstrates the sensitivity of the gross margin that can be generated from a variety based on a change in expected price or yield.

Sensitivity Analysis

Expected Price	Expected Yield per Ha						
	28,577	31,752	35,280	39,200	43,120	47,432	52,175
$3.50	$42,638	$53,752	$66,100	$79,820	$93,540	$108,632	$125,233
$3.75	$49,783	$61,690	$74,920	$89,620	$104,320	$120,490	$138,277
$4.00	$56,927	$69,628	$83,740	$99,420	$115,100	$132,348	$151,320
$4.29	$65,196	$78,816	$93,949	$110,763	$127,577	$146,073	$166,419
$4.50	$71,215	$85,504	$101,380	$119,020	$136,660	$156,064	$177,408
$4.75	$78,359	$93,442	$110,200	$128,820	$147,440	$167,922	$190,452
$5.00	$85,504	$101,380	$119,020	$138,620	$158,220	$179,780	$203,496

7.3 Farm Labour data entry in the "Complete" tool

In the "Complete" tool you will find the following worksheet for entering the assumptions on farm labour.

Labour Requirements

On-costs	
Workcover	5.00%
Superannuation contribution	9.25%
Leave loading (percent of 4 weeks wages)	15.00%
Training	1.00%

If using farm employed labour for delivery and installation operations please ensure that you reconcile all labour across the three sections of the business. Avoid double counting staff.

Casual Employees	Hourly Rate	Annual Hours	Rate + On-costs	Annual Cost
Casual worker 1	$0.00	0	$0.00	$0
Casual worker 2	$0.00	0	$0.00	$0
Casual worker 3	$0.00	0	$0.00	$0
Casual worker 4	$0.00	0	$0.00	$0
Casual worker 5	$0.00	0	$0.00	$0
Casual worker 6	$0.00	0	$0.00	$0
Casual worker 7	$0.00	0	$0.00	$0
Casual worker 8	$0.00	0	$0.00	$0
Casual worker 9	$0.00	0	$0.00	$0
Casual worker 10	$0.00	0	$0.00	$0

Permanent and Part-time Employees	% Full Time Employee	Weekly Salary	Salary + On-costs	Annual Cost
Employee 1	1.0	$1,200	$1,563	$81,276
Employee 2	1.0	$1,000	$1,303	$67,730
Employee 3	1.0	$1,200	$1,563	$81,276
Employee 4	0.5	$900	$1,172	$30,479
Employee 5	0.0	$0	$0	$0
Employee 6	0.0	$0	$0	$0
Employee 7	0.0	$0	$0	$0
Employee 8	0.0	$0	$0	$0
Employee 9	0.0	$0	$0	$0
Employee 10	0.0	$0	$0	$0

	% Full Time Employee	Weekly Drawings	Annual Cost
Owner / Operator Averge Weekly Drawings	1.2	$2,000	$135,460

Total Labour Cost	$396,221
Labour Cost per SqM	$0.97

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8. Summary of Outputs from the "Complete" Turf Cost of Production Calculator

The following summary outputs are generated from the "Complete" Cost of Production Calculator.

Summary Statistics

Output summary

Annual production (square metres)	468,800
Total annual gross revenue	$2,589,368
Total annual production cost	$2,036,203
Average cost per sq m	$4.98
Average revenue per sq m	$6.33
Total overhead costs per sq m	$2.00
Total hectares of turf	60.00

Economic Indicators

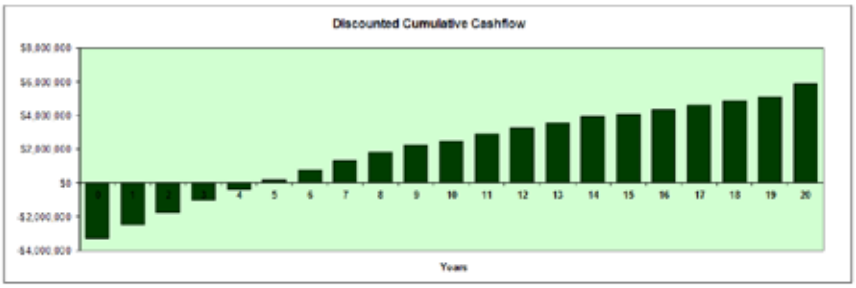
		per Square Metre
Net present value	$5,860,122	$1.36
Equivalent annual return	$653,154	$1.36
Internal rate of return	26.21%	
Benefit - cost ratio	1.27	
Discount (interest) rate used	7.00%	

Cost structure summary

	Annual cost	Cost per Sq M
Growing Costs	$424,596	$1.0386
Farm Operating	$109,900	$0.2688
Farm Labour	$396,221	$0.9692
Delivery	$389,380	$0.9525
Installation	$406,662	$0.9947
Farm Capital	$309,455	$0.7570
Replacement capital indicator	$47,415	$0.1160 (excludes startup purchases)

Resource Summary

					Kg or L
Diesel	35,006	litres	Fertiliser		965,600
Unleaded	1,000	litres	Insecticide		360
Oil (10%)	3,501	litres	Herbicide		634
Electricity	100,000	kWh	Fungicide		190
Water	900	megalitres			
Electricity - CO2	88.00	tonnes			
Fuels - CO2	96.83	tonnes			



Net Present Value (NPV) and Equivalent Annual Return

The net present value (NPV) is the difference between the present value of cash inflows and the present value of cash outflows over the life of the project. If the NPV is positive the project is likely to be profitable. When the NPV is converted to a yearly figure it becomes annualised. In this report the annualised return is called the equivalent annual return. It is a measure of equivalent annual returns generated over the life of the project expressed in today's dollars.

Internal rate of return (IRR)

The discount rate at which the project has a NPV of zero is called the internal rate of return. The IRR represents the maximum rate of interest that could be paid on all capital invested in the project. If all funds were borrowed, and interest charged at the IRR, the borrower would break even, that is, recover the capital invested in the project.

Benefit – Cost Ratio

The benefit – cost ratio is simply a measure of the total flow of benefits over the life of the project as compared to the flow of costs. If the ratio is greater than one the project is deemed acceptable. In other words, the ratio describes the return per dollar invested, e.g. if the b-c ratio is 1.6 then we can say that for every $1.00 invested in the project or enterprise we get a return of $1.60.

Varietal Summary Estimate (per Square Metre)

Variety	Average Price	Total Cost	Profit
Couch	$3.42	$2.80	$0.62
Buffalo	$5.07	$3.33	$1.74
Zoysia	$4.29	$3.46	$0.83
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
	$0.00	$0.00	$0.00
Delivery	$1.14	$0.95	$0.19
Installation	$1.16	$0.99	$0.17

Business Benchmarks

Profit as a percentage of turnover	21.36%
Machinery Investment to Income Ratio	0.6
Variable costs as a % of turnover	16.40%
Overhead costs as a % turnover	31.50%
Delivery costs as a % turnover	15.04%
Installation costs as a % turnover	15.70%
Turnover per FTE	$560,927
Profit per FTE	$117,692
Return on Capital Employed	16.68%

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9. Benchmarking report

The Turf Cost of Production Calculator generates the following benchmark report on key business indicators.

Benchmark Report

Send Benchmark Data

Production Benchmarks

By Variety	Couch	Buffalo	Zoysia	0	0	0
Weighted average income per square metre	$3.42	$5.07	$4.80	$0.00	$0.00	$0.00
Weighted average variable costs per square metre	$0.90	$0.90	$0.90	$0.00	$0.00	$0.00
Weighted average gross margin per square metre	$2.52	$4.17	$3.91	$0.00	$0.00	$0.00

Across All Varieties	
Average income per square metre grown	$4.08
Average variable costs per square metre grown	$0.90
Average gross margin per square metre	$3.18

Overheads Per Square Metre	
Labour cost per square metre	$0.80
General operating overhead costs per square metre	$0.27
Capital costs per square metre (depreciation and finance costs)	$0.76
Total overhead costs per square metre	$1.83

Net profit per square metre	$1.36

Whole of Business Benchmarks

Profit as a percentage of turnover	29.00%
Machinery investment to income ratio	0.6
Variable costs as a percentage of turnover	14.08%
Overhead costs as a percentage of turnover	28.65%
Delivery costs as a percentage of turnover	14.92%
Installation costs as a percentage of turnover	13.35%
Turnover per FTE	$555,222
Profit per FTE	$161,016
Return on capital employed	22.82%
Benefit-cost ratio	1.41
Internal rate of return	31.57%

Segmentation Information

State		QLD	
Growing Region		Sunshine Coast	
Business Ownership		Family	
Annual Rainfall		800.0	mm
% Land Owned		80.00%	
% Land Leased		20.00%	
Farm Size		60.00	hectares
Market Sectors			
	Retail	25%	
	Trade	25%	
	Re-seller	25%	
	Wholesale	25%	
Number of FTE's			
	Family	1.2	
	External	3.5	
Land and building lease expenditure as a % of income		0.23%	
% harvested turf delivered		95.00%	
% harvested turf installed		40.00%	

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Reflection

What top 5 things have I learned from this workshop?

What am I going to start doing?

What am I going to stop doing?

What am I going to continue doing?

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Turf Australia
Grow Green

Turf Cost of Production Calculator

April 2014

HAL
Horticulture Australia

1. Welcome and introductions

- Everyone to introduce themselves and tell us what they love about Turf
- Aims and expectations from today's workshop
- Ground rules – confidentiality, phones, working above the line, respecting others in the group
- Ask lots of questions

2. Pre and Post workshop evaluation

- Make sure that we are doing our job
- Allow for continuous innovation and improvement
- Increase clarity around key messages
- Please take some time to complete your pre workshop evaluation form

What is Cost of Production?

What costs are included in the calculation:

- Variable costs
- Irrigation costs
- PBR and industry levies
- Farm labour
- Farm overheads
- Depreciation
- Financing cost
- Costs associated with delivery
- Costs associated with installation

Why is it important to understand your cost of production?

- Please list some of the reasons why you think it is important in your workbook

Understanding your cost of production can assist with

- Building a profitable and sustainable turf business
- Ensuring a profit margin
- Pricing different varieties
- Pricing delivery and installation
- Identifying the biggest cost drivers in your business
- Developing a profitable business model

Other business indicators

- Cost of production is one business indicator
- What are some other business indicators that are important to your turf business?

Other important business indicators include

- Gross margin per hectare
- Average price received per square metre
- Net profit
- Business turnover
- Net profit as a percentage of turnover
- Return on capital or return on investment
- Benefit : Cost ratio
- Machinery investment to income ratio
- Customer satisfaction
- Environmental indicators
- Annual business growth
- Level of employee turnover
- Level of business innovation

3. Gross Margin Analysis

What is a gross margin?

Gross margin

- Profit margin before business overheads are taken into consideration
- Gross margin = selling price – variable costs
- The turf cost of production calculator calculates a gross margin for each variety of turf that you produce
- It does this by considering:
  - Yield assumptions by variety
  - Price assumptions by variety
  - Variable growing costs

Gross margin analysis

- Production estimates
  2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm
- Variable cost estimates
  2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm
- Yield and price assumptions by variety
  2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

Password to access the tool is tq2012

HAL Horticulture Australia

Turf Australia Grow Green

Farm Production Summary

The Farm Production Summary reports:

- Gross margin per square metre by variety

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

Case study data entry – gross margin level

- Please take some time to enter the case study data into each of the data entry cells that relate to enterprise gross margin

1. Farm production parametres
2. Variable cost estimates
3. Yield and price assumptions by variety

4. Business overheads

- What is a business overhead?

Examples of business overheads

- Annual council rates
- Accounting expenses
- Utilities such as electricity and telephone
- Permanent labour
- Financing costs
- Depreciation
- Building leases
- Membership fees

Farm labour

- In Turf CoP “Lite” farm labour is captured as follows:

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

- Tips:
  - Isolate any labour costs associated with delivery or installation
  - Remember to include any owner/operator drawings

Farm overhead expenses

- General overhead expenses are captured in the following worksheet

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

Capital related overheads

- Capital related costs which are essential to include in a cost of production analysis include:

1. Depreciation

2. The finance or opportunity cost associated with holding
    - Plant and equipment
    - Buildings and infrastructure
    - Land

How the Turf CoP calculator captures these costs

- The Turf Cost of Production Calculator allocates a cost for all items of capital expenditure based on:
  - their acquisition cost
  - useful life
  - likely salvage value

- The tool considers your turf business as a 20 year project and allocates capital related expenditure according to when it will be incurred across this 20 year time frame.

- The tool then uses a discounted cash flow analysis to calculate the capital related costs for inclusion in your turf cost of production.

Capital costs

- The following worksheet will need to be completed to allow an appropriate capital cost to be calculated for your turf business

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

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Case study data entry – business overheads

- Please take some time to enter the case study data into each of the data entry cells that relate to business overheads

1. Farm labour
2. Farm overhead expenses
3. Capital costs

5. Turf delivery

The Turf Delivery analysis considers:

- Contract delivery of turf
- Farm delivery of turf
- Fuel, oil, repairs, and maintenance (FORM) costs for turf delivery equipment
- Delivery labour
- Capital investments required for delivery
- Other delivery related expenses

Turf delivery data entry

The data entry for turf delivery costs can be broken down into six main parts:

1. Contract cost associated with delivery
2. Farmer owned delivery of turf
3. Machinery operations associated with delivery
4. Turf delivery labour
5. Capital expenditure required for turf delivery
6. Other operating expenses for delivery

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

6. Reflection on morning session

- Any reflections on what we covered this morning that you would like to share or discuss?
  - Observations
  - Things you have learnt
  - Any new questions that you have?

7. Turf Installation

The Turf Installation analysis considers:

- Contract installation of turf
- Farm based installation of turf
- Preparation cost calculator for installations requiring preparation
- Fuel, oil, repairs, and maintenance (FORM) costs for turf installation equipment
- Installation labour
- Capital investments required for installation
- Other installation related expenses

Turf installation data entry

The data entry for turf delivery costs can be broken down into seven main parts:

1. Contract cost associated with installing turf
2. Farm based installation
3. Cost calculator for installation preparations
4. Turf installation labour
5. Machinery operations associated with installation
6. Capital expenditure required for turf installation
7. Other operating expenses for delivery

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

8. Summary of outputs

The outputs from the Turf Cost of Production calculator are provided in the 'Summary' worksheet.

Key outputs to note include:

- Average cost per square metre
- Growing costs per square metre
- Overhead costs per square metre
- Internal rate of return
- Profit as a percentage of turnover
- Machinery investment to income ratio

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

Benchmark report

A benchmark report is also available. This report captures:

- Weighted average income per square metre by variety
- Variable costs per square metre
- Weighted average gross margin per square metre by variety
- Overhead costs per square metre
- Variable costs as a percentage of turnover
- Overhead costs as a percentage of turnover
- Profit per FTE
- Return on capital employed

2-3 Turf Cost of Production Calculator Lite - 60Ha Case Study.xlsm

We encourage the submission of benchmarking data

- “Send Benchmark Data” button
- Submits data to Rural Directions Pty Ltd for storage
- Confidentiality maintained
- May allow the development of a benchmarking report on the turf industry in the future

9. The “Complete” Turf Cost of Production calculator

The “Complete” Turf Cost of Production calculator offers the following additional capability:

- A more detailed analysis of the machinery costs associated with growing turf
- A more detailed gross margin analysis by variety where you can allocate:
  - Pre planting variable costs
  - Pre harvest variable costs
  - Harvest variable costs
  - Irrigation variable costs by variety
- A more detailed analysis of farm labour

Resource summary

The “Complete” Turf CoP tool also provides a resource summary as an output

- Litres of diesel used annually
- Litres of unleaded fuel used annually
- Litres of oil used annually
- Kilowatt hours of electricity used annually
- Megalitres of water used annually
- Estimated CO_2 equivalent emissions from electricity
- Estimated CO2 equivalent emissions from fuels
- Estimated annual fertiliser usage (kg)
- Estimated annual insecticide usage (L)
- Estimated annual herbicide usage (L)
- Estimated annual fungicide usage (L)

Machinery operations

In the “Complete” version, variable costs associated with machinery operations are calculated using:

- Annual operating hours for tractors
- Estimated fuel usage for each tractor in litres per hour
- Fuel price in $ per litre
- Annual repairs and maintenance for each item of machinery
- Implement widths
- Travel speeds
- Field efficiency

2-4 Turf Cost of Production Calculator Complete - 60Ha Case Study.xlsm

Variable costs

In the “Complete” version variable costs for each variety can be entered for pre planting, post planting, and harvest. These are based on:

- Individual herbicide applications (rates and prices)
- Soil preparation treatments
- Planting materials
- Individual fertiliser applications (rates and prices)
- Individual insecticide and fungicide applications (rates & prices)
- Growth regulant applications
- Harvest applications and operations

2-4 Turf Cost of Production Calculator Complete - 60Ha Case Study.xlsm

Farm labour

In the “Complete” version farm labour can be broken down to the individual employee level

2-4 Turf Cost of Production Calculator Complete - 60Ha Case Study.xlsm

Summary of outputs from the “Complete” version

- The “Complete” version includes a resource summary section as an output

2-4 Turf Cost of Production Calculator Complete - 60Ha Case Study.xlsm

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10. Reflection

- What top 5 things have I learned from this workshop?
- What am I going to start doing?
- What am I going to stop doing?
- What am I going to continue doing?

11. Post workshop evaluation

- Please take some time to complete a post workshop evaluation form.

12. Next steps

- We will follow-up each of you up with a phone call within the next two weeks to:
  - Discuss progress with calculating your own Turf Cost of Production
  - Answer any new questions or queries that you may have
- We will also follow this up with a second phone call
- Any questions?

Workshop close

Many thanks for your attendance and participation!

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Staying in the Green by using the Turf Industry COP Calculator

Pre Attendance Information

1. **I have a sound understanding of my Cost of Production for different parts of my turf business**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2. **I believe that increased knowledge about Cost of Production will lead to a more resilient and profitable Turf Industry**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. **My estimate of the Cost of Production for different parts of my business are:**

   $ _____ per square metre of turf grown

   $ _____ per square metre of turf delivered

   $ _____ per square metre of turf of turf installed

   OR

   I have no idea of the true Cost of Production for the various segments of my business

   ☐ **Please Tick**

4. **Other business indicators - Cost of production is one business indicator that is important to your business. What are some other business indicators that are important to your turf business?**

   1. **……**
   2. **……**
   3. **……**
   4. **……**
   5. **……**
   6. **……**
   7. **……**
   8. **……**
   9. **……**
   10. **……**

Staying in the Green by using the Turf Industry COP Calculator

Post Attendance Information

1. **I have a better understanding of the process for calculating a Cost of Production for different parts of my turf business**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

2. **I am confident that I will be able to complete the Turf COP Calculator at home and calculate a Cost of Production for different parts of my turf business**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

3. **I will need some additional support if I am to complete the Turf COP Calculator at home**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

4. **I believe that increased knowledge about Cost of Production will lead to a more resilient and profitable Turf Industry**

Strongly Disagree	Disagree	Undecided	Agree	Strongly Agree

5. **My estimate of the Cost of Production for different parts of my business are:**

$ _____ per square metre of turf grown

$ _____ per square metre of turf delivered

$ _____ per square metre of turf of turf installed

OR

I still have no idea of the true Cost of Production for the various segments of my business

☐ **Please Tick**

NOT Sure about the question above for the Post Evaluation Process??

6. **What are some other business indicators that are important to your turf business?**

   1. ……
   2. ……
   3. ……
   4. ……
   5. ……
   6. ……
   7. ……
   8. ……
   9. ……
   10. ……

7. **Any general comments regarding today's workshop**

_____

_____

_____

_____

Turf Australia
Grow Green

Turf Cost of Production Calculator

60ha Case Study
Data Entry Sheets

HAL
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TURF NSW
TURFGROWERS ASSOCIATION OF NSW INC.

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Please read first before gathering your data - *thank you.*

Introduction

Staying in the Green aims to build profitable turf businesses through understanding cost of production

Two versions of the Turf Cost of Production Calculator have been developed to support Staying in the Green. These two versions are as follows.

1. Turf Cost of Production 'Lite'
    a. An excellent 'entry level' tool
    b. Involves streamlined data entry for machinery, gross margin by variety, and farm labour
3. Turf Cost of Production 'Complete'
    a. The 'Complete' version has a higher requirement for data entry in comparison to the 'Lite' version
    b. Involves for a more detailed analysis of machinery costs, gross margin by variety, and farm labour
    c. Generates a Farm Resource Summary on fuel and energy use

These data entry sheets capture the required data entry for both versions of the Turf Cost Calculator.

- *Pages 3 to 21 capture the required data for the 'Lite' version*
- *Pages 22 to 40 capture the additional data required for the 'Complete' version*

Data collection – Turf Cost of Production Calculator

- A few guiding principles to assist data collection:
- Data can be collected and entered on either a financial year or a production year, depending which is easier for your business. We would recommend entering data on a financial year basis as it is likely to be easy to pull some of the information required from your annual financial tax returns.
- All figures collected are GST exclusive.
- The **focus is on ensuring accuracy** of data and that you are capturing all associated costs involved to operate your turf business. If in doubt about your data collection please review these instructions carefully. If further support is required, please contact Rural Directions Pty Ltd on 08 8841 4500.
- Only provide data that relates to your turf business.
- All financial data can be gathered from your tax records (Profit and Loss, Assets and Liabilities), book keeping systems, government production returns, and/or loan statements.
- **Keep your own records**. Please use the Comments / 'My data' column to make notes on this instruction sheet (or in your bookkeeping system) of what income and expenses were allocated to which section; this will help with data collection and streamline the process.

For data collection assistance – call 08 8841 4500.

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Lite Version

Data entry sheets for the Lite Turf Cost of Production Calculator

Financial Year:	2012/13

Enterprise Description and Gross Margin Analysis		
Data	**Explanation**	**Comments / "My data"**
1. State & Region	In which state is your turf farm located?	Queensland
	Which growing region is your farm located?	Sunshine Coast
	Is your business family owned / or corporate?	Family
	Annual rainfall	800mm
	% land owned	80%
	% land leased or sharefarmed	20%
2. Turf varieties	*Which varieties of turf do you grow in your business? List each variety individually (up to 10 varieties)*	*Area planted in hectares for each variety*
	Couch	20
	Buffalo	30
	Zoysia	10
	TIP: The tool can handle up to 10 different varieties of turf. Record the varieties according to how they are grown and marketed. Ie, if you have two different strains of Kikuya for example that are grown and marketed in the same manner they can simply be listed as the variety of turf.	

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Lite Version

3. Variable cost estimates	*Variable costs*	*Record the annual cost to your turf business ($)*
	Fuel and oil (net of rebate and any fuel and oil cost associated with delivery and installation)	$90.000
	Machinery R&M (net of rebate and any fuel and oil cost associated with delivery and installation)	$138,000
	Fertiliser	$35,000
	Chemical (include all herbicides, fungicides, and insecticides)	$48,500
	Soil conditioners	$5,500
	Seed or stolon costs	$25,000
	Irrigation (water cost and pumping cost)	$25,500
	TIP: Only record the costs which are relevant to your turf business. If you run another horticultural enterprise in addition to your turf business, allocate these costs on either a hectare basis or a turnover basis to each enterprise and only record the annual costs here which can be attributed to your turf business.	

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Lite Version

4. Gross Margin Analysis by variety	***Variety 1***	*Record Variety Name*
		Couch
Yield data (for this variety)	No. of cuts per year	1.2
	Retention rate for regrowth (rhizomes) (%)	0%
	Scrap rate (%)	1.00%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$5	2%
	Trade (ie landscapers)	$4	2%
	Re-seller (ie landscaping yards)	$3	2%
	Wholesale (to other farms)	$2	2%
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

5. Gross Margin Analysis by variety	***Variety 2***	*Record Variety Name*
		Buffalo
Yield data (for this variety)	No. of cuts per year	0.5
	Retention rate for regrowth (rhizomes) (%)	10%
	Scrap rate (%)	2%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$7	7.5%
	Trade (ie landscapers)	$6	7.5%
	Re-seller (ie landscaping yards)	$5	7.5%
	Wholesale (to other farms)	$4	7.5%
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

6. Gross Margin Analysis by variety	***Variety 3***	*Record Variety Name*
		Zoysia
Yield data (for this variety)	No. of cuts per year	0.4
	Retention rate for regrowth (rhizomes) (%)	0%
	Scrap rate (%)	2%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$6.00	3%
	Trade (ie landscapers)	$5.25	3%
	Re-seller (ie landscaping yards)	$4.50	3%
	Wholesale (to other farms)	$4.00	
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

7. Gross Margin Analysis by variety	***Variety 4***	*Record Variety Name*
Yield data (for this variety)	No. of cuts per year	
	Retention rate for regrowth (rhizomes) (%)	
	Scrap rate (%)	
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	
	Trade (ie landscapers)	
	Re-seller (ie landscaping yards)	
	Wholesale (to other farms)	

Average pricing (for this variety)	*Market Sector*	*Average price received ($/square m)*	*PBR % cost (%)*
	Retail (direct to customer)		
	Trade (ie landscapers)		
	Re-seller (ie landscaping yards)		
	Wholesale (to other farms)		
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy		
	Other (eg state) levy		

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Lite Version

8. Gross Margin Analysis by variety	***Variety 5***	*Record Variety Name*
Yield data (for this variety)	No. of cuts per year	
	Retention rate for regrowth (rhizomes) (%)	
	Scrap rate (%)	
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	
	Trade (ie landscapers)	
	Re-seller (ie landscaping yards)	
	Wholesale (to other farms)	

Average pricing (for this variety)	*Market Sector*	*Average price received ($/square m)*	*PBR % cost (%)*
	Retail (direct to customer)		
	Trade (ie landscapers)		
	Re-seller (ie landscaping yards)		
	Wholesale (to other farms)		
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy		
	Other (eg state) levy		

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Lite Version

Business Overheads			
Data	**Explanation**	**Comments / "My data"**	
9. Farm Labour	*Type of labour*	*$ per annum (includes super & on-costs)*	*Estimated number of Full Time Equivalents (FTE's)*
	Permanent or Part Time	$228,250	3.5
	Casual labour	$0	
	Owner/operator drawings	$100,000	1.2
	TIP: If using farm employed labour for delivery and installation operations please ensure that you reconcile all labour across the three sections of the business to avoid double counting staff. Labour for delivery and installation are captured separately.		
10. Farm overheads	*Overhead expense*	*Litres per annum*	*$ per litre*
	Diesel (vehicles)	2,000	$1.10
	Unleaded (vehicles)	1,000	$1.50
	Engine oil	Calculated as 10% fuel	$8.00
			$ per annum
	Repairs & Maintenance (vehicles)		$12,000
	TIP: The diesel, unleaded fuel, and repairs and maintenance costs recorded in this section are those in addition to the machinery Fuel, Oil, Repairs and Maintenance (FORM) costs recorded as variable costs in Section 3 that relate to farm machinery. This allows you to capture any overhead related fuel costs and overhead related repairs and maintenance costs. These could be for vehicles that you might not be able to receive fuel tax credits for.		
		Number of kilowatt hours (kwh) per annum	*Cost in $/kwh*
	Electricity	100,000	$0.20
	Overhead expense		*$ per annum*
	Accounting and legal		$8,000
	Administrative expenses		$3,000
	Phone (domestic & mobile)		$5,000
	Business travel		$500

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Lite Version

Farm overheads (continued)	*Vehicle expenses*	*Number of Vehicles*	*Average cost per vehicle*
	Vehicle registrations	3	$600
	Vehicle insurance	Same as cell above	$500
	Overhead expense		*$ per annum*
	Farm insurance		$10,000
	Council rates		$6,000
	Chemicals (cleaning)		
	Equipment leases		$20,000
	Land and building leases		$6,000
	Water charges		$1,000
	Licences and permits		$500
	Fees and charges (Government)		
	Audits		
	Consultants		$1,500
	Training		$1,500
	Membership fees		$500
	Marketing and advertising expenses		$5,000
	Any other overhead expenses		*$ per annum*

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11. Farm Capital Expenditure					
Buildings and Infrastructure					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (0 to 20)*	*Item Life (0 to 20)*	*Salvage Value (%)*
Land	1	$1,500,000	0	20	100%
Office	1	$25,000	0	20	60%
Shed	1	$100,000	0	20	60%
Land prep	1	$100,000	0	20	0%
Electricity connection	1	$40,000	0	20	0%
Office equipment	1	$10,000	0	5	10%
Fencing	1	$20,000	0	20	20%

TIPS: Relevant for Buildings & Infrastructure, Vehicles & Machinery, Farm Irrigation, and other

Record each item of capital expenditure involved to run your turf business and list their acquisition value as the 'Item Cost'.

If you have multiple capital items that are very similar in nature (ie 3 x 60hp tractors) they can be entered as one line item and '3' entered as the number of items.

The capital expenditure cost analysis has been established on an assumption that the project runs for 20 years. As a result please enter a number between 0 and 20 for 'Purchase Year' rather than an actual calendar year number. Year 0 represents the start-up year and so the majority of capital items are likely to be purchased in Year 0.

Enter an expected life for each item of capital of between 0 and 20 years. This may be the time at which you trade in an item on a replacement or at which time the item is no longer of value to the enterprise.

A salvage value can be entered for each item of capital. The salvage value is entered as a percentage of the acquisition value at the end of its useful life – ie 30% or 50%. Salvage values of between 0% and 100% will be most common and can be entered. Land can be listed as a capital item with a salvage value of 100% at the end of its useful life if required.

Based on the information provided in this table the Turf Cost Calculator generates an equivalent annual farm capital cost which reflects the finance cost and depreciation cost associated with the various items of farm capital.

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Lite Version

Vehicles and Machinery					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Utilities	1	$50,000	0	5	40%
Slasher	1	$10,000	0	10	20%
Spray Rig	1	$20,000	0	10	20%
Tractor 70HP	4	$60,000	0	10	30%
Large Mower	1	$48,000	0	10	40%
Medium Mower	1	$30,000	0	10	20%
Small Mower	1	$10,000	0	15	30%
Power Harrows	1	$19,456	0	10	20%
Fertiliser Spreader	1	$3,545	0	12	20%
Manure Spreader	1	$26,225	0	15	30%
Vacuum	1	$30,000	0	12	20%
Agrivator	1	$31,636	0	12	30%
Harvester	1	$270,000	0	15	30%
Planter	1	$30,000	0	10	20%
Bobcat	1	$20,000	0	10	30%
Fertiliser dump	1	$2,000	0	20	20%
Tractor medium	2	$80,000	0	10	40%
Tractor large	1	$90,000	0	12	40%

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Farm Irrigation					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Pumps	1	$1,000	0	10	20%
Generator	1	$5,000	0	15	10%
Layflat	1	$5,000	0	10	10%
Irrigators	2	$200,000	0	15	40%
Other Equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Workshop tools and equipment	1	$20,000	0	5	20%
Sundries					
Other					

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Lite Version

Turf Delivery		
Data	**Explanation**	**Comments / "My data"**
12. Contract Delivery of Turf	% of harvested turf delivered by a contractor (%)	80%
	Average contract price for turf delivery ($/sq m)	$1.00
	Average delivery charge to end customer ($/sq m)	$1.20
13. Farmer Owned Turf Delivery	% of harvested turf delivered by the farm (%)	15%
	Average delivery charge to end customer ($/sq m)	$1.20
TIP: Percentage of harvested turf delivered by a contractor and delivered by the farm will not necessarily add to 100% as a result of turf sales which are picked up by the customer on farm.		

14. Machinery Operations for Turf Delivery (FORM)				
Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Delivery Truck	520	20	$1.10	$2,000
Forklift	60	10	$1.10	$1,000
Trailer				
TIP: FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance for the farm equipment involved with delivering turf. If there are items such as trailers for prime-movers, please include them but only fill in the information around annual repairs and maintenance.				

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Lite Version

15. Delivery Labour	*On-costs*		
	Workcover (%)		2%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		0%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1		
	Casual worker 2		
	Casual worker 3		
	Permanent employees	*Full Time Equivalent (FTE) Rating*	*Weekly Salary*
	Employee 1 - Driver	0.5	$1,000
	Employee 2 – Assistant		
	Employee 3		
TIP: Estimates for Full Time Equivalent (FTE) Rating are fine, ie 0.2, 0.4, 0.6, 0.8, 1.0 etc			

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Lite Version

16. Capital Investment for delivery					
Delivery plant and equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Delivery truck	1	$50,000	0	10	20%
Forklift	1	$15,000	0	10	30%
Trailer					

17. Other operating expenses for turf delivery	*Additional expenses for turf delivery*	
	Registrations ($)	$2,500
	Insurance ($)	$1,500
	Clothing and safety equipment ($)	$500
	Ropes and tie downs ($)	$500
	Other ($)	
	Other ($)	
	Other ($)	

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Lite Version

Turf Installation		
Data	**Explanation**	**Comments / "My data"**
18. Contract Installation of Turf	Cost to business for installation of turf by contractor ($/sq m)	$2.00
	% of total harvest installed by a contractor (%)	20%
	Average installation charge to end customer ($/sq m)	$2.40
19. Farmer Based Installation of Turf	Preferred scale for estimations (10m², 50m²,100m²)	100
	% of harvested turf installed by the farm (%)	20%
	Average installation charge to end customer ($/sq m)	$2.40
	Average preparation charge to end customer ($/sq m)	$10.00
TIP: % of harvested turf installed by a contractor and installed by the farm will rarely add to 100% as a result of turf sales which do not require installation.		

20. Preparation costings	*Item*	
	% of installations that require site preparation (%)	10%
	Herbicide ($ / preferred scale area)	$20
	Contract soil leveling ($ / preferred scale area)	$200
	Soil depth required (mm)	100mm
	Cost per cubic metre for soil ($/cubic metre)	$30
	Water retention & fertiliser products	$50
	Disposal costs	$100
	Other preparation costs	$50
TIP: Herbicide cost, contract soil levelling, water retention and fertiliser products, disposal costs, and other preparation costs are all to be based on the area defined as your preferred scale for estimations in Section 18 (this could be per 10m², 50m², 100m² or whatever your preferred scale for estimations is).		

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Lite Version

21. Machinery Operations for Turf Installation (FORM)				
Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Truck	400	20	$1.10	$4,000
Bobcat	800	15	$1.10	$6,000
Trailer	400	0		$500

TIP:
FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance for the farm equipment involved with installing turf.

If there are items such as trailers for prime-movers, please include them but only fill in the information around annual repairs and maintenance.

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Lite Version

22. Installation Labour	*On-costs*		
	Workcover (%)		4%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		2%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1	$25	1,200
	Casual worker 2		
	Casual worker 3		
	Permanent employees	*Full Time Equivalent (FTE) Rating*	*Weekly Salary*
	Employee 1 - Driver	0.6	$1,000
	Employee 2 – Assistant		
	Employee 3		

TIP:
Estimates for Full Time Equivalent (FTE) Rating are fine, ie 0.2, 0.4, 0.6, 0.8, 1.0 etc.

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Lite Version

23. Capital Investment for turf installation					
Installation plant and equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Truck	1	$50,000	0	10	30%
Bobcat	1	$45,000	0	10	30%
Trailer	1	$5,000	0	10	25%

24. Other operating expenses for turf delivery	*Additional expenses for turf installation*	
	Registrations ($)	$2,000
	Insurance ($)	$1,000
	Clothing and safety equipment ($)	$1,000
	Ropes and tie downs ($)	$500
	Bobcat hire ($)	
	Other ($)	
	Other ($)	
	Other ($)	

25. Summary	Discount (interest) rate used (%)	7%
TIP: Best to use an interest rate which represents the average cost of capital for your business.		

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Complete Version

Additional data entry sheets for the 'Complete' Turf Cost of Production Calculator

Machinery Costs in the "Complete" Cost of Production tool				
26. Machinery Operations for growing turf (FORM costs)				
Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Tractor 1	700	9	$1.40	$1,000
Tractor 2	700	9	$1.40	$1,000
Tractor 3	500	20	$1.40	$1,000
Tractor 4				
Tractor 5				
Harvester	1,500	25	$1.40	

TIP:
FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance (FORM) for the farm equipment involved with growing turf. Section 26 captures the information for self propelled items of machinery such as tractors and some turf harvesters.

Please note that FORM costs and items of machinery listed here are not linked to the capital investment table which is established in Section 11. As a result, when listing items of machinery to calculate FORM costs, if you have three 60 horsepower tractors with similar very similar fuel costs and similar repairs and maintenance costs then you can choose to enter these as one tractor. You can then link any implements that generally connect to tractors of this size to this one tractor in the Complete COP tool.

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27. Repairs and Maintenance per pass for implements						
Item of equipment	*Tractor Match (1,2,3,or 4)*	*Annual Hours for this item*	*Annual R&M for this item ($)*	*Implement Width or Coverage (m)*	*Travel speed (km/hour)*	*Field Efficiency (%)*
Harvester				0.60	2	
Harrows	2	100	$1,000	3.00	4	
Fertiliser Spreader	1	100	$500	15.00	10	
Boom Spray	1	500	$500	15.00	5	
Org Spreader	2	50	$500	10.00	10	
Small Mower	2	500	$1,000	3.00	5	
Medium Mower	2	600	$1,600	5.00	8	
Large Mower	3	1,000	$4,000	8.00	8	
Vacuum	3	20	$450	3.00	6	
Agrivator	2	150	$3,000	5.00	10	
Slasher	1	100	$400	3.00	10	
Planter	1	30	$1,000	2.00	7	
Other						
Other						
Other						
Other						
Other						
Other						
Other						
Other						

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Turf Queensland Grow Green

TGA Turf Growers Association of Western Australia Inc.

TURF NSW Turfgrowers Association of NSW Inc.

Turf Australia Grow Green

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Variable costs by variety in the "Complete" Cost of Production tool				
28. Pre Planting Variable Costs – Variety 1				
Gross Margin Analysis by variety	***Variety 1***		*Record Variety Name*	
			Couch	
Planting and Pre-planting Machinery Operations	*Number of years between preparations*		5	
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
	Contract services for preparation		1	
	Harrows		6	
	Planting		1	
Pre-plant Herbicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Herbicide A	2	1.80	$10
	Herbicide B	1	1.25	$12
Pre-plant Soil Preparation	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Lime	1	2,500	$0.04
	Manure	1	8,000	$0.05
Planting Materials	*Item*		*Units/Ha*	*$/unit*
	Seed		30	$3.00
	Stolons			

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29. Pre Harvest Variable Costs – Variety 1				
Pre-Harvest Machinery Operations	*Machinery Operation*		*# Operations*	*Cost per pass (from machinery costs)*
	Mowing		40	
	Aerating		2	
	Fertiliser applications		3	
	Spraying		3	
	Rolling		1	
Pre-Harvest Fertiliser	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Fertiliser blend	3	500	$1.00
	Trace	0	0	$0
	Magnesium	1	10	$3.00
	Manure	1	20,000	$0.05
Pre-Harvest Herbicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Herbicide A	2	1.00	$400
	Herbicide B	2	2.00	$50
	Herbicide C	2	1.50	$30
Pre-Harvest Insecticides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Insecticide A	2	2	$60
Pre-Harvest Fungicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Fungicide A	2	1.5	$30

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Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Growth regulant	6	2	$265
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
		15	$35	
	Casual labour	*Hours per Ha*	*$ per hour*	

30. Harvest Variable Costs – Variety 1				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
	Chemical A	1	2	$225
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*
	Final mow before harvest		1	$7.75
	Vacuum		1	$38.68
	Scarify		1	$10.68

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31. Pre Planting Variable Costs – Variety 2				
Gross Margin Analysis by variety	***Variety 2***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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32. Pre Harvest Variable Costs – Variety 2				
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fungicides				

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Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

33. Harvest Variable Costs – Variety 2				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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34. Pre Planting Variable Costs – Variety 3				
Gross Margin Analysis by variety	***Variety 3***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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35. Pre Harvest Variable Costs – Variety 3				
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest Fungicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

36. Harvest Variable Costs – Variety 3				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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37. Pre Planting Variable Costs – Variety 4				
Gross Margin Analysis by variety	***Variety 4***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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38. Pre Harvest Variable Costs – Variety 4				
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest **Fungicides**	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

39. Harvest Variable Costs – Variety 4				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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40. Pre Planting Variable Costs – Variety 5				
Gross Margin Analysis by variety	***Variety 5***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Planting and Pre-planting Machinery Operations				
Pre-plant Herbicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Planting Materials	*Item*		*Units/Ha*	*$/unit*
	Seed			
	Stolons			

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41. Pre Harvest Variable Costs – Variety 5				
	Machinery Operation		*# Operations*	*Cost per pass from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest Fungicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

42. Harvest Variable Costs – Variety 5				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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Complete Version

Farm Labour in the "Complete" Cost of Production tool			
43. Farm Labour	*On-costs*		
	Workcover (%)		5%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		1%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1		
	Casual worker 2		
	Casual worker 3		
	Casual worker 4		
	Casual worker 5		
	Casual worker 6		
	Casual worker 7		
	Casual worker 8		
	Casual worker 9		
	Casual worker 10		
	Permanent employees	*% Full Time Equivalent (FTE)*	*Weekly Salary*
	Employee 1	1.0	$1,200
	Employee 2	1.0	$1,000
	Employee 3	1.0	$1,200
	Employee 4	0.5	$900
	Employee 5		
	Employee 6		
	Employee 7		
	Employee 8		
	Employee 9		
	Employee 10		

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Complete Version

44. Owner Drawings	Owner/Operator Average Weekly Drawings	*% Full Time Equivalent (FTE)*	*Weekly Drawings*
		1.2	$2,000
TIP: If using farm employed labour for delivery and installation operations please ensure that you reconcile all labour across the three sections of the business to avoid double counting staff.			

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Turf Australia
Grow Green

Turf Cost of Production Calculator

60ha Case Study
Data Entry Sheets

HAL
Horticulture Australia

TGA Turf Growers Association of Western Australia Inc.

Turf Victoria
Grow Green

NSW Local Land Services Greater Sydney

Turf Queensland
Grow Green

TURF NSW

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Please read first before gathering your data - *thank you.*

Introduction

Staying in the Green aims to build profitable turf businesses through understanding cost of production

Two versions of the Turf Cost of Production Calculator have been developed to support Staying in the Green. These two versions are as follows.

1. Turf Cost of Production 'Lite'
    a. An excellent 'entry level' tool
    b. Involves streamlined data entry for machinery, gross margin by variety, and farm labour
3. Turf Cost of Production 'Complete'
    a. The 'Complete' version has a higher requirement for data entry in comparison to the 'Lite' version
    b. Involves for a more detailed analysis of machinery costs, gross margin by variety, and farm labour
    c. Generates a Farm Resource Summary on fuel and energy use

These data entry sheets capture the required data entry for both versions of the Turf Cost Calculator.

- *Pages 3 to 21 capture the required data for the 'Lite' version*
- *Pages 22 to 40 capture the additional data required for the 'Complete' version*

Data collection – Turf Cost of Production Calculator

- A few guiding principles to assist data collection:
- Data can be collected and entered on either a financial year or a production year, depending which is easier for your business. We would recommend entering data on a financial year basis as it is likely to be easy to pull some of the information required from your annual financial tax returns.
- All figures collected are GST exclusive.
- The **focus is on ensuring accuracy** of data and that you are capturing all associated costs involved to operate your turf business. If in doubt about your data collection please review these instructions carefully. If further support is required, please contact Rural Directions Pty Ltd on 08 8841 4500.
- Only provide data that relates to your turf business.
- All financial data can be gathered from your tax records (Profit and Loss, Assets and Liabilities), book keeping systems, government production returns, and/or loan statements.
- **Keep your own records**. Please use the Comments / 'My data' column to make notes on this instruction sheet (or in your bookkeeping system) of what income and expenses were allocated to which section; this will help with data collection and streamline the process.

For data collection assistance – call 08 8841 4500.

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Lite Version

Data entry sheets for the Lite Turf Cost of Production Calculator

Financial Year:	2012/13

Enterprise Description and Gross Margin Analysis		
Data	**Explanation**	**Comments / "My data"**
1. State & Region	In which state is your turf farm located?	Queensland
	Which growing region is your farm located?	Sunshine Coast
	Is your business family owned / or corporate?	Family
	Annual rainfall	800mm
	% land owned	80%
	% land leased or sharefarmed	20%
2. Turf varieties	*Which varieties of turf do you grow in your business? List each variety individually (up to 10 varieties)*	*Area planted in hectares for each variety*
	Couch	20
	Buffalo	30
	Zoysia	10
	TIP: The tool can handle up to 10 different varieties of turf. Record the varieties according to how they are grown and marketed. Ie, if you have two different strains of Kikuya for example that are grown and marketed in the same manner they can simply be listed as the variety of turf.	

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Lite Version

3. Variable cost estimates	*Variable costs*	*Record the annual cost to your turf business ($)*
	Fuel and oil (net of rebate and any fuel and oil cost associated with delivery and installation)	$90,000
	Machinery R&M (net of rebate and any fuel and oil cost associated with delivery and installation)	$138,000
	Fertiliser	$35,000
	Chemical (include all herbicides, fungicides, and insecticides)	$48,500
	Soil conditioners	$5,500
	Seed or stolon costs	$25,000
	Irrigation (water cost and pumping cost)	$25,500
	TIP: Only record the costs which are relevant to your turf business. If you run another horticultural enterprise in addition to your turf business, allocate these costs on either a hectare basis or a turnover basis to each enterprise and only record the annual costs here which can be attributed to your turf business.	

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Lite Version

4. Gross Margin Analysis by variety	***Variety 1***	*Record Variety Name*
		Couch
Yield data (for this variety)	No. of cuts per year	1.2
	Retention rate for regrowth (rhizomes) (%)	0%
	Scrap rate (%)	1.00%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$5.00	2%
	Trade (ie landscapers)	$4.00	2%
	Re-seller (ie landscaping yards)	$3.00	2%
	Wholesale (to other farms)	$2.00	2%
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

5. Gross Margin Analysis by variety	***Variety 2***	*Record Variety Name*
		Buffalo
Yield data (for this variety)	No. of cuts per year	0.5
	Retention rate for regrowth (rhizomes) (%)	10%
	Scrap rate (%)	2%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$7.00	7.5%
	Trade (ie landscapers)	$6.00	7.5%
	Re-seller (ie landscaping yards)	$5.00	7.5%
	Wholesale (to other farms)	$4.00	7.5%
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

6. Gross Margin Analysis by variety	***Variety 3***	*Record Variety Name*
		Zoysia
Yield data (for this variety)	No. of cuts per year	0.4
	Retention rate for regrowth (rhizomes) (%)	0%
	Scrap rate (%)	2%
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	25%
	Trade (ie landscapers)	25%
	Re-seller (ie landscaping yards)	25%
	Wholesale (to other farms)	25%

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)	$6.00	3%
	Trade (ie landscapers)	$5.25	3%
	Re-seller (ie landscaping yards)	$4.50	3%
	Wholesale (to other farms)	$4.00	
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy	$0.015	
	Other (eg state) levy		

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Lite Version

7. Gross Margin Analysis by variety	***Variety 4***	*Record Variety Name*
Yield data (for this variety)	No. of cuts per year	
	Retention rate for regrowth (rhizomes) (%)	
	Scrap rate (%)	
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	
	Trade (ie landscapers)	
	Re-seller (ie landscaping yards)	
	Wholesale (to other farms)	

Average pricing (for this variety)	*Market Sector*	*Average price received ($/square m)*	*PBR % cost (%)*
	Retail (direct to customer)		
	Trade (ie landscapers)		
	Re-seller (ie landscaping yards)		
	Wholesale (to other farms)		
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy		
	Other (eg state) levy		

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Lite Version

8. Gross Margin Analysis by variety	***Variety 5***	*Record Variety Name*
Yield data (for this variety)	No. of cuts per year	
	Retention rate for regrowth (rhizomes) (%)	
	Scrap rate (%)	
Market sectors (for this variety)	*Market Sector Splits*	*Estimated % of production (must sum to 100%)*
	Retail (direct to customer)	
	Trade (ie landscapers)	
	Re-seller (ie landscaping yards)	
	Wholesale (to other farms)	

	Market Sector	*Average price received ($/square m)*	*PBR % cost (%)*
Average pricing (for this variety)	Retail (direct to customer)		
	Trade (ie landscapers)		
	Re-seller (ie landscaping yards)		
	Wholesale (to other farms)		
Levy information (for this variety)	*Levies*	*$ per square metre*	
	National levy		
	Other (eg state) levy		

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Lite Version

Business Overheads			
Data	**Explanation**	**Comments / "My data"**	
9. Farm Labour	*Type of labour*	*$ per annum (includes super & on-costs)*	*Estimated number of Full Time Equivalents (FTE's)*
	Permanent or Part Time	$228,250	3.5
	Casual labour	$0	
	Owner/operator drawings	$100,000	1.2
	TIP: If using farm employed labour for delivery and installation operations please ensure that you reconcile all labour across the three sections of the business to avoid double counting staff. Labour for delivery and installation are captured separately.		
10. Farm overheads	*Overhead expense*	*Litres per annum*	*$ per litre*
	Diesel (vehicles)	2,000	$1.10
	Unleaded (vehicles)	1,000	$1.50
	Engine oil	Calculated as 10% fuel	$8.00
			$ per annum
	Repairs & Maintenance (vehicles)		$12,000
	TIP: The diesel, unleaded fuel, and repairs and maintenance costs recorded in this section are those in addition to the machinery Fuel, Oil, Repairs and Maintenance (FORM) costs recorded as variable costs in Section 3 that relate to farm machinery. This allows you to capture any overhead related fuel costs and overhead related repairs and maintenance costs. These could be for vehicles that you might not be able to receive fuel tax credits for.		
		Number of kilowatt hours (kwh) per annum	*Cost in $/kwh*
	Electricity	100,000	$0.20
	Overhead expense		*$ per annum*
	Accounting and legal		$8,000
	Administrative expenses		$3,000
	Phone (domestic & mobile)		$5,000
	Business travel		$500

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Farm overheads **(continued)**	*Vehicle expenses*	*Number of Vehicles*	*Average cost per vehicle*
	Vehicle registrations	3	$600
	Vehicle insurance	Same as cell above	$500
	Overhead expense		*$ per annum*
	Farm insurance		$10,000
	Council rates		$6,000
	Chemicals (cleaning)		
	Equipment leases		$20,000
	Land and building leases		$6,000
	Water charges		$1,000
	Licences and permits		$500
	Fees and charges (Government)		
	Audits		
	Consultants		$1,500
	Training		$1,500
	Membership fees		$500
	Marketing and advertising expenses		$5,000
	Any other overhead expenses		*$ per annum*

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11. Farm Capital Expenditure					
Buildings and Infrastructure					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (0 to 20)*	*Item Life (0 to 20)*	*Salvage Value (%)*
Land	1	$1,500,000	0	20	100%
Office	1	$25,000	0	20	60%
Shed	1	$100,000	0	20	60%
Land prep	1	$100,000	0	20	0%
Electricity connection	1	$40,000	0	20	0%
Office equipment	1	$10,000	0	5	10%
Fencing	1	$20,000	0	20	20%

TIPS: Relevant for Buildings & Infrastructure, Vehicles & Machinery, Farm Irrigation, and other

Record each item of capital expenditure involved to run your turf business and list their acquisition value as the 'Item Cost'.

If you have multiple capital items that are very similar in nature (ie 3 x 60hp tractors) they can be entered as one line item and '3' entered as the number of items.

The capital expenditure cost analysis has been established on an assumption that the project runs for 20 years. As a result please enter a number between 0 and 20 for 'Purchase Year' rather than an actual calendar year number. Year 0 represents the start-up year and so the majority of capital items are likely to be purchased in Year 0.

Enter an expected life for each item of capital of between 0 and 20 years. This may be the time at which you trade in an item on a replacement or at which time the item is no longer of value to the enterprise.

A salvage value can be entered for each item of capital. The salvage value is entered as a percentage of the acquisition value at the end of its useful life – ie 30% or 50%. Salvage values of between 0% and 100% will be most common and can be entered. Land can be listed as a capital item with a salvage value of 100% at the end of its useful life if required.

Based on the information provided in this table the Turf Cost Calculator generates an equivalent annual farm capital cost which reflects the finance cost and depreciation cost associated with the various items of farm capital.

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Vehicles and Machinery					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Utilities	1	$50,000	0	5	40%
Slasher	1	$10,000	0	10	20%
Spray Rig	1	$20,000	0	10	20%
Tractor 70HP	4	$60,000	0	10	30%
Large Mower	1	$48,000	0	10	40%
Medium Mower	1	$30,000	0	10	20%
Small Mower	1	$10,000	0	15	30%
Power Harrows	1	$19,456	0	10	20%
Fertiliser Spreader	1	$3,545	0	12	20%
Manure Spreader	1	$26,225	0	15	30%
Vacuum	1	$30,000	0	12	20%
Agrivator	1	$31,636	0	12	30%
Harvester	1	$270,000	0	15	30%
Planter	1	$30,000	0	10	20%
Bobcat	1	$20,000	0	10	30%
Fertiliser dump	1	$2,000	0	20	20%
Tractor medium	2	$80,000	0	10	40%
Tractor large	1	$90,000	0	12	40%

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Farm Irrigation					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Pumps	1	$1,000	0	10	20%
Generator	1	$5,000	0	15	10%
Layflat	1	$5,000	0	10	10%
Irrigators	2	$200,000	0	15	40%
Other Equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Workshop tools and equipment	1	$20,000	0	5	20%
Sundries					
Other					

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Turf Delivery		
Data	**Explanation**	**Comments / "My data"**
12. Contract Delivery of Turf	% of harvested turf delivered by a contractor (%)	80%
	Average contract price for turf delivery ($/sq m)	$1.00
	Average delivery charge to end customer ($/sq m)	$1.20
13. Farmer Owned Turf Delivery	% of harvested turf delivered by the farm (%)	15%
	Average delivery charge to end customer ($/sq m)	$1.20

TIP:
Percentage of harvested turf delivered by a contractor and delivered by the farm will not necessarily add to 100% as a result of turf sales which are picked up by the customer on farm.

14. Machinery Operations for Turf Delivery (FORM)

Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Delivery Truck	520	20	$1.10	$2,000
Forklift	60	10	$1.10	$1,000
Trailer				

TIP:
FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance for the farm equipment involved with delivering turf.

If there are items such as trailers for prime-movers, please include them but only fill in the information around annual repairs and maintenance.

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15. Delivery Labour	*On-costs*		
	Workcover (%)		2%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		0%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1		
	Casual worker 2		
	Casual worker 3		
	Permanent employees	*Full Time Equivalent (FTE) Rating*	*Weekly Salary*
	Employee 1 - Driver	0.5	$1,000
	Employee 2 – Assistant		
	Employee 3		
TIP: Estimates for Full Time Equivalent (FTE) Rating are fine, ie 0.2, 0.4, 0.6, 0.8, 1.0 etc			

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16. Capital Investment for delivery					
Delivery plant and equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Delivery truck	1	$50,000	0	10	20%
Forklift	1	$15,000	0	10	30%
Trailer					

17. Other operating expenses for turf delivery	*Additional expenses for turf delivery*	
	Registrations ($)	$2,500
	Insurance ($)	$1,500
	Clothing and safety equipment ($)	$500
	Ropes and tie downs ($)	$500
	Other ($)	
	Other ($)	
	Other ($)	

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Turf Installation		
Data	**Explanation**	**Comments / "My data"**
18. Contract Installation of Turf	Cost to business for installation of turf by contractor ($/sq m)	$2.00
	% of total harvest installed by a contractor (%)	20%
	Average installation charge to end customer ($/sq m)	$2.40
19. Farmer Based Installation of Turf	Preferred scale for estimations (10m², 50m²,100m²)	100
	% of harvested turf installed by the farm (%)	20%
	Average installation charge to end customer ($/sq m)	$2.40
	Average preparation charge to end customer ($/sq m)	$10.00
TIP: % of harvested turf installed by a contractor and installed by the farm will rarely add to 100% as a result of turf sales which do not require installation.		

	Item	
20. Preparation costings	% of installations that require site preparation (%)	10%
	Herbicide ($ / preferred scale area)	$20
	Contract soil leveling ($ / preferred scale area)	$200
	Soil depth required (mm)	100mm
	Cost per cubic metre for soil ($/cubic metre)	$30
	Water retention & fertiliser products	$50
	Disposal costs	$100
	Other preparation costs	$50
TIP: Herbicide cost, contract soil levelling, water retention and fertiliser products, disposal costs, and other preparation costs are all to be based on the area defined as your preferred scale for estimations in Section 18 (this could be per 10m², 50m², 100m² or whatever your preferred scale for estimations is).		

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21. Machinery Operations for Turf Installation (FORM)				
Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Truck	400	20	$1.10	$4,000
Bobcat	800	15	$1.10	$6,000
Trailer	400	0		$500

TIP:
FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance for the farm equipment involved with installing turf.

If there are items such as trailers for prime-movers, please include them but only fill in the information around annual repairs and maintenance.

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22. Installation Labour	*On-costs*		
	Workcover (%)		4%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		2%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1	$25	1,200
	Casual worker 2		
	Casual worker 3		
	Permanent employees	*Full Time Equivalent (FTE) Rating*	*Weekly Salary*
	Employee 1 - Driver	0.6	$1,000
	Employee 2 – Assistant		
	Employee 3		
TIP: Estimates for Full Time Equivalent (FTE) Rating are fine, ie 0.2, 0.4, 0.6, 0.8, 1.0 etc.			

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23. Capital Investment for turf installation					
Installation plant and equipment					
Capital Item	*# items*	*Item Cost ($)*	*Purchase Year (1 to 20)*	*Item Life (1 to 20)*	*Salvage Value (%)*
Truck	1	$50,000	0	10	30%
Bobcat	1	$45,000	0	10	30%
Trailer	1	$5,000	0	10	25%

24. Other operating expenses for turf delivery	*Additional expenses for turf installation*	
	Registrations ($)	$2,000
	Insurance ($)	$1,000
	Clothing and safety equipment ($)	$1,000
	Ropes and tie downs ($)	$500
	Bobcat hire ($)	
	Other ($)	
	Other ($)	
	Other ($)	

25. Summary	Discount (interest) rate used (%)	7%
TIP: Best to use an interest rate which represents the average cost of capital for your business.		

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Complete Version

Additional data entry sheets for the 'Complete' Turf Cost of Production Calculator

Machinery Costs in the "Complete" Cost of Production tool				
26. Machinery Operations for growing turf (FORM costs)				
Item of equipment	*Annual Hours*	*Estimated Fuel Usage (litres/ Hour)*	*Price of Fuel (net of rebate) ($/ litre)*	*Annual Repairs and Maintenance cost for this item of equipment*
Tractor 1	700	9	$1.40	$1,000
Tractor 2	700	9	$1.40	$1,000
Tractor 3	500	20	$1.40	$1,000
Tractor 4				
Tractor 5				
Harvester	1,500	25	$1.40	

TIP:
FORM costs represent the costs associated with Fuel, Oil, Repairs, and Maintenance (FORM) for the farm equipment involved with growing turf. Section 26 captures the information for self propelled items of machinery such as tractors and some turf harvesters.

Please note that FORM costs and items of machinery listed here are not linked to the capital investment table which is established in Section 11. As a result, when listing items of machinery to calculate FORM costs, if you have three 60 horsepower tractors with similar very similar fuel costs and similar repairs and maintenance costs then you can choose to enter these as one tractor. You can then link any implements that generally connect to tractors of this size to this one tractor in the Complete COP tool.

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27. Repairs and Maintenance per pass for implements						
Item of equipment	*Tractor Match (1,2,3,or 4)*	*Annual Hours for this item*	*Annual R&M for this item ($)*	*Implement Width or Coverage (m)*	*Travel speed (km/hour)*	*Field Efficiency (%)*
Harvester				0.60	2	
Harrows	2	100	$1,000	3.00	4	
Fertiliser Spreader	1	100	$500	15.00	10	
Boom Spray	1	500	$500	15.00	5	
Org Spreader	2	50	$500	10.00	10	
Small Mower	2	500	$1,000	3.00	5	
Medium Mower	2	600	$1,600	5.00	8	
Large Mower	3	1,000	$4,000	8.00	8	
Vacuum	3	20	$450	3.00	6	
Agrivator	2	150	$3,000	5.00	10	
Slasher	1	100	$400	3.00	10	
Planter	1	30	$1,000	2.00	7	
Other						
Other						
Other						
Other						
Other						
Other						
Other						
Other						

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Complete Version

Variable costs by variety in the "Complete" Cost of Production tool				
28. Pre Planting Variable Costs – Variety 1				
Gross Margin Analysis by variety	***Variety 1***		*Record Variety Name*	
			Couch	
	Number of years between preparations		5	
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Planting and Pre-planting Machinery Operations	Contract services for preparation		1	
	Harrows		6	
	Planting		1	
Pre-plant Herbicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Herbicide A	2	1.80	$10
	Herbicide B	1	1.25	$12
Pre-plant Soil Preparation	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Lime	1	2,500	$0.04
	Manure	1	8,000	$0.05
Planting Materials	*Item*		*Units/Ha*	*$/unit*
	Seed		30	$3.00
	Stolons			

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29. Pre Harvest Variable Costs – Variety 1				
Pre-Harvest Machinery Operations	*Machinery Operation*		*# Operations*	*Cost per pass (from machinery costs)*
	Mowing		40	
	Aerating		2	
	Fertiliser applications		3	
	Spraying		3	
	Rolling		1	
Pre-Harvest Fertiliser	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Fertiliser blend	3	500	$1.00
	Trace	0	0	$0
	Magnesium	1	10	$3.00
	Manure	1	20,000	$0.05
Pre-Harvest Herbicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Herbicide A	2	1.00	$400
	Herbicide B	2	2.00	$50
	Herbicide C	2	1.50	$30
Pre-Harvest Insecticides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Insecticide A	2	2	$60
Pre-Harvest Fungicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Fungicide A	2	1.5	$30

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Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
	Growth regulant	6	2	$265
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
		15	$35	
	Casual labour	*Hours per Ha*	*$ per hour*	

30. Harvest Variable Costs – Variety 1				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
	Chemical A	1	2	$225
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*
	Final mow before harvest		1	$7.75
	Vacuum		1	$38.68
	Scarify		1	$10.68

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31. Pre Planting Variable Costs – Variety 2				
Gross Margin Analysis by variety	***Variety 2***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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32. Pre Harvest Variable Costs – Variety 2				
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fungicides				

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Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

33. Harvest Variable Costs – Variety 2				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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34. Pre Planting Variable Costs – Variety 3				
Gross Margin Analysis by variety	***Variety 3***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass(from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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35. Pre Harvest Variable Costs – Variety 3				
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest **Fungicides**	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

36. Harvest Variable Costs – Variety 3				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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37. Pre Planting Variable Costs – Variety 4				
Gross Margin Analysis by variety	***Variety 4***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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38. Pre Harvest Variable Costs – Variety 4				
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest **Fungicides**	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

39. Harvest Variable Costs – Variety 4				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

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40. Pre Planting Variable Costs – Variety 5				
Gross Margin Analysis by variety	***Variety 5***		*Record Variety Name*	
	Number of years between preparations			
	Machinery Operation		*# Operations*	*Cost per pass (from machinery costs)*
Planting and Pre-planting Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-plant Soil Preparation				
	Item		*Units/Ha*	*$/unit*
Planting Materials	Seed			
	Stolons			

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41. Pre Harvest Variable Costs – Variety 5				
	Machinery Operation		*# Operations*	*Cost per pass from machinery costs)*
Pre-Harvest Machinery Operations				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Fertiliser				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Herbicides				
	Product	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Pre-Harvest Insecticides				

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Pre-Harvest Fungicides	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Growth Regulants	*Product*	*# Applications*	*Application Rate per Ha (kg or litres)*	*Cost in $ per litre or kilogram*
Other	*Item*		*$ per Hectare*	
Irrigation	Water	*ML per Ha*	*$ per ML*	
	Casual labour	*Hours per Ha*	*$ per hour*	

42. Harvest Variable Costs – Variety 5				
Pre harvest spray	*Product/mix*	*# passes*	*Litres per Ha*	*$/Litre*
Harvest Machinery Operations	*Machinery Operation*		*# passes*	*Cost per pass (from machinery costs)*

This project has been funded by HAL using the turf levy and matched funds from the Australian Government.

Complete Version

Farm Labour in the "Complete" Cost of Production tool			
43. Farm Labour	*On-costs*		
	Workcover (%)		5%
	Superannuation contributions (%)		9.25%
	Leave loading (% of 4 weeks wages)		15%
	Training (%)		1%
	Casual employees	*Hourly Rate ($)*	*Annual Hours*
	Casual worker 1		
	Casual worker 2		
	Casual worker 3		
	Casual worker 4		
	Casual worker 5		
	Casual worker 6		
	Casual worker 7		
	Casual worker 8		
	Casual worker 9		
	Casual worker 10		
	Permanent employees	*% Full Time Equivalent (FTE)*	*Weekly Salary*
	Employee 1	1.0	$1,200
	Employee 2	1.0	$1,000
	Employee 3	1.0	$1,200
	Employee 4	0.5	$900
	Employee 5		
	Employee 6		
	Employee 7		
	Employee 8		
	Employee 9		
	Employee 10		

Horticulture Australia

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Complete Version

44. Owner Drawings	Owner/Operator Average Weekly Drawings	*% Full Time Equivalent (FTE)*	*Weekly Drawings*
		1.2	$2,000
TIP: If using farm employed labour for delivery and installation operations please ensure that you reconcile all labour across the three sections of the business to avoid double counting staff.			

Horticulture Australia

This project has been funded by HAL using the turf levy and matched funds from the Australian Government.

Staying in the Green Turf Cost of Production Calculator Evaluation

1. Where did you hear about the Staying in the Green Turf Cost of Production Calculator program (select all applicable)

- [ ] Industry development officer
- [ ] State Turf Association
- [ ] Turf Enews
- [ ] Turf Australia Industry magazine
- [ ] Other Industry magazine
- [ ] Local Land Services officer
- [ ] At a turf industry event
- [ ] Email
- [ ] Phone call
- [ ] SMS

Other (please specify)

2. When did you participate in the Staying in the Green Turf Cost of Production Calculator program?

- [ ] 2014
- [ ] 2015

3. How did you participate?

- [ ] Attended a workshop
- [ ] 1:1 session with a delivery team member
- [ ] Remote completion using u tube webinar and telephone support

4. Did you work through any of the case study examples to help you learn to use the Turf Cost of Production Calculator?

- ◯ Yes
- ◯ No

5. Are you aware of the YouTube series of webinars that are available to help you use the Turf Cost of Production Calculator?

- ◯ Yes
- ◯ No

6. Did you use the YouTube series of webinars?

- ◯ Yes
- ◯ No

7. Rate the value of the YouTube webinar series.

- ◯ Of no value
- ◯ Limited value
- ◯ Average value
- ◯ Valuable
- ◯ Highly valuable

8. If you attended a workshop, did you receive any follow up from a member of the project delivery team after the workshop was completed?

- ◯ Yes
- ◯ No
- ◯ Not applicable

9. Please rate the value of the follow up provided?

- ◯ Of no value
- ◯ Limited value
- ◯ Average value
- ◯ Valuable
- ◯ Highly valuable

10. Did you contact a member of the project delivery team to request assistance to help you complete the Turf Cost of Production Calculator?

- ◯ Yes
- ◯ No

11. Please rate the value of the assistance provided

- ◯ Of no value
- ◯ Limited value
- ◯ Average value
- ◯ Valuable
- ◯ Highly valuable

12. Have you attempted to enter your own data into the Turf Cost of Production Calculator?

- ◯ Yes
- ◯ No

13. How difficult or easy did you find this task, where 1 is very easy and 7 is very difficult.

◯ 1	◯ 2	◯ 3	◯ 4
◯ 5	◯ 6	◯ 7	

14. Have you successfully completed calculating, for your business, a cost of production :

	Yes	No	Not applicable
Per square metre of turf?	◯	◯	◯
For delivery of turf?	◯	◯	◯
For installation of turf?	◯	◯	◯

15. If no, what has stopped you from calculating your own cost of production?

16. A long term aim of the turf industry is to better understand business performance across industry, to help identify future needs and priorities. To begin the process the Turf Cost of Production Calculator included a "submit now" button. This sends benchmark data to an independent third party able to guarantee confidentiality of information.

Were you aware of the Submit Now function?

- ◯ Yes
- ◯ No

17. Have you, or would you, use the Submit Now function to send the benchmark data for your business ?

- ◯ Yes
- ◯ No

18. Do you have any concerns with submitting your benchmarking data ?

19. Have you adjusted the prices you charge since attending a Staying in the Green Turf Cost of Production Calculator project activity? If a change has been made, indicate if the price has increased or decreased.

	Yes	No	Increased	Decreased	Not applicable
Per square metre of turf?	☐	☐	☐	☐	☐
For delivery of turf?	☐	☐	☐	☐	☐
For installation of turf?	☐	☐	☐	☐	☐

20. Are there any other changes that you have made to your business as a result of participating in a Staying in the Green Turf Cost of Production Calculator project activity?

21. Can you suggest any follow-up activities, or other ways that would help you to either complete, or better understand, the cost of production calculations for your business.

22. Overall, can you please rate the value of participating in the Staying in the Green Turf Cost of Production Calculator program

- ◯ Of no value
- ◯ Limited value
- ◯ Average value
- ◯ Valuable
- ◯ Highly valuable

23. In the future, are you interested in understanding more about (select all applicable):

- ☐ What records I need to keep so I can calculate my cost of production
- ☐ When you should review your cost of production once it is initially calculated
- ☐ Managing your cash flow, expenses and input costs
- ☐ Understanding what drives profit for your business
- ☐ Making machinery purchase decisions for your business
- ☐ The complete version of the Turf Cost of Production Calculator tool
- ☐ The benchmarks calculated by the Turf Cost of Production Calculator tool
- ☐ Benchmarks for the broader turf industry, and how your business compares

24. Are there any other business management issues that you think turf growers need some assistance with?

25. Select your state

- ◯ Queensland
- ◯ New South Wales
- ◯ Victoria
- ◯ Tasmania
- ◯ South Australia
- ◯ Northern Territory
- ◯ Western Australia

Thank you for taking the time to complete the survey. Your input helps us understand the impact of the Staying in the Green project and improve any future project activities.

It also helps us identify other business related needs of the turf grower community, to assist future planning.

By completing the survey, you can win one complimentary registration to the 2015 Turf Australia Conference and Field Day being held 26 – 28 August at Queensland's the Sunshine Coast.

Email Turf Australia on admin@turfaustralia.com.au and provide your contact details (as detailed below) to go into the draw.

Note your survey responses remain confidential i.e. your responses and the email do not link.

Email title: Staying in the Green Conference draw

Business name:

Contact Name:

Contact Number:

Email Address:

Postal address: