Horticulture Innovation Australia

Final Report

Australian Avocado Benchmarking Program Development

Howard Hall
CDI Pinnacle Management Pty Ltd

Project Number: AV11026

AV11026

This project has been funded by Horticulture Innovation Australia Limited using the avocado industry levy and funds from the Australian Government.

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Purpose of Report:

The purpose of this project (HAL Project AV11026) is to undertake research and provide reports:

1. To provide a tool to avocado growers to achieve Australian best practice,
2. To assist the Australia avocado industry to identify how it performs (re financial and productivity) compared to other global competitors,
3. To assist Avocados Australia Limited (AAL) to compile data / information relating to specific aspects of avocado production,
4. To provide a mechanism through which AAL and R&D organizations are able to identify those areas where R&D investment is most needed,
5. To provide a tool to growers and industry to allow them to calculate the benefits (or otherwise) of R&D and grower initiated adjustments to business practices.

This report provides the first industry report outlining the findings of collecting data from fifty five (55) avocado growers distributed across all eight growing regions as these regions are identified by Avocados Australia Limited (AAL). Information herein is collated from records and input specifically about the business practices, performance and outcomes of the participating businesses in the 2011-12 financial year.

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1. GLOSSARY OF TERMS

Term Used	Meaning
Average	The average value reported amongst all participants that contributed information used in this measure / descriptor
Count / Count Size / Size	Count / Count Size / Size: Size of packed avocado fruit is determined by how many pieces of fruyit will fit into a standard 5.5 Kg tray or tray equivalent
EBIT	Earnings Before Interest and Tax (Net Operating Profit+ Interest and Finance Costs)
EBITDA	Earnings Before Interest, Tax , Depreciation and Amortisation (EBIT + Depreciation and Amortisation) – Also sometimes termed 'Cash Profit'
Fixed Costs	In this analysis these are all the costs associated with growing and maintaining the orchard and all overhead costs. It excludes costs associated with picking, packing, transporting, marketing and ripening fruit for market sale.
Full Time Employee Equivalent / FTE / FTEs	Full Time Employee Equivalent. Treated as one full time employee working40 hours per week for 48 weeks per year (due to some variations in awards and hours per week in different jurisdictions an average of 2,000 hours has been used as an FTE, 2000 = 1 FTE)
Gross Sales Revenue	Gross sales achieved before any costs (before marketing fees, freight, PBR fees, brokerage etc. and all other costs)
Growing Costs, Overheads & Other Costs (Also called Fixed Costs in this Analysis)	All costs except costs referred to as To-Market Costs' (Below)
High / Highest	The highest value reported amongst all participants that contributed information used in this measure / descriptor
Indicative Pay Rate	Where pay details are not provided an hourly rate of $20 per hour plus Superannuation has been used.
Low / Lowest	The lowest value reported amongst all participants that contributed information used in this measure / descriptor
Net Profit Before Tax	Gross Sales Revenue achieved less Total Costs and Before Tax
Operating Costs (Excluding Interest, Tax, Depreciation and Amortisation	Total Costs excluding Interest, Tax, Depreciation and Amortisation
Premium / Premium %	Premium Grade is the highest grade produce sold by participants Premium % is the % of total marketed produce that is sold as Premium Grade Produce
Producing Hectare	Hectare of planted trees that were harvested in the 2011 / 2012 harvest season
Producing Tree	An avocado tree that produced a marketable yield in the financial year

Term Used	Meaning
Rank	Rank 1 is the highest value recorded amongst participants, higher ranking numbers are the smallest numbers recorded for that measure / descriptor
'Strawman' Concept Model	An initial draft outline of a subject which is expected to be modified by others and by ongoing collection of data and input.
The 45	The remainder of the benchmarking participation group that did not achieve adequate Cash Profit (EBITDA) to be included in the Top 10
To-Market Costs (Also Called Variable Costs in this analysis)	Picking Labour, Packing Labour, Packaging Costs, Power and Gas Costs, Contract Packing Fees, Outgoing Freight Costs, Marketing and Ripening Costs.
Top 10	The top ten (10 performing businesses in the benchmarking participation group, ranked on the basis of Cash Profit (EBITDA) per Producing Hectare
Total Costs	All costs incurred (including marketing fees, freight, PBR fees, brokerage etc., interest [where provided], depreciation (where provided], amortisation (where provided] and all other costs)
Unallocated (Paid) Owners Labour Costs	Where owners are paid in the financial accounts of the business this labour has not been allocated to a function (e.g. pruning), and left unallocated - applying across the entire business.
Unpaid Owners Wages	Allocated cost to cover the time spent working in the business by family members who are not paid in the financial records of the business (Rate used is the same as rate for farm workers, $20 / hour)
Variable Costs	In this analysis these are the costs associated with picking, packing, packaging, contract packing fees, freight to market, marketing costs and fees and ripening costs and fees.
5.5 KG Tray Equivalent	Total Kilograms (Kgs.) of fresh produce sold divided by 5.5 = 5.5KG Tray equivalents (where it assists in analysis, juice / processing fruit may also be referred to in 5.5Kg equivalents)

2. MEDIA SUMMARY

Project AV 11026 is a benchmarking study in which fifty five (55) Australian avocado producers, that are representative of the overall producer population, provided data about their business's operational and financial performance in financial year 2011-12 for the development of comparative benchmarking reports.

In 2011-12 the average gross revenue per producing hectare for participants in this program was $31,436 and on a 'per tray sold' basis was $19.09. Of that gross revenue, $23,759 per hectare and $14.43 per tray sold was absorbed in operating costs (not including costs of finance, depreciation, amortisation, or a return on capital invested).

The average EBITDA or cash profit achieved (before interest, tax, depreciation and amortisation) was $ 7,677 per hectare and $4.66 per tray sold. From that cash profit producers had to pay interest, depreciation and amortisation, income tax and a return on the capital employed on land, water, improvements, and owned capital equipment.

The Top Ten (10) performing businesses in this group (accounting for approximately 3% of total producing area in Australia) earned $17.91 per tray sold, however achieved profits per tray sold of more than double that achieved by the remainder of the group.

The yield achieved per producing hectare was the output variable with the most impact on the ability of participants to deliver an acceptable profit in 2011-12. The achievement of high pack outs to premium grade and into mid-sized size counts (18 – 25) also varied significantly. The average pack out to premium for the group was 75% (83% for the Top 10) and pack out to Sizes 18 to 25 was 58% for the group (62% for the Top 10).

The average yield achieved for the participant group in 2011-12 was 9,056 kilograms per producing hectare and 8.79 Trays (5.5 Kg equivalent) per producing tree. The Top 10 achieved an average yield per producing hectare of 18,697 Kilograms and 17.92 trays per producing tree.

Labour use efficiency for the participant group averaged 7.14 hectares managed per Full Time Employee Equivalent (FTE). The Top 10 averaged over 18 tonnes per hectare of yield and employed an FTE for every 4.7 hectares managed. The Top 10 demonstrated that when good yields are achieved it costs significantly more to produce and labour use is higher, however profits improve significantly.

There are also indications that some farm and management practices maybe linked to improved business outcomes. However the data from this representative group of producers demonstrated very significant variations in input costs, outputs, and resulting business outcome both within regions and between regions.

A broader data set, across multiple years will be needed to take into account the variations in this diverse industry (spread across eight growing regions with latitudes between 17^0 South, and 34^0 South, and with altitudes between 750 metres and 6 metres above sea level), before sound conclusions about cause and effect relationships can be assessed.

3. TECHNICAL SUMMARY

Sampling and Participants

Project AV 11026 is a benchmarking study in which fifty five (55) Australian avocado producers, that are representative of the overall producer population, provided data about their business's operational and financial performance in financial year 2011-12 for the development of comparative benchmarking reports.

The participants for this project were identified and engaged through several key mechanisms, including:

1. All Australian avocado producers that are members of Avocados Australia Limited (AAL) were sent a letter by Avocados Australia Limited outlining the project and inviting them to participate,

2. Researchers collated lists, from multiple sources, of all known avocado producers in each growing region,

3. CDI Pinnacle Management's records were accessed to identify all known avocado producers as well as other rural producers that could assist with the identity of producers of avocados.

A total of 27 avocado producers contacted the researchers after receiving the letter of invitation and enrolled in the project. After further field work using the resources identified above, total of 69 participants expressed their wish to be involved. Several of these parties did not proceed with full data provision, some due to their inability, in this financial year, to provide all the required data, others due to reasons unrelated to the project requirements. A total of 55 participants provided all required data sets and have received full sets of individual producer reports.

The Australian Avocado industry is more widely distributed across the Australian land mass than many in horticulture. Avocado orchards that are located between 17^{o} South and 34^{o} South are included in this participating group.

The group of avocado producers that participated in the benchmarking program in the 2011-12 year are estimated to account for 26% of the total producing area in the industry, 38% of the volume produced by the industry in that year and approximately 40% of the gross revenue from farming operations in the industry.

The Australian Avocado Industry 2011-12

In the financial year 2011-12 the Australian avocado industry produced over 9 million trays of avocados equivalent to 52,542 tonnes of production. Using key parameters found amongst the benchmarking participants this production had an ex-farm gate value in the vicinity of A$180 million[1].

[1] Horticulture Australia Limited, Avocado Industry Annual Report, 2011/12

Using the average return and other key parameters achieved by participants in this benchmarking program, industry participants managed approximately 8,500 hectares of producing orchards and employed some 1,200 full time employee equivalents in 2011-12.

Key Findings

In 2011-12 the average gross revenue per producing hectare for participants in this program was $31,436 per producing hectare and on a 'per tray sold' basis was $19.09. Of that gross revenue, $23,759 per hectare and $14.43 per tray sold was absorbed in operating costs (not including costs of finance, depreciation, amortisation, or a return on capital invested).

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The Top Ten (10) performing businesses in this group (accounting for approximately 3% of total producing area in Australia) earned $17.91 per tray sold, however achieved profits per tray sold of more than double that achieved by the remainder of the group.

The yield achieved per producing hectare had a dramatic impact on the ability of participants to deliver an acceptable profit in 2011-12. The achievement of high pack outs to premium grade and into mid-sized size counts (18 – 25) also varied significantly. The average pack out to premium for the group was 75% (83% for the Top 10) and pack out to Sizes 18 to 25 was 58% for the group (62% for the Top 10).

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Farm and Management Practices

There are also indications that some farm and management practices maybe linked to improved business outcomes. These may include aspects of pruning practices, irrigation practices, and nutrition strategies. However, the data from this representative group of producers demonstrated very significant variations in input costs, outputs, and resulting business outcome both within regions and between regions.

A broader data set, across multiple years will be needed to take into account the variations in this diverse industry (spread across eight growing regions with latitudes between 17^0 South, and 34^0 South, and with altitudes between 750 metres and 6 metres above sea level), before sound conclusions about cause and effect relationships can truly be assessed.

4. INTRODUCTION

The Australian Avocado industry has experienced significant growth in the past ten years and is now an industry that is more widely distributed across the Australian land mass than many in horticulture. In the financial year 2011-12 the industry produced over 9 million trays of avocados equivalent to 52,000 tonnes of production that had an ex-farm gate value in the vicinity of A$180 million (using the average return achieved in the benchmarking participation group as a guide to farm gate returns). Based on information gathered in this project, the industry participants manage approximately 8,500 hectares of producing orchards and employ some 1,200 full time employee equivalents

The principal objectives of this project (HAL Project AV11026) are:

6. To provide a tool to avocado growers to achieve Australian best practice,
7. To assist the Australia avocado industry to identify how it performs (re financial and productivity) compared to other global competitors
8. To assist Avocados Australia Limited (AAL) to compile data / information relating to specific aspects of avocado production,
9. To provide a mechanism through which AAL and R&D organizations are able to identify those areas where R&D investment is most needed.
10. To provide a tool to growers and industry to allow them to calculate the benefits (or otherwise) of R&D and grower initiated adjustments to business practices.

This report provides the first industry report outlining the findings of collecting data from fifty five (55) avocado growers distributed across all eight growing regions as these regions are identified by Avocados Australia Limited (AAL). Information herein is collated from records and input specifically about the business practices, performance and outcomes of the participating businesses in the 2011-12 financial year.

The collected information has been entered, stored and analysed using a new database program developed by CDI Pinnacle Management Pty Ltd and a professional data base design engineering firm. This software has been developed with some clear goals in mind, particularly with respect to the flexibility the package delivers in how reports can be structured and created and how data can be analysed from multiple perspectives.

The reports package that has now been prepared and delivered to the participating growers includes:

1. Comparative Analysis Report – Participant compared to participant group
2. Comparative Analysis Report – Participant compared to participants in their own region
3. Comparative Analysis Report – Participant compared to participants in the same size of operation category
4. Practices Summary Report – For the Participant Group

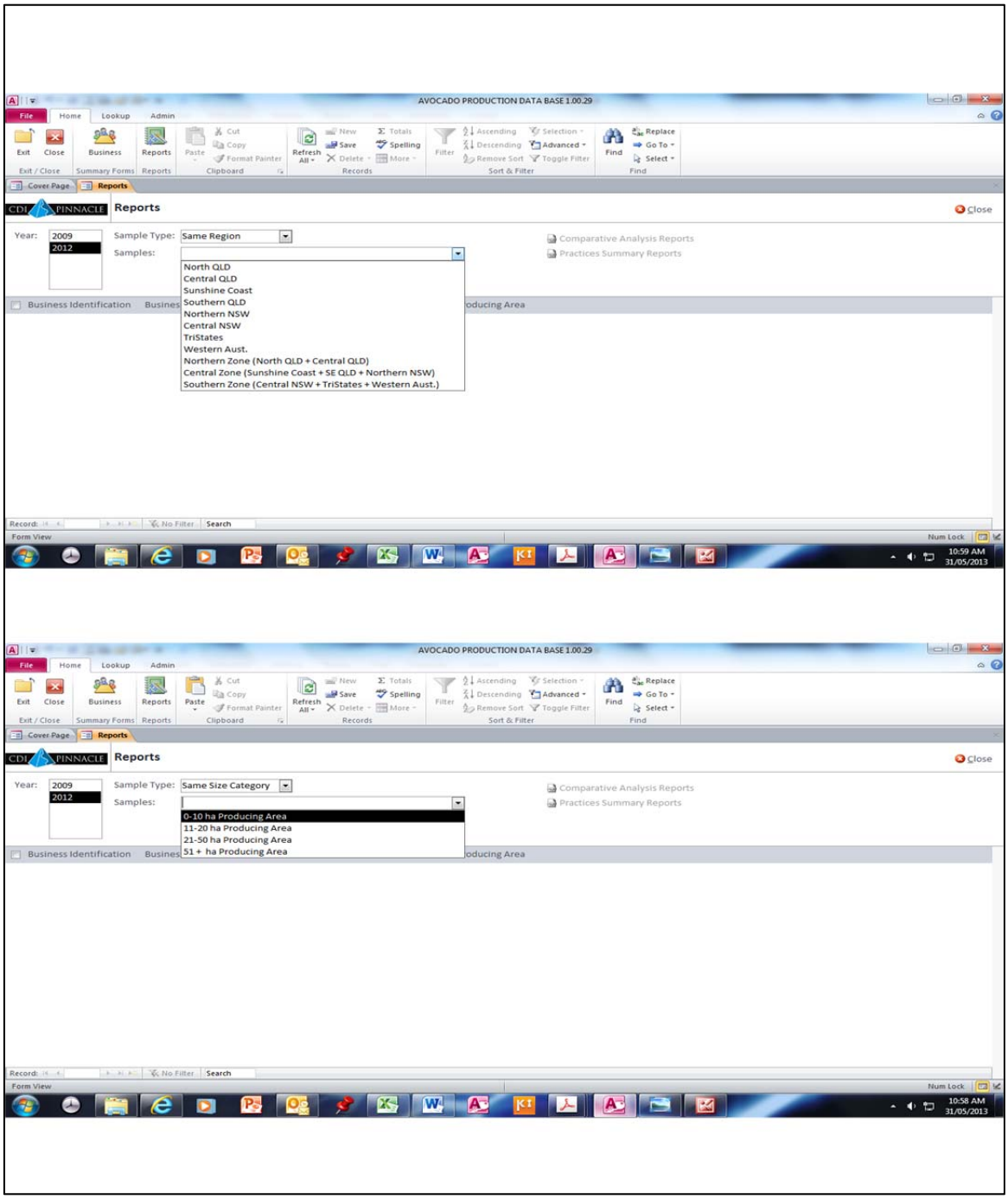
Figure 1 Avocado Production Data Base

Further to the above, and as a direct result of the flexibility that has now been built into the software package, the researchers have been able to produce and deliver, on very short notice, some specific reports requested by some of the participants. These have included reports comparing organic producers with other organic producers (only) and reports comparing specific producers with other producers that have orchards of similar average age.

Specific reports have also been created and used extensively in the analysis phase including reports comparing the Top 10 group in isolation, the remainder (45) in isolation, practices summary reports for sub-groups, and other reports that have assisted the analysis.

This industry report has been structured with careful thought given to the amount of data that has been collected and analysed. The aim has been to make it a readily usable document that follows a logical path from less detailed / summarised information (forwards) to the finer detail that follows.

Figure 2 Software Reporting Functionality



5. MATERIALS AND METHODS

5.1Participant Group (Sample)

The participants for this project were identified and engaged through several key mechanisms, including:

1. All Australian avocado producers that are members of Avocados Australia Limited (AAL) were sent a letter by Avocados Australia Limited outlining the project and inviting them to participate,
2. Researchers collated lists, from multiple sources, of all known avocado producers in each growing region,
3. CDI Pinnacle Management's records were accessed to identify all known avocado producers as well as other rural producers that could assist with the identity of producers of avocados.

A total of 27 avocado producers contacted the researchers after receiving the letter of invitation and enrolled in the project. After further field work using the resources identified above, total of 69 participants expressed their wish to be involved.

Several of these parties did not proceed with full data provision, some due to their inability (in this financial year) to provide all the required data, others due to reasons unrelated to the project requirements. A total of 55 participants provided all required data sets and have received full sets of individual producer reports.

The following sections outline some key parameters of the footprint / nature of this industry and how the participant group (sample) is distributed across these key parameters.

5.1.1 SAMPLE DISTRIBUTION ACROSS REGIONS

The participant group collectively grow 416,000 trees on a total of 2,220 hectares of land, in the eight primary avocado growing regions as defined by Avocados Australia Limited (AAL) and Horticulture Australia Limited (HAL).

The distribution of producing hectares and producing trees across the eight growing regions are provided in Table 1.

Table 1 Producing Hectares and Trees Across Growing Regions

	REGIONS	Number	Area	%	Trees	%
1	North QLD	8	320	14%	44,670	11%
2	Central QLD	6	1,065	48%	196,672	47%
3	Sunshine Coast	4	54	2%	10,780	3%
4	South QLD	9	127	6%	22,262	5%
5	Northern Rivers	7	216	10%	26,199	6%
6	Central NSW	9	152	7%	30,584	7%
7	Tri States	5	105	5%	23,149	6%
8	Western Australia	7	181	8%	61,134	15%
		55	2,220	100%	415,450	100%

The numbers of participants that are located in each growing region are also illustrated in Figure 3. The distribution across regions is quite even across all regions other than the Sunshine Coast and Tri States regions.

In these two regions the representation was impacted by some late withdrawals from the participant group for several reasons beyond the control of the researchers. Engaging more participants in these two regions will be given priority in any subsequent round of data collection.

The average producing area that participants managed in these regions in the 2011-12 financial year range from 14 hectares to 178 hectares, as outlined in Table 2.

Figure 3 Distribution of Participants Across Growing Regions

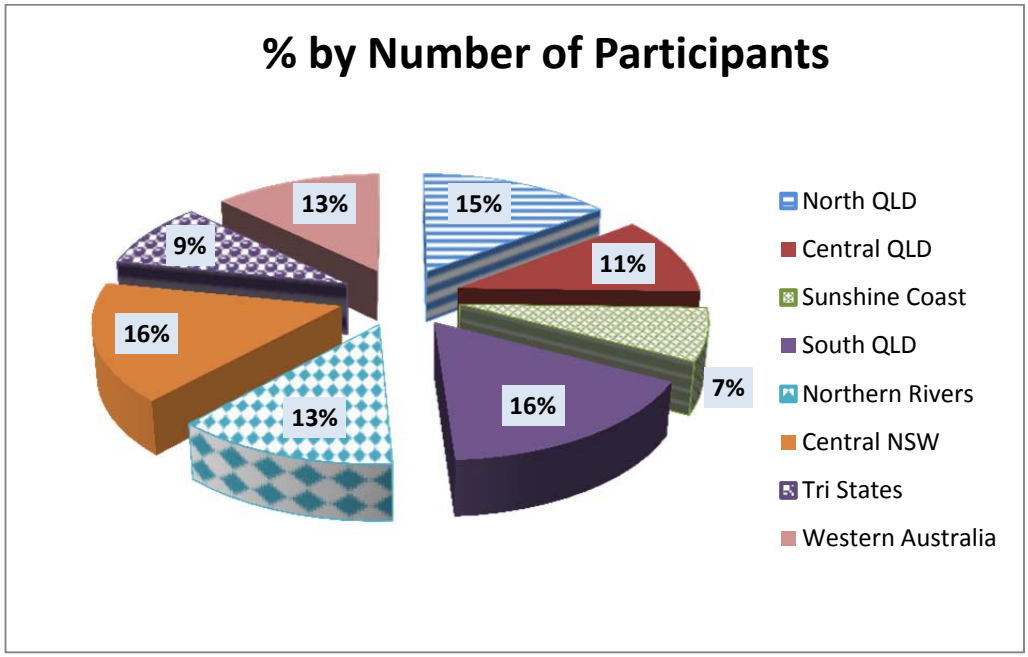


Table 2 Average Producing Area of Participants in Each Region

	Average Farming Area (Ha) (of Participants)
North QLD	40
Central QLD	178
Sunshine Coast	14
Southern QLD	14
Northern NSW	31
Central NSW	17
Tri States	21
Western Australia	26
TOTAL GROUP	40

5.1.2 SAMPLE DISTRIBUTION ACROSS SIZE OF OPERATION CATEGORIES

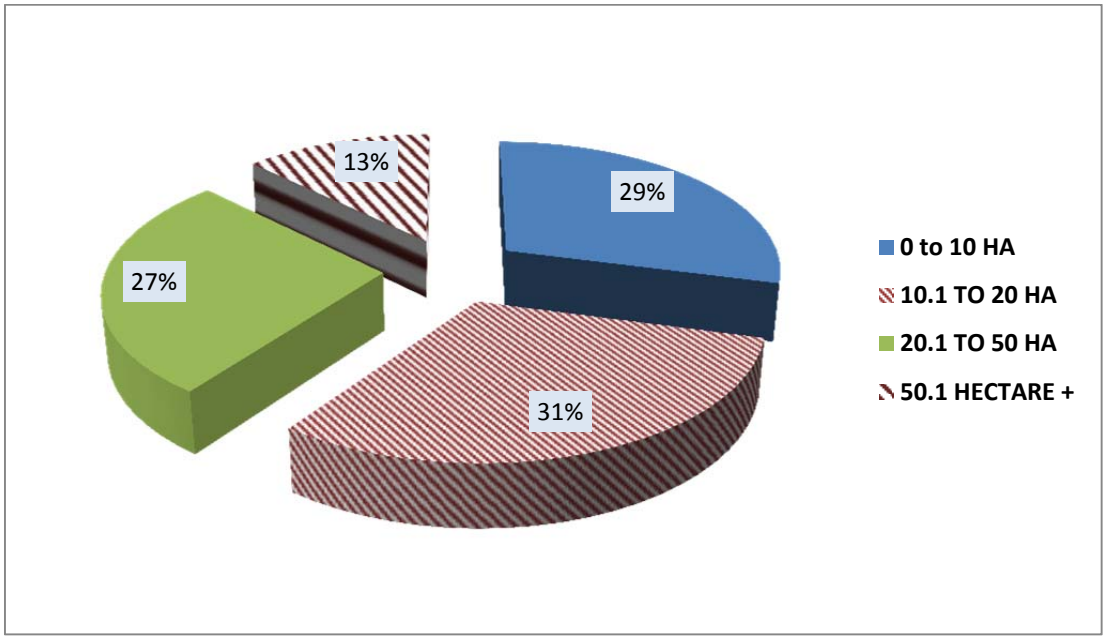
The size of avocado orchards operated by participants in the program varied greatly from less than one hectare to some with greater than 100 hectares of producing trees.

As one might expect, the number of participants in the smaller size categories in Table 3 (and Figure 4) is higher than in the larger categories, and the numbers of producing trees / hectares increases for larger size categories.

Table 3 Distribution of Participants Across Business Size Categories

SIZE CATEGORIES	Number	Area	%	Trees	%
0 to 10 HA	16		4%		5%
10.1 TO 20 HA	17		11%		12%
20.1 TO 50 HA	15		22%		24%
50.1 HECTARE +	7		62%		59%
	55	2,220	100%	415,450	100%

Figure 4 Distribution of Participants Across Business Size Categories



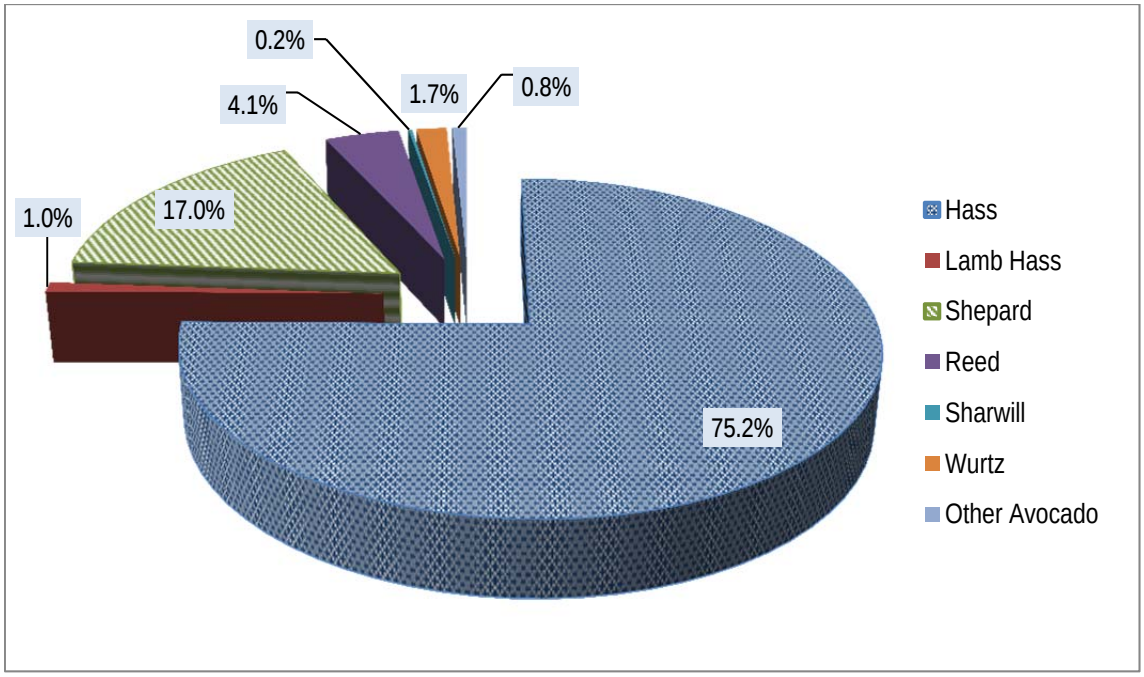
5.1.3 DISTRIBUTION OF VARIETIES IN SAMPLE

The varieties Hass (75%) and Shepard (17%) dominate the producing assets managed by the participant group. Varieties Reed, Wurtz, Sharwill, Sir Prize, and Grieve are also grown in small proportions by participating businesses, as provided in Table 4 and Figure 5.

Table 4 Varieties Grown by Participating Businesses

VARIETIES	Producing Trees	%	Producing Hectares	%
Hass	316,512	76%	1,670	75%
Lamb Hass	4,567	1%	21	1%
Shepard	62,529	15%	377	17%
Reed	21,315	5%	92	4%
Sharwill	1,028	0%	5	0%
Wurtz	6,039	1%	38	2%
Other Avocado	3,460	1%	17	1%
TOTAL	415,450	100%	2,220	100%

Figure 5 Varieties (%) Grown by Participating Group



5.1.4 TYPES OF OPERATIONS INCLUDED

As outlined in Table 5, the participant group includes parties that manage family owned and operated businesses (93%) as well as corporate operations (7%). Also 78% of participants operate single farm enterprises and 22% operate multiple farm enterprises.

Table 5 Types of Business Operations Run by Participants

Family Owned and Operated Businesses	51
Corporately Owned and Operated Businesses	4
Single Farm Operations	43
Multiple Farm Operations	12

5.2Process Steps

The process steps taken to undertake the research, and to complete and deliver reports to participating producers, and prepare this Draft Report are summarised in Table 6.

Table 6 Method Steps and Processes

PROCESS STEPS	STATUS
Identification of Prospective Participants	✓
Scoping / Content and Familiarity with Issues - Discussions with Project Reference Group and Selected Participants	✓
Survey Instrument / Questionnaire Design, Testing and Refinement	✓
Master Data Sheet Design	✓
Software Design - Data Entry	✓
Recruiting Willing Participants	✓
Set Up Visit Programs and On-Farm Visits	✓
Undertake On-Farm Visits	✓
Software Design - Reporting	✓
Collate, Clean, Normalise & Cross Reference Gathered Information	✓
Fill Gaps through Further Interaction with Participants	✓
Prepare and Send Master Data Sheets to each Participant	✓
Receive Verified Master Data Sheets from each Participant	✓
Enter Data - From Master Data Sheets to Database	✓
Run Test Reports and Cross Reference	✓
Complete Additional Data Cleaning and Normalising as Needed	✓
Update and Finalise Data in Database	✓
Run Participant Reports	✓
Review, Test, Check and Re-Clean / re-Normalise data as needed	✓
Deliver Participant Reports	✓
Follow Up to Ensure Reports Received	✓
Interact with Participants as Required	✓
Prepare and Deliver Draft Industry Report	✓
Receive Feedback and Refinement from Project Reference Group / AAL / HAL	
Deliver Final Industry Report	
Dissemination / Technology Transfer as Per Contract Undertakings	

There has been a large body of data collected from producers that have been delivered in a multitude of forms and levels of detail. Every attempt has been made to cross check and validate information as it has been transformed from raw data and notes into a form suitable for entry into a software database package.

This process, referred to herein as cleaning and normalising, has also necessitated some re-design of software as it became apparent that not all data collected was able to be stored in some pre-defined formats.

Of note is the benefits brought to this process by the design and use of Data Checklists, and Master Data Sheets. These two steps formed a key part of the quality checking process so as data entered into the database had already been cleaned, normalised, checked, tested, verified by the participant, and stored in a stable format as the enduring ‘raw data record’ (The Master Data Sheet).

6. RESULTS

6.1A Diverse and Widely Distributed Industry

Much of the information in this section is presented in graphical or tabular form. There has been a very significant level of information and detail gathered, collated and analysed. The structure selected for this section and the use of graphs and tables is designed to enable readers to access the detail in a user friendly format.

The information presented herein is information gathered from a sample of fifty five (55) Australian avocado growers and is limited to information pertinent to a single year of operations, financial year 2011 – 12 (year ending 30 June 2012), for each of the growers' businesses.

The avocado industry is distributed across eight growing regions, each of which have very different climatic, geographic and soil type parameters. Significant differences in agronomic practices, growing conditions and business outcomes across the different regions have been identified in 2011-12 in the collated information.

Outcomes in each region can vary greatly from year to year. In the financial year 2011-12, to which the information pertains, growing conditions and business outcomes appear to have been better for growers in some regions. The variant in business outcomes that appears to most closely relate to differences in financial outcomes is crop yield.

There are differing opinions in the industry about the phenomenon of biennial bearing or alternative bearing of avocado trees in Australia. This project does not attempt to address this phenomenon in any way.

However the variation in yield and business outcomes found across the eight (8) growing regions is significant. The variations and diversity support the need for the collection and use of data from multiple years in order to collate adequate information upon which to draw sound conclusions (regarding correlations or relationships between yield and business outcomes and specific farm and management practices).

6.2Key Findings

6.2.1 BACKGROUND DATA

The group of avocado producers that participated in the benchmarking program in the 2011-12 year are estimated to account for 26% of the total producing area in the industry, 38% of the volume produced by the industry in that year and approximately 40% of the gross revenue from farming operations in the industry. This information and the basis for arriving at these statistics are outlined in Table 7.

By applying the same labour use data (hectares per Full Time Employee Equivalent, FTEs) as that found in the participating group it is indicated that industry employed approximately 1,200 FTEs in that year and the participant group accounted for 312 FTEs. This information and method of estimation is also provided in Table 7. The group is estimated to have produced an average 65 tonnes for each FTE employed.

The 'Top 10' performing businesses that participated in the 2011-12 benchmarking program are estimated to account for 3% of the total producing area in the industry in that year, 10% of the volume produced and 10% of the gross revenue from farming operations. In Table 8 it is also estimated that the 'Top 10' employed 60 FTEs and produced an average 90 tonnes for every FTE employed.

Table 7 and Table 8 are on the following two pages.

Table 7 Key Background Data – Benchmarking Group 2011-12

2011-12	Industry (*)	Whole Group	Estimated % of Industry
Number of Producers	564 (1)	55	9%
Levies Received / Paid	3,935,387 (2)	1,511,028	38%
Tonnes Sold	52,472	20,147	38%
Tray Equivalent (5.5 kg) Sold	9,540,332	3,663,097	38%
Average Trays Produced / Tree	6 (3)	8.80	
Trees	1,590,055	416,261	26%
Average Trees / Hectare	187 (4)	187	
Hectares	8,503	2,226	26%
Tonnes Produced / Hectare	6,170	9,056	
Average $ / Tray	19.09 (4)	19.09	
Gross Revenue $	172,584,608	69,904,000	41%
Average FTES / ha	0.14 (4)	0.14	
Average Ha / FTE	7.14 (4)	7.14	
FTEs Employed	1,191	312	26%
Average Gross Revenue / FTE	144,920	225,093	
Average Tonnes Sold / FTE	44	65	

(*) Industry estimates herein are based on assumptions and extrapolations from the benchmarking program, information sourced from AAL, and other sources
(1) Estimate only based on personal communications with various parties
(2) Sourced from Australian Avocado Annual Report 2011-12
(3) Sourced from personal communications with numerous parties
(4) Average from the 2011-12 benchmarking data set is used and applied to industry scale,

Table 8 Key Background Data - Benchmarking 'Top 10' 2011-12

2011-12	Industry (*)	Top 10	% of Industry
Number of Producers	564 (1)	10	2%
Levies Received / Paid	3935387 (2)	411,112	10%
Tonnes Sold	52,472	5,481	10%
Tray Equivalent (5.5 kg) Sold	9,540,332	996,634	10%
Average Trays Produced / Tree	6 (2)	17.92	
Trees	1,590,055	55,620	3%
Average Trees / Hectare	187 (3)	192	
Hectares	8,503	290	3%
Tonnes Produced / Hectare	6,170	18,967	
Average $ / Tray	19.09 (3)	17.02	
Gross Revenue $	172,584,608	17,851,683	10%
Average FTES / ha	0.14 (3)	0.21	
Average Ha / FTE	7.14 (3)	4.76	
FTEs Employed	1,191	61	
Average Gross Revenue / FTE	144,920	293,662	
Average Tonnes Sold / FTE	44	90	

(*) Industry estimates herein are based on assumptions and extrapolations from the benchmarking program, information sourced from AAL, and other sources
(1) Estimate only based on personal communications with various parties
(2) Sourced from Australian Avocado Annual Report 2011-12
(3) Sourced from personal communications with numerous parties
(4) Average from the 2011-12 benchmarking data set is used and applied to industry scale,

6.2.2 MACRO VARIABLES

Inter-Region Differences (Between Regions)

This land based industry is distributed across eight regions from North Queensland all the way around to south west Western Australia. The data and analysis has identified that this industry in 2011-12 experienced very significant differences in growing conditions in regions, with resulting variations in yields and ultimately in business performance for participating growers.

Avocado orchards that are located between 17^{o} South and 34^{o} South are included in this participating group. This spread of locations is equivalent to an area:

1. From Lake Kariba on the Zambia / Zimbabwe border (north) to Hout Bay on the southern outskirts of Capetown (RSA) (south), or
2. From La Paz, Bolivia (north) to Santiago, Chile (south), or
3. From Los Angeles (north) to Guerrero Mexico (south).

The inter-regional differences manifest themselves particularly in respect of the **average yields achieved by participants in each region**. The average yield per producing hectare in regions ranged from 13.8 tonnes per hectare to 4.4 tonnes per hectare (plus or minus 4.7 from the midpoint), and the average across the entire group was 9.3 tonnes per hectare (regions average 8.8 tonnes).

Similarly, yield per producing tree in the regions ranged from 18 tray equivalents per tree to 3.5 tray equivalents per tree (plus or minus 7.25 from the midpoint) and the group total was 9.1 trays equivalent per tree. In both approaches to estimating yield the range is very wide. It is likely (however not tested or proven in data collected to date) that the of variations in yield in different regions are more related to factors outside of the control of the operator such as climatic conditions and locational issues given the differences in latitudes between regions.

It also is apparent from the data collected that the ability of an operator to achieve better financial returns from growing avocados is linked as closely to marketable yield as it is to any other variable identified. The variation found between regions suggests that data should be collected from these regions over a number of years if the resulting data is to be used as the basis for deeper analysis of how a range of factors, both manager controllable and those outside of management control, impact the outcomes for Australian avocado growers.

Intra-Region Differences (Within Regions)

Within each region there was a wide range of yields achieved in 2011-12 and a similarly wide range of business outcomes experienced. The variance in yields achieved ranged from 22 tonnes per hectare in one region (plus or minus 11 from the midpoint), to 6 tonnes per hectare in another, with the average range in regions being 15.5 tonnes (plus or minus 7.75 from the midpoint).

The factors impacting outcomes in each region are likely to be a mixture of external factors (e.g. climate or altitude etc.) and factors related to how 0perators managed their orchards. Further, since the data within regions is sourced from different single location points and is not an aggregate across multiple locations (as is data about differences between regions) it is not unexpected that differences (in a key parameter like yield) were larger within regions than between regions. There are also significant differences in factors such as altitude, rainfall and

temperature within regions. This finding further supports the desirability of collecting and analysing multiple years' data in order to create a sound statistical representation of the industry.

6.2.3 KEY PERFORMANCE MEASURES

In light of the inter-regional differences, Figure 6 illustrates the business performance of all participants in regions and it is **ranked in each region** on Profit achieved per producing hectare. The four Key Performance Indicators (KPIs) used in this illustration are:

1. Profit per Producing Hectare (EBITDA $ / Ha),
2. Yield per Producing Hectare (Kgs / ha),
3. % Packed to Premium Grade, and
4. % Packed into Size Counts 18 to 25

The overall average achieved for each of these is provided in Table 9.

Table 9 Key Performance Measures (KPIs) for Participating Group

Key Result Area	Measure (KPI)	Group Average
Profit per Producing Hectare (EBITDA $ / Ha),	EBITDA $ / Ha	7,677
Yield per Producing Hectare (Kgs / ha),	Kgs / Ha	9056
% Packed to Premium Grade, and	% Premium	75%
% Packed into Size Counts 18 to 25	% Size 18-25	58%

It is apparent from Figure 6 that profits and yield are closely correlated. In Western Australia the pattern between profits and yield appear to be at odds with the rest. This is impacted at least in part to the fact that there are more immature trees amongst participants in Western Australia than in the other regions. Due to the way producers account for costs on farms, it has not been possible to separate the on-farm expenditure applied to mature and producing trees to that applied to immature trees.

In regard to percentage of produce packed to premium and packed to mid-sized fruit, it appears that the linkage between count profile and business outcomes may be closer than the link between premium percentage and business outcomes. This may be due to the fact that there is a higher incidence amongst the group of fruit outside counts 18 to 25 being smaller, than larger. As the proportion of small fruit increases, the number of units of sale (trays / cartons) decreases.

In Central New South Wales and Western Australia participants experienced very low yields in 2011. When yield is very low, clearly producing good quality and size has limited ability to deliver good business outcomes.

In the case of Central Queensland and Southern Queensland and to a lesser degree The Northern Rivers, moderate yields resulted in business outcomes holding up better than in

Central New South Wales and Western Australia, even though count size was considerably lower.

In Figure 7 however the same data is illustrated and ranked by profits per hectare for the entire group which illustrates the range of key business outcomes achieved by participants in 2011-12.

Figure 6 Key Business Performance Outcomes for Participants – In Regions by EBITDA / Ha

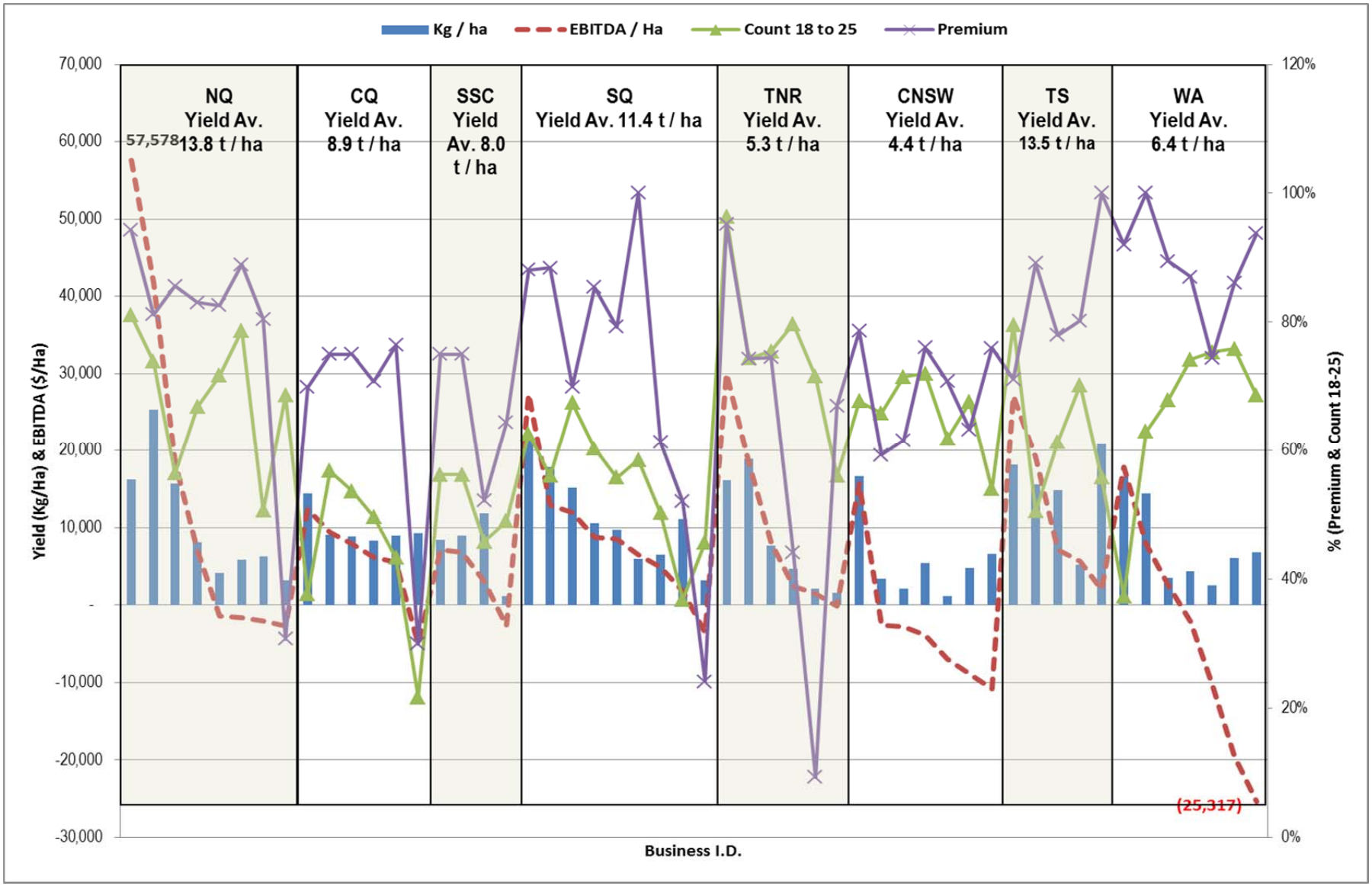
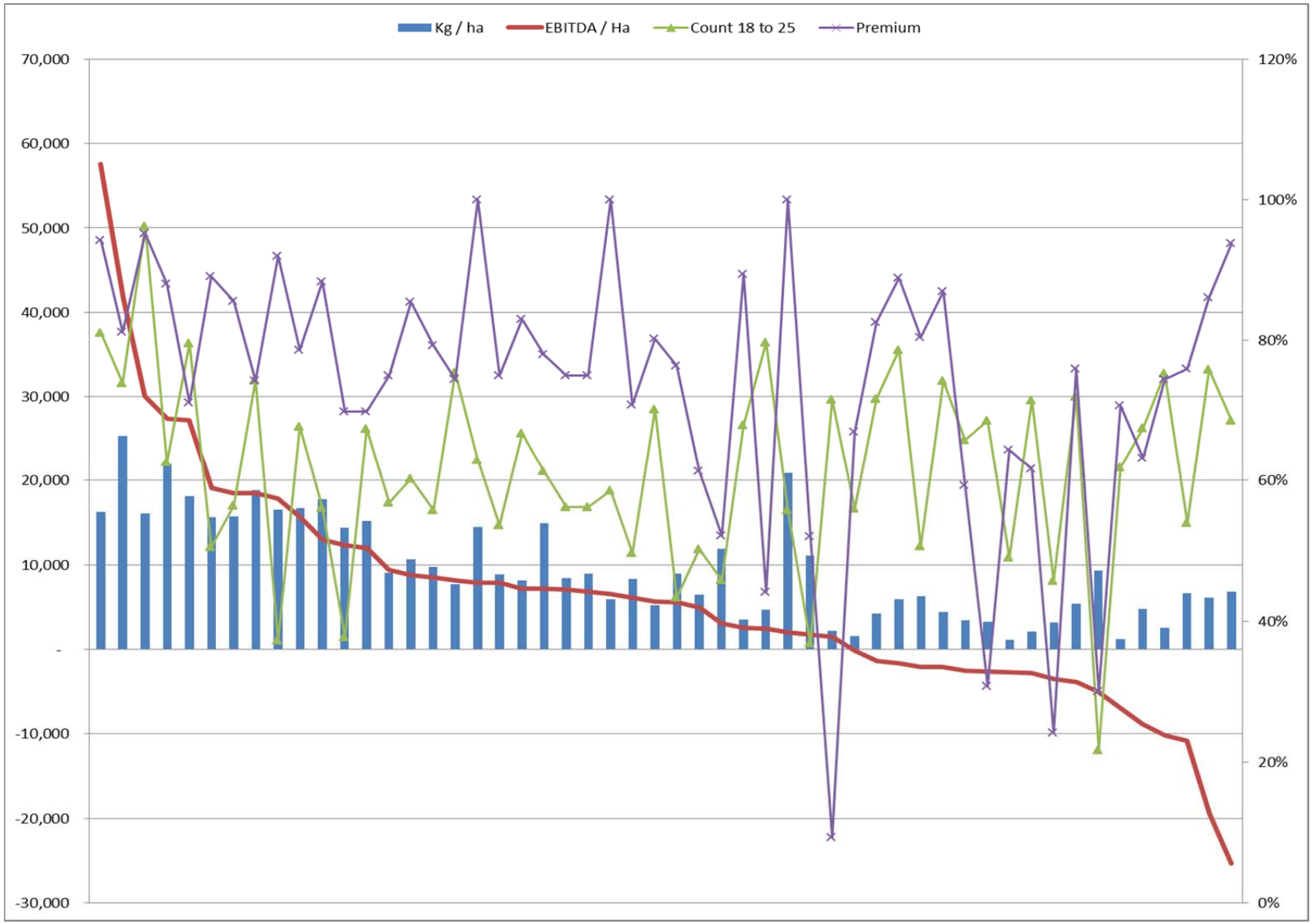


Figure 7 Key Business Performance Measures for Participants – Ranked by EBITDA / Ha



6.2.4 COST PROFILES

Per Producing Hectare

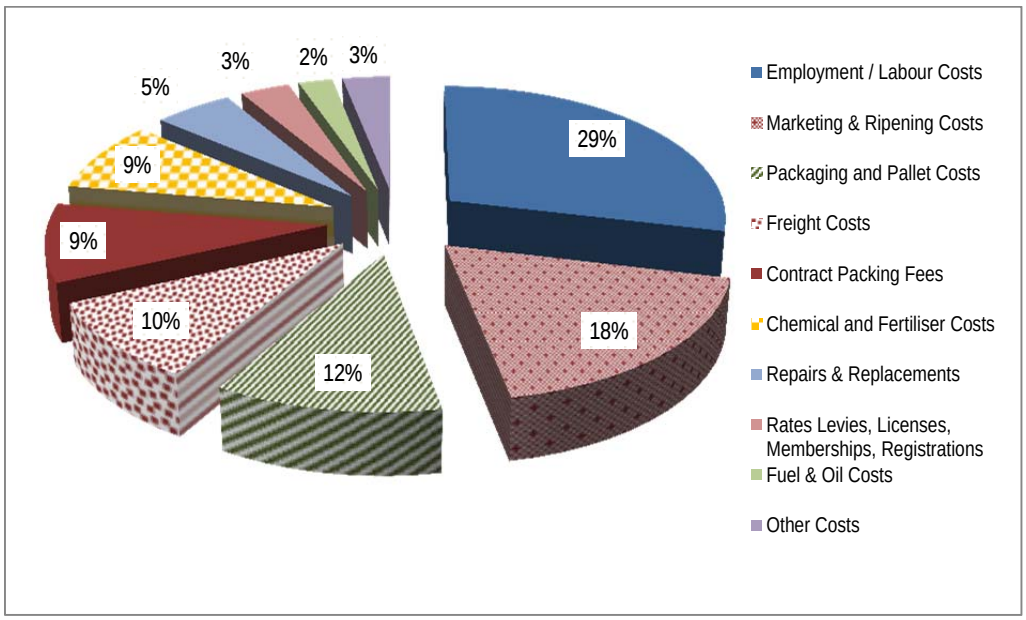
The average cost per producing hectare for the participant group in 2011-12 was $23,750 and average gross revenue per hectare was $31,436. As outlined in Table 10 and further illustrated in Figure 8, six (6) costs categories accounted for over 85% of the total costs per hectare, being:

- Employment costs,
- Marketing and ripening costs,
- Packaging, freight,
- Chemicals and fertilizers, and
- Contract packing fees.

Table 10 Average Operating Costs Per Producing Hectare

	TOTAL GROUP
Gross Revenue	$31,436.19
EBITDA	$7,676.66
Operating Costs	23,759.5
Employment / Labour Costs	6,826
Marketing & Ripening Costs	4,343
Packaging and Pallet Costs	2,739
Freight Costs	2,292
Contract Packing Fees	2,248
Chemical and Fertiliser Costs	2,024
Repairs & Replacements	1,238
Rates Levies, Licenses, Memberships, Registrations	774
Fuel & Oil Costs	534
Other Costs	742
Total Operating Costs	23,760

Figure 8 Major Costs as a % of Average Cost per Hectare



Per Tray Sold

The average cost incurred by participants on a **cost per tray basis** was $14.43 and the average gross revenue per tray was $19.09, as in Table 11. The top 7 cost categories account for 85% of the total costs as provided in Figure 9. In this analysis employment costs per tray (29% of costs) are separated into three sub-categories, being:

1. Fixed Employment Costs (growing, admin., marketing, pruning etc.) (16.6%)
2. Picking Labour (10.2%), and
3. Packing Labour (1.9%).

Figure 9 Costs Categories as a % of Average Cost per Tray Sold

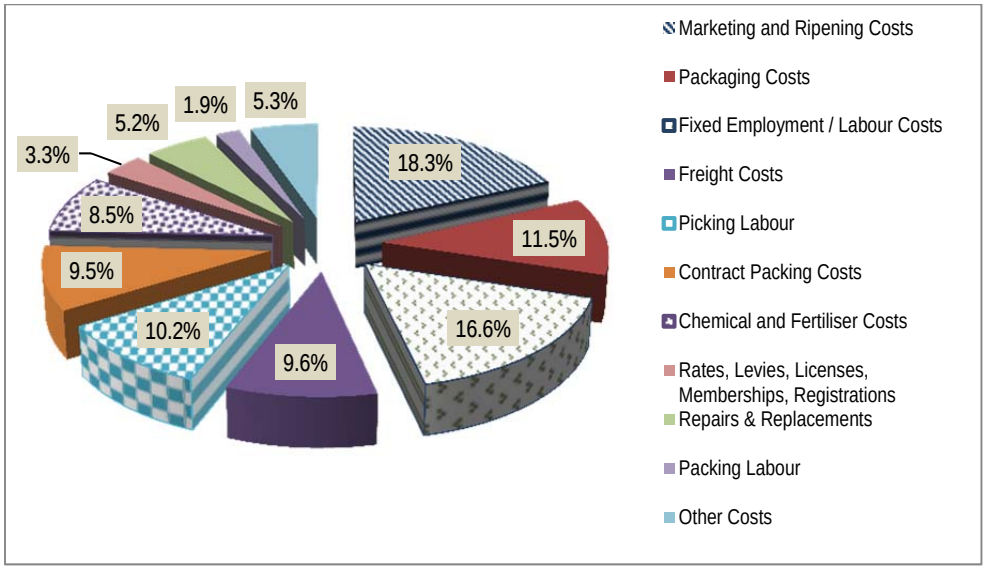


Table 11 Average Operating Costs per Tray Sold for Participants

	TOTAL GROUP
Gross Revenue	19.09
EBITDA	4.66
Operating Costs	14.43
Marketing and Ripening Costs	$2.64
Packaging Costs	$1.66
Fixed Employment / Labour Costs	$2.40
Freight Costs	$1.39
Picking Labour	$1.47
Contract Packing Costs	$1.37
Chemical and Fertiliser Costs	$1.23
Rates, Levies, Licenses, Memberships, Registrations	$0.47
Repairs & Replacements	$0.75
Packing Labour	$0.28
Other Costs	$0.77
TOTAL OPERATING COSTS	$14.43

Contract packing fees do in fact include substantial labour costs for those parties using contract packing houses. In the analysis the amounts included as contract packing fees have had the estimated costs associated with packaging, freight and marketing removed and reallocated to the relevant cost category.

As a result, the contract packing fees provided in all areas of this analysis are composed of labour costs and a margin (unknown) that will have been applied to those labour costs to cover utilities and overheads for the packing house. For example if average contracting packing fees per tray sold is $1.37 and packing houses, on average, apply a margin of say 20% to their labour costs to cover overheads and utilities (and a profit margin), then the remainder of the contract packing fee is 'in effect' packing labour (in this example = $1.14 / tray). If this were an accurate reflection of the labour component of contract packing fees, then total labour per tray sold would be similar to that outlined in Table 12

Table 12 Estimate of Labour Costs Per Tray Sold

Fixed Labour Costs / Tray Sold	$2.40
Picking Labour Costs / Tray Sold	$1.47
Packing Labour Costs / Tray Sold	$1.42
Total Labour Costs / Tray Sold	**$5.29.**

6.2.5 THE TOP 10 COMPARED TO THE GROUP

Costs and Returns Per Hectare

The Top 10 in the participating group are estimated to account for approximately 10% of the production of the industry in 2011-12. The Top 10 achieved almost double the average revenue per hectare of the entire group at $61,770 per hectare and their average costs per hectare were $33,851, 34% higher than the entire group, refer Table 13.

Table 13 Cost Profiles per Hectare for Total Group and Sub-Groups

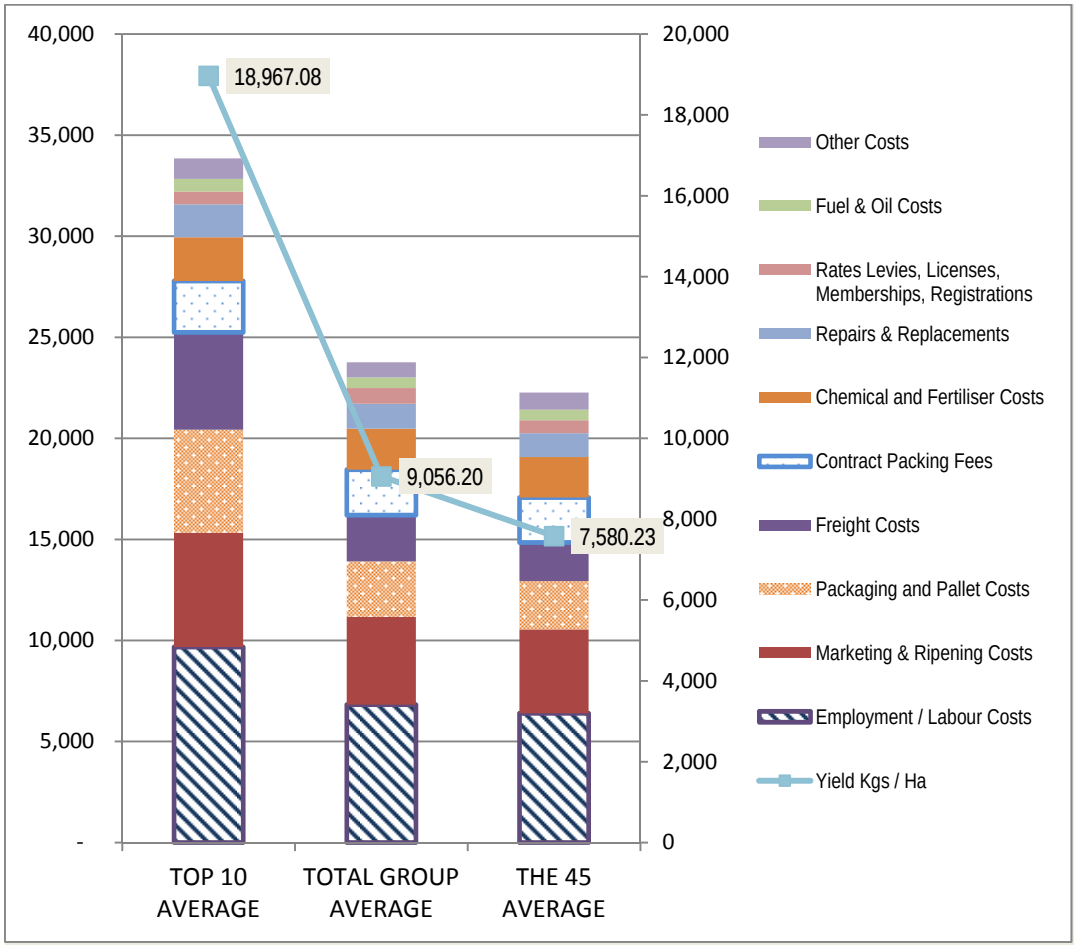
	TOP 10	TOTAL GROUP	'THE 45' [2]
Gross Revenue	$61,770.53	$31,436.19	$26,904.95
EBITDA	$27,919.03	$7,676.66	$4,635.87
Operating Costs	33,851.5	23,759.5	22,269.1
Employment / Labour Costs	9,674	6,826	6,400
Marketing & Ripening Costs	5,655	4,343	4,147
Packaging and Pallet Costs	5,102	2,739	2,386
Freight Costs	4,809	2,292	1,916
Contract Packing Fees	2,542	2,248	2,221
Chemical and Fertiliser Costs	2,163	2,024	2,004
Repairs & Replacements	1,637	1,238	1,178
Rates Levies, Licenses, Memberships, Registrations	632	774	646
Fuel & Oil Costs	623	534	521
Other Costs	1,015	742	850
Total Operating Costs	33,852	23,760	22,269

With this higher cost base, the average yield per hectare for the Top 10 was more than double that of the whole group and a notable 250%, or two and half times, the yield of the remainder of the group.

The difference between these groups is clearly illustrated in Figure 10. For the Top 10, the average total operating costs per hectare were 55% of gross revenue, whilst for the remainder of the group outside of the Top 10 operating costs accounted for 83% of gross revenue per hectare.

[2] 'The 45' means the remainder of the sample that did not achieve a place in the 'Top 10'

Figure 10 Major Operating Cost Categories per Hectare for Total Group and sub-Groups



Operating Costs and Returns Per Tray Sold

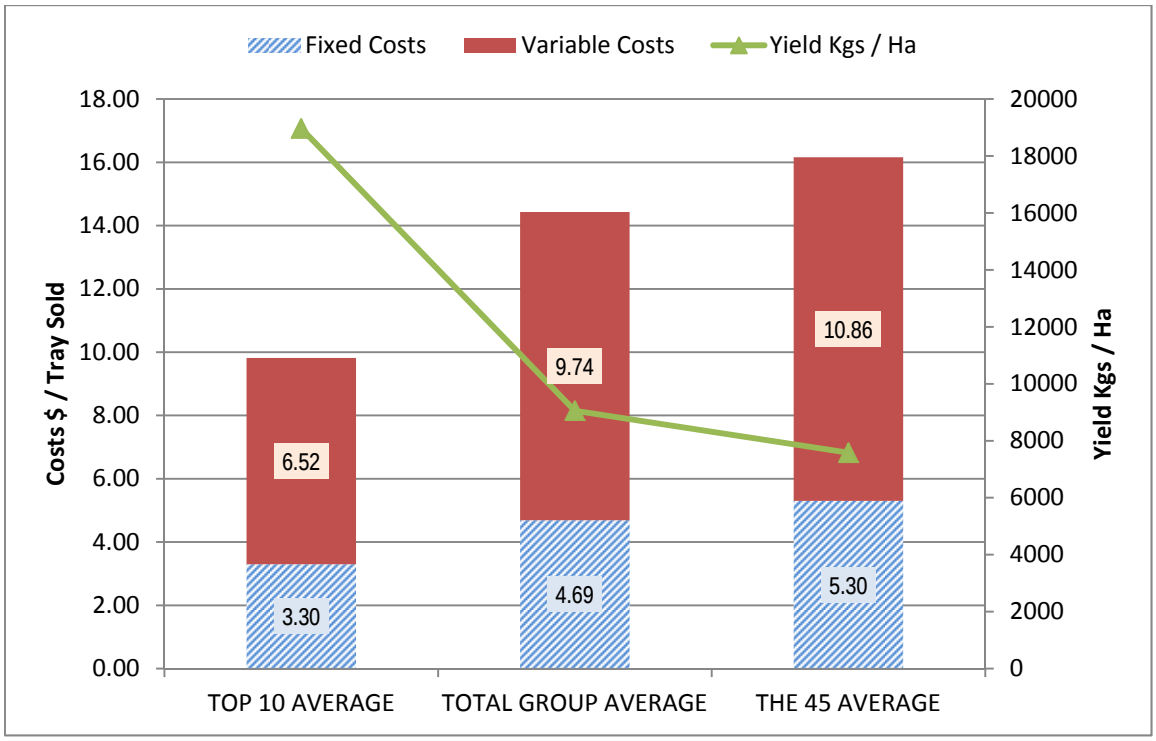
The Top 10 achieved an average gross return per tray of $17.91 per tray, lower than that achieved by the remainder ($19.52). Average costs as a % of gross revenue per tray was 55% and for the remainder average operating costs were 83% of gross revenue, as can be seen from information in Table 14 and Figure 11.

The analysis is not at this time able to take into account the differences that may exist between the Top 10 and the remainder as a group, regarding their relevant marketing windows and therefore the market conditions at time of sale.

Table 14 Operating Cost Profiles per Tray Sold for Total Group and Sub-Groups

	TOP 10	TOTAL GROUP	45
Gross Revenue	17.91	19.09	19.52
EBITDA	8.10	4.66	3.36
Operating Costs	9.82	14.43	16.16
Marketing and Ripening Costs	$1.64	$2.64	$3.01
Packaging Costs	$1.48	$1.66	$1.73
Employment / Labour Costs	$1.41	$2.40	$2.76
Freight Costs	$1.39	$1.39	$1.39
Picking Labour	$1.05	$1.47	$1.62
Contract Packing Costs	$0.74	$1.37	$1.61
Chemical and Fertiliser Costs	$0.63	$1.23	$1.45
Rates, Levies, Licenses, Memberships, Registrations	$0.47	$0.47	$0.47
Repairs & Replacements	$0.47	$0.75	$0.85
Packing Labour	$0.35	$0.28	$0.26
Other Costs	$0.37	$0.77	$1.01
TOTAL OPERATING COSTS	$9.82	$14.43	$16.16

Figure 11 Fixed and Variable Operating Costs per Tray Sold for Total Group and Sub-Groups



6.2.6 MANAGEMENT PRACTICES AND BUSINESS OUTCOMES

The participants were each asked a series of 36 questions regarding how they operated their businesses and how they managed various functions in their operation. These questions covered the topics of:

1. Labour Management
2. Marketing Practices
3. Irrigation Practices
4. Fertilizer Practices
5. Pest and Disease Control
6. Pruning Practices
7. Packing Strategy, and
8. Record Keeping.

An analysis of the responses of the Top 10 group and the remainder of the group focused on identifying those areas where some notable differences can be detected. There are not that many areas where material differences can be identified from this data that was collected for the single financial year 2011-12.

The information in Table 15 summarised the areas where some notable differences were detected from the responses given. To keep this in context, it is a comparison between a group of 10 producers (Top 10) and a group of 45 producers (the remainder), based on responses given in face to face interviews with the researchers. Some areas of the data collection and analysis may be enhanced in future rounds of collection by some refinement of questionnaire.

Table 15 Potential Areas of Variation in Management Practices 2011-12

Area of Farm and Management Practices	Discussion
Use of Contractors	• Top 10 used contractors more than the remainder ★★★
Internalised Marketing Decision Making	• Top 10 had marginally more internalized marketing decision making ★
Marketing Skills and Involvement	• Top 10 were marginally more involved in / consider themselves skilled in, marketing ★
Water Use Monitoring Method	• Top 10 were marginally more predisposed to using Tensiometers or Enviroscan for water monitoring ★
Frequency of Watering When Irrigating	• Top 10 watered significantly more frequently when they are irrigating (even though they report using marginally less water overall) ★★

Area of Farm and Management Practices	Discussion
Use of Soil (Nutrient) Analysis	• Top 10 – marginally fewer used soil testing for nutrient analysis ★
Use of Leaf (Nutrient) Analysis	• Top 10 marginally more used leaf analysis for nutrient testing ★★
N P K Applications	• Top 10 report used less NPK on average than the remainder • Top 10 report used slightly different ratios of NPK than the remainder, being N : P : K o Top 10: 4 : 1 : 3.1 o The 45: 3.3 : 1 : 3.3 ★
Applying Mulch to the Orchard	• Top 10 – fewer used mulch in the orchard ★
Treating for Phytophthora	• Top 10 – fewer used phytophthora treatment , or they use it less frequently ★
Use of Mechanical Pruning (Hedging)	• Top 10 Significantly more of Top10 used mechanical pruning (hedging) ★★
Use of Limb Removal (Canopy Management)	• Top 10 – more of Top 10 used Limb removal in orchard ★
Packing Strategy	• Top 10 – 73% of them packed their own fruit, significantly higher % than the remainder ★★
Use of Computerised Record Keeping	• Top 10 – Significantly more used computerized record keeping ★★★
LEGEND ★ ***Lowest degree of difference (< 50% difference in reported usage / adoption)*** ★★ ***Moderate degree of difference (50-100% reported difference)*** ★★★ ***Highest degree of difference (>100% reported difference)***	

A “strawman" model which defines the identified attributes of a 'Top 10' Performing Business is provided in Table 16.

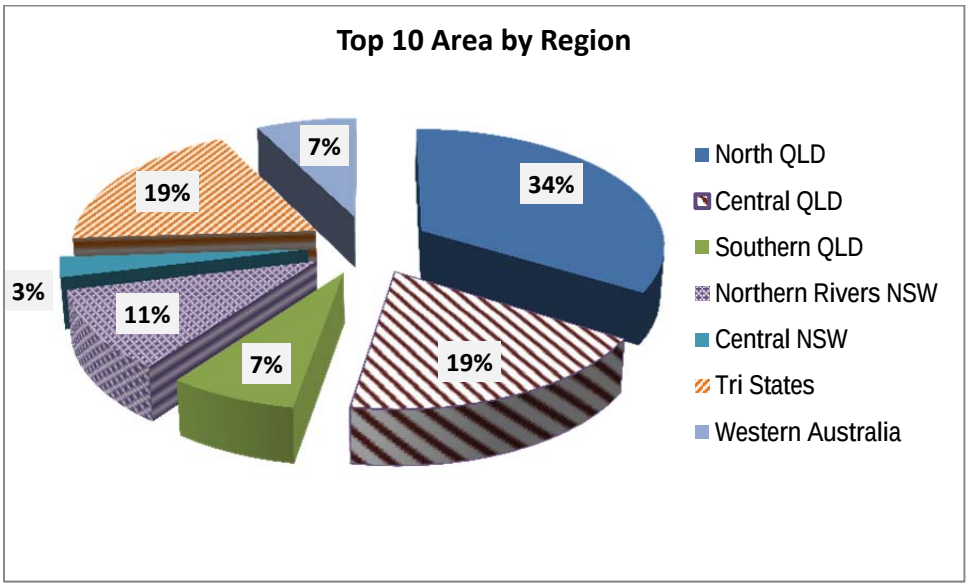
Table 16 "Strawman" Model of a Top 10 Participant (2011-12)

1. Produced approximately 18 Tonnes of market fruit per hectare (range 15 – 25 tonnes / ha)
2. Achieved around $18.50 gross revenue per tray before paying for marketing and ripening (Range $9 - $30 / tray)
3. Packed approximately 80% of the crop as Premium Grade and 65% in Size Counts 18 - 25
4. Had Total Costs of: • $35,000 per hectare of which approximately 36% were fixed costs (growing costs and overheads) and 64% were variable costs (used in picking, packing, shipping and marketing produce), and • $10.20 per tray sold (or $2,030 / tonne) sold of which 36% was fixed and 64% variable
5. Approximately 90% of their total costs were expended in the areas of: • Employment costs • Marketing and Ripening Costs • Freight • Chemicals and Fertilizers • Rates, Levies, Mamberships, Registrations • Repairs, Maintenance and Replacements
6. Employed approximately 1 FTE (Full Time Employee Equivalent) for every 5 hectares of producing orchard managed
7. Marketed a significant proportion of their crop either to brokers or large wholesaler / marketers that have programs in place with supermarkets (90%), or directly to supermarkets (10%)
8. Irrigated at least every two days, if not more frequently, during periods when irrigation was operating
9. Applied fertilizer to deliver on average: • 85 kg of N / hectare (Range 13 – 140) • 21 kg of P / hectare (Range 7 – 69) • 66 kg of K / hectare (Range 12 – 131)
10. Sprayed for pest and diseases on average no more frequently than monthly (less frequently in winter)
11. May have mounds in the orchard (30% did) and may have used mulch in the orchard (40% did)
12. May have treated for phytophthora (50% did) and if they did so (needle or foliar spray) probably did it once
13. Lost no more than 5% of trees due phytophthora in the last 3 years and lost significantly less from other causes
14. Used mechanical hedging and probably treated at least 50% of the orchard (30%, treated 100%, 20% treated 50%, 20% treated 25%)
15. Used canopy management / limb removal and are likely to have treated at least 50% of the orchard (50% treated all the orchard, 40% treated half the orchard and 10% treated 25% of the orchard), and
16. Either packed in house (70%) or used a contract packing house (30%)

6.3Results - Top 10 Performing Businesses

The Top 10 group include operations in every region other that the Sunshine Coast. The Top 10 managed 290 hectares of producing orchards and that producing area was distributed across regions as provided in Figure 12.

Figure 12 Top 10 – Producing Area In Regions



The Top 10 (as measured by Profit [EBITDA] per Producing Hectare) accounted for 13% of the total producing area managed by the benchmarking group in 2011-12. As will be evident in following sections, the top 10 sub group reported significantly greater yield per hectare than the rest of the group (herein called 'The 45').

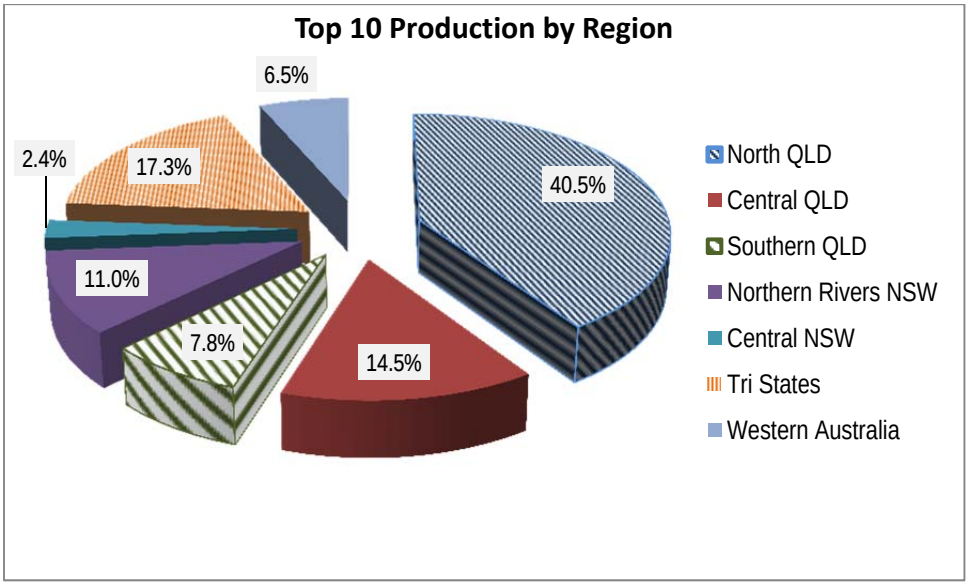
With just 13% of the producing area the Top 10 produced 28% of the total production (tonnes of market fruit), as illustrated in Table 17.

Table 17 Top 10 - Proportion of Total Group (Area and Production)

	TOP 10	THE 45	TOTAL GROUP
Hectares	290	1,930	2,220
% of Producing Area	13%	87%	100%
Tonnes	5,481	14,666	20,147
% of Production	28%	72%	100%

The distribution of production volume from the Top 10 across the growing regions was distributed as outlined in Figure 13.

Figure 13 Top 10 – Production Volume in Growing Regions



In later sections of this analysis the participant group is also considered in the context of three zones of avocado production. The zones are Northern Zone (North QLD and Central QLD), Central Zone (Sunshine Coast, Southern QLD and The Northern Rivers), and Southern Zone (Central NSW, Tri States and Western Australia. The distribution of production area and production volume across these three zones for the Top 10 performing businesses is outlined in Table 18.

Table 18 Top 10 Area and Production in Zones

	Producing Area (Top 10)	Production Volume (Top 10)
Northern Zone (17 deg. S to 25 deg. S)	53%	55%
Central Zone (25 deg. S to 29 deg. S)	18%	19%
Southern Zone (29 deg. S to 34 deg.S)	29%	26%

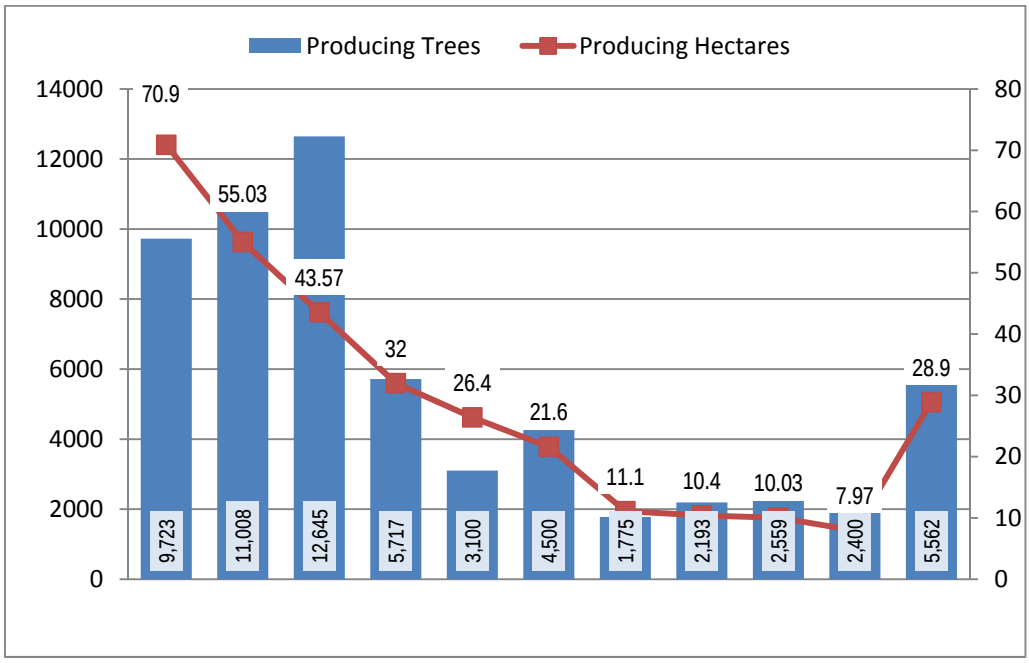
6.3.1 SCALE ATTRIBUTES

The Top 10 include large operators as well as smaller businesses as provided in Table 19 (and Figure 14). The largest operation in the Top 10 managed over 70 producing hectares in 2011-12 and the smallest managed 8 hectares.

Table 19 Top 10 - Range of Operations (Scale)

	Unit	Group High	Group Average	Group Low	Median
Total Producing Trees	Trees	12,645	5,562	1,775	3,800
Total Producing Hectares	Ha	71	29	8	24
Producing Trees / Hectare	Trees / Ha	301	196	117	204
Approximate Tree and Row Spacings		7 X 5	8 X 6	10 X 8.5	8 X 6

Figure 14 Top 10 - Range of Operations (Scale)



6.3.2 KEY PERFORMANCE MEASURES

Within the Top 10 group there is a notable range of both profits (EBITDA) per hectare and yield per hectare as provided in Table 20.

The Top 10 averaged $31,500 of EBITDA (Profit before paying for Tax, Interest, and Depreciation / Amortisation) per producing hectare, from an average yield of 18,000 Kgs per hectare (18 t / ha), as provided in Table 21. For the Top 10, operating costs (not including interest and depreciation) accounted for 53% of gross revenue received.

This measure does not include any costs associated with servicing debt, reducing value / replacement of plant and equipment or providing for any return on funds invested.

Table 20 Top 10 – Range of Profits and Yield per Producing Hectare

	MAX	AVE	MIN	MEDIAN
EBITDA $ / Ha	57,577	25,028	12,371	18,782
Yield Kgs / Ha	25,295	18,157	14,408	17,243.735

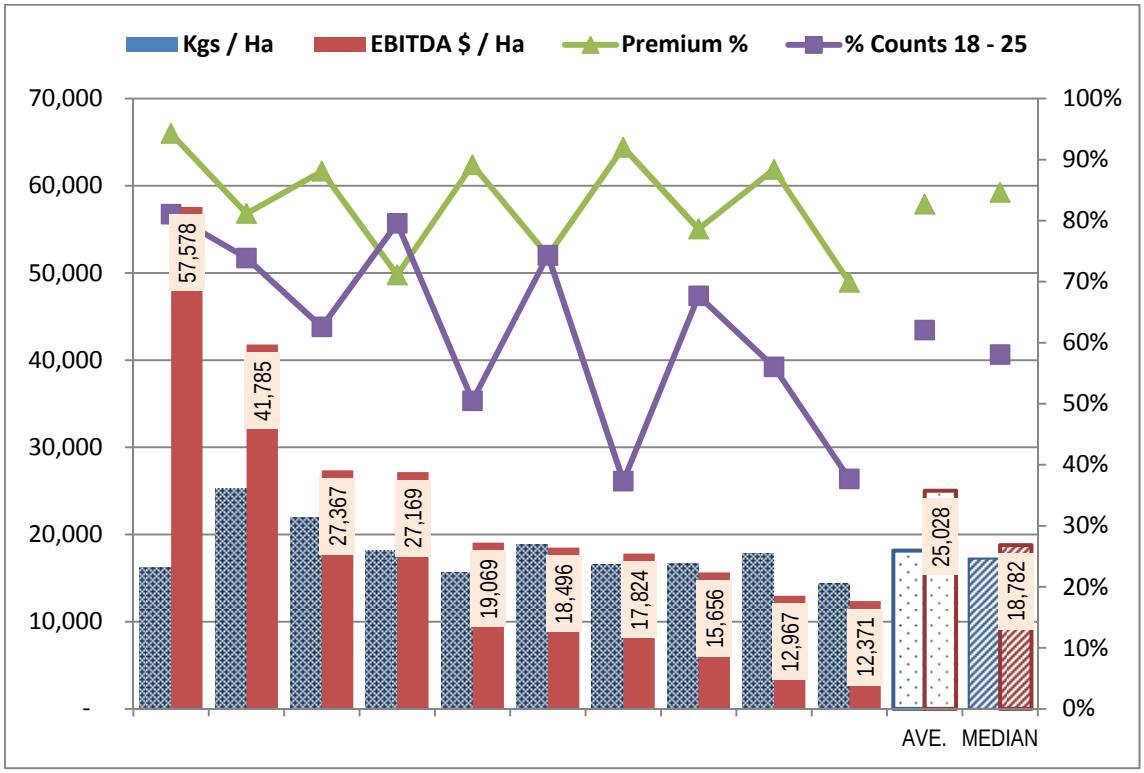
The Top 10 also achieved an average of 83% pack out to Premium Grade and 63% of their produce on average was packed into sizes 18 to 25. The Top 10 businesses were located in 7 out of the eight growing regions, in a year when growing conditions varied greatly between regions. Eight (8) out of the ten (10) top performers were family operated businesses and 9 were single farm operations.

The average results for key performance measures amongst the Top 10 are provided in Table 21, and also graphically in Figure 15.

Table 21 Top 10 – Key Performance Measures

Rank	Kgs / Ha	EBITDA $ / Ha	Premium %	% Counts 18 – 25
1	16,248	57,578	94%	81%
2	25,295	41,785	81%	74%
3	21,983	27,367	88%	63%
4	18,117	27,169	71%	80%
5	15,626	19,069	89%	50%
6	18,865	18,496	74%	74%
7	16,539	17,824	92%	37%
8	16,690	15,656	79%	68%
9	17,798	12,967	88%	56%
10	14,408	12,371	70%	38%
AVE	18,157	25,028	83%	62%
MEDIAN	17,244	18,782	85%	58%

Figure 15 Top 10 – Key Performance Measures



6.3.3 LABOUR USE EFFICIENCY

. The Top 10 performing businesses employed one FTE for every 4.76 hectares of producing orchard. In comparison the average number of producing hectares managed and operated per each Full Time Employee Equivalent (FTE) for the whole participant group was 7.14 hectares

This measure and the related measures provided in Table 22, include all labour used on the farm including picking and packing labour. Given that the Top 10 produced an average of 18 tonnes per producing hectare, this finding indicates that high volume crops deliver the best financial performance, and, are labour intensive. As will become evident in following sections profitability per hectare is the strongest when high yields are achieved, regardless of the increased labour intensity required.

Table 22 Top 10 – Key Labour Use Statistics

	HIGH	AVE	LOW	MEDIAN
FTEs Employed	14.89	5.60	1.43	5.02
Ha / FTE	9.09	4.76	2.50	4.76
EBITDA / FTE	307,082	132,729	39,435	123,307

6.3.4 KEY COSTS

Per Producing Hectare

The average for each of the key cost areas for the Top 10 is provided in Table 23.

On the average Top 10 Farm costs incurred per hectare in employment, marketing and ripening, packaging and freight costs account for 71% of the total costs incurred. Chemicals and fertilizers, contract packing fees, rates, levies, memberships and registrations and repairs and replacements account for a further 20% of total costs.

Table 23 Top 10 - Key Operating Cost Categories Per Producing Hectare

	TOP 10	% of Total Costs / Ha	Cumulative % of Total Costs / ha
Employment / Labour Costs	9,674	29%	29%
Marketing & Ripening Costs	5,655	17%	45%
Packaging and Pallet Costs	5,102	15%	60%
Freight Costs	4,809	14%	75%
Contract Packing Fees	2,542	8%	82%
Chemical and Fertiliser Costs	2,163	6%	88%
Repairs & Replacements	1,637	5%	93%
Rates Levies, Licenses, Memberships, Registrations	632	2%	95%
Fuel & Oil Costs	623	2%	97%
Other Costs	1,015	3%	100%
Total Operating Costs	33,852		

In the following section the total operating costs incurred, on a per tray sold basis, is also separated into a Fixed Cost component, and Variable Cost component

Per Tray Equivalent (5.5 Kg) Sold

The resulting cost profile for these high yielding, high profitability farms on a 'per tray sold' basis is not dissimilar to what is reflected on a 'per producing hectare' basis, as in Table 24.

However in this analysis the labour component of costs has been separated into:

1. Fixed Labour Costs (labour used in general farm work, pruning, administration, marketing and all other labour costs not directly incurred in harvesting and packing the crop), and

2. Variable Labour Costs (labour costs incurred in picking and packing the crop)

When differentiated into fixed labour, picking labour and packing labour, these three cost categories still remain part of the highest eleven (11) cost items per tray sold.

Table 24 Top 10 - Key Operating Cost Categories Per Tray Equivalent Sold

	TOP 10	% of Total Costs per Tray Sold	Cumulative % of Total Costs per Tray Sold
Marketing and Ripening Costs	$1.64	17%	17%
Packaging Costs	$1.48	15%	32%
Fixed Employment / Labour Costs	$1.41	14%	46%
Freight Costs	$1.39	14%	60%
Picking Labour	$0.87	9%	69%
Contract Packing Costs	$0.74	8%	77%
Chemical and Fertiliser Costs	$0.63	6%	83%
Rates, Levies, Licenses, Memberships, Registrations	$0.47	5%	88%
Repairs & Replacements	$0.47	5%	93%
Packing Labour	$0.35	4%	96%
Other Costs	$0.37	4%	100%
TOTAL OPERATING COSTS	$9.82	100%	

The separation of 'per tray sold' costs into fixed and variable has also been undertaken for all other major cost items. The Variable Operating Costs (also called To Market Costs in grower reports and other areas of the analysis papers) per tray sold and the Fixed Operating Costs are defined in Figure 16

Figure 16 Fixed and Variable Operating Costs

Variable Operating Costs	**Picking Labour Costs** **Packing Labour Costs** **Contract Packing Fees Costs** **Packaging Costs** **Marketing and Ripening Costs** **Power and Gas Costs** **Freight Costs**
Growing & Overhead (Fixed) Operating Costs	**All other operating costs**

Using the above differentiation, the Top 10 had an average of 34% of their costs as fixed costs and 66% as variable costs (only incurred by picking, packing, shipping and marketing the fruit) as in Table 25.

The Top 10 averaged 18 tonnes of market fruit per producing hectare and this has had a major impact in amortising the fixed cost component across a greater volume of produce sold.

Table 25 Top 10 – Fixed and Variable Costs

	Costs / Tray Sold	Costs / Tonne Sold	% of Total Costs / Tray
Fixed	3.35	609	34%
Variable	6.47	1,176	66%
Total	9.82	1,785	100%

6.3.5 FARM AND MANAGEMENT PRACTICES

Table 26 summarises the responses received from the Top 10 about the various farm and management practices performed on farm and in the operation of their avocado growing businesses. The key points arising from these responses are summarised in Table 26.

Table 26 Top 10 - Summary of Farm and Management Practices

Labour Sources	• 39% Dependent on backpacker / international labour (European Ethnicity 27%, Asian Ethnicity 9%) • 70% of labour is sourced via referral from others or 'walk up' to farm
Marketing Channels	• 9% of produce sold direct to supermarkets, 89% sold via brokers or wholesalers • A significant portion of all sales made via brokers and wholesalers are in fact going direct to supermarkets, much of it direct shipped to DCs • In the avocado industry there are two groups of businesses that act as 'brokers' and/or 'wholesalers' that on-ship much of their produce directly supermarkets, as well as other wholesalers, exporters etc. namely: o Some major marketers / wholesalers Viz. Fresh Exchange, Lamanna Group, Murray Brothers and numerous others), and o Privately owned and / or cooperatively owned contract packing houses that take all of the crop from suppliers / members and then on-ship to supermarkets, and also wholesalers and some exporters (viz. SunFresh, Natures Fruit Company, Sunny Spot, I & A Tolson and numerous similar operations). • The proportion of produce sold directly to supermarkets is therefore difficult to assess with current data held.

Marketing Process	• 50% consider that the primary decisions about distribution of produce to market segments / channels are made by them internally • 50% consider that the decisions about distribution to segments / channels is made by brokers and wholesalers on their behalf • 80% of Top 10 communicate with their primary clients / marketing partners weekly or more frequently than weekly • 40% of Top 10 consider that they have a high degree of skill and involvement in the marketing of their produce, remainder suggest low or medium levels of skill / involvement in marketing
Irrigation Practices	• 90% use micro / under tree sprinklers, 10% (1) uses drip tape • Irrigation monitoring carried out by visual monitoring (40%), Tensiometers (40%) and Enviroscan (20%) • 90% of Top 10 irrigate at least twice daily – • Two or more times per day (10%), daily (30%), every 2 days (40%) • Average ML / Ha / annum applied by Top 10 is 6.85 ML / ha / annum (15Ml highest, 1.8 Ml lowest)
Fertilizer Practices	• 90% of Top 10 use leaf analysis and 60% use soil testing, for nutrient monitoring, the majority do both • Fertigation (50%)and solid application (50%) are predominant fertilizer methods • Average Applications for Top 10: o N – 85 kg / ha / annum o P – 21 kg / ha / annum o K – 66 kg / ha / annum • Highest Applications for Top 10: o N – 140 kg / ha / annum o P – 69 kg / ha / annum o K – 131 kg / ha / annum
Pest and Disease Control	• Insect and disease spray intervals in summer predominantly of once per month or less frequent • Insect and disease spray intervals in winter predominantly less frequently than once per month • Only 30% of Top 10 use mounding as part of pest and disease (Phytophthora) management strategy • 40% apply mulch to root zones yearly, remainder don't use mulch • 50% of Top 10 apply treatment for Phytophthora (needle or foliar spray) • 70% of Top 20 lost up to 5% of trees due to Phytophthora in the last 3 years, 30% reported no losses

Pruning Practices	• **Mechanical Pruning (Hedging)** All of the Top 10 report using mechanical pruning, 30% treating all of the orchard each year, 20% treating half of their orchard per year and 30% treat quarter of their orchard per year • **Limb Removal/ Internal Pruning** All of Top 10 use limb removal / internal pruning / canopy management, 50% treating all of their orchard every year, 40% treating half of their orchard per year and 10% treating quarter of their orchard per year
Packing Strategy	• 70% of Top 10 pack their own fruit in-house • 30% of Top 10 use contract packers
Record Keeping	• 50% of the Top 10 retain computerized records for farm practices including spray diaries, irrigation applications, harvest records and pack out records, remainder written records • 70% of Top 10 rely on written records for labour / payroll records

6.3.6 "STRAWMAN" TOP 10 PRODUCER (2011-12 PARTICIPANT GROUP)

Figure 17 'Strawman' To 10 Producer (2011-12 Participant Group)

1. Produced approximately 18 Tonnes of market fruit per hectare (range 15 – 25 tonnes / ha)
2. Achieved around $18.50 gross revenue per tray before paying for marketing and ripening (Range $9 - $30 / tray)
3. Packed approximately 80% of the crop as Premium Grade and 65% in Size Counts 18 - 25
4. Had Total Costs of: • $35,000 per hectare of which approximately 36% were fixed costs (growing costs and overheads) and 64% were variable costs (used in picking, packing, shipping and marketing produce), and • $10.20 per tray sold (or $2,030 / tonne) sold of which 36% was fixed and 64% variable
5. Approximately 90% of their total costs were expended in the areas of: • Employment costs • Marketing and Ripening Costs • Freight • Chemicals and Fertilizers • Rates, Levies, Mamberships, Registrations • Repairs, Maintenance and Replacements
6. Employed approximately 1 FTE (Full Time Employee Equivalent) for every 5 hectares of producing orchard managed
7. Marketed a significant proportion of their crop either to brokers or large wholesaler / marketers that have programs in place with supermarkets (90%), or directly to supermarkets (10%)
8. Irrigated at least every two days, if not more frequently, during periods when irrigation was operating
9. Applied fertilizer to deliver on average: • 85 kg of N / hectare (Range 13 – 140) • 21 kg of P / hectare (Range 7 – 69) • 66 kg of K / hectare (Range 12 – 131)
10. Sprayed for pest and diseases on average no more frequently than monthly (less frequently in winter)
11. May have mounds in the orchard (30% did) and may have used mulch in the orchard (40% did)
12. May have treated for phytophthora (50% did) and if they did so (needle or foliar spray) probably did it once
13. Lost no more than 5% of trees due phytophthora in the last 3 years and lost significantly less from other causes
14. Used mechanical hedging and probably treated at least 50% of the orchard (30%, treated 100%, 20% treated 50%, 20% treated 25%)
15. Used canopy management / limb removal and are likely to have treated at least 50% of the orchard (50% treated all the orchard, 40% treated half the orchard and 10% treated 25% of the orchard), and
16. Either packed in house (70%) or used a contract packing house (30%)

'Strawman' Concept Model: An initial draft outline of a subject which is expected to be modified by others and by ongoing collection of data and input.

6.4Results – Whole Group and In Zones

6.4.1 STRUCTURE OF THIS SECTION

The participant group consists of fifty five businesses in an industry that is thought to contain upwards of564 growers across Australia. This sample is also distributed across eight growing regions, as defined by the industry peak body, Avocados Australia Limited.

Information has been collected and analysed from avocado producing businesses across all eight regions. Information is now collated and stored in the data base in a manner that enables analysis by region, size of business (four size categories have been defined) and also is able to be analysed on any other basis that may be devised that is supported by the nature and quantity of the data. One such additional differentiation that has been applied to the data in this analysis is an analysis by Zone.

Three zones have been defined, being:

1. **Northern Zone:** Including the growing regions of North Queensland and Central Queensland (cut off latitude Childers Post Office 25.24^{o} South).
2. **Central Zone**: Including the growing regions of Sunshine Coast, Southern Queensland and The Northern Rivers of NSW (cut off latitude Grafton Post Office 29.68^{o} South).
3. **Southern Zone**: Including the growing regions of Central New South Wales, Tri States and Western Australia, and all of the Australian territory south of latitude Grafton NSW (29.68^{o})

By considering the industry in regions we have been able to consider three sub groups of participant businesses each of which have between 14 and 21 participants with total producing area in each region being between 400 producing hectares and 1,100 producing hectares (see Table 27).

Table 27 Distribution of Participant Businesses Across Three Zones

	Number of Participants	Producing Area (Top 10)	Average Producing Area	Production Volume (Top 10)
Northern Zone	14	1,123 ha	80 ha	3,015 t
Central Zone	20	420 ha	20 ha	1,030 t
Southern Zone	21	680 ha	31 ha	1,436 t
TOTAL	**55**	**2,223 ha**	**40 ha**	**5,481**

In this Section the analysis of the data from the entire participant group is presented for the Whole Group and by Zone.

In the Appendices (Section 12.1 Detailed Results Graphs) a series of graphs provide more detailed breakdown of the collated results, on a region by region basis and also across four different size categories:

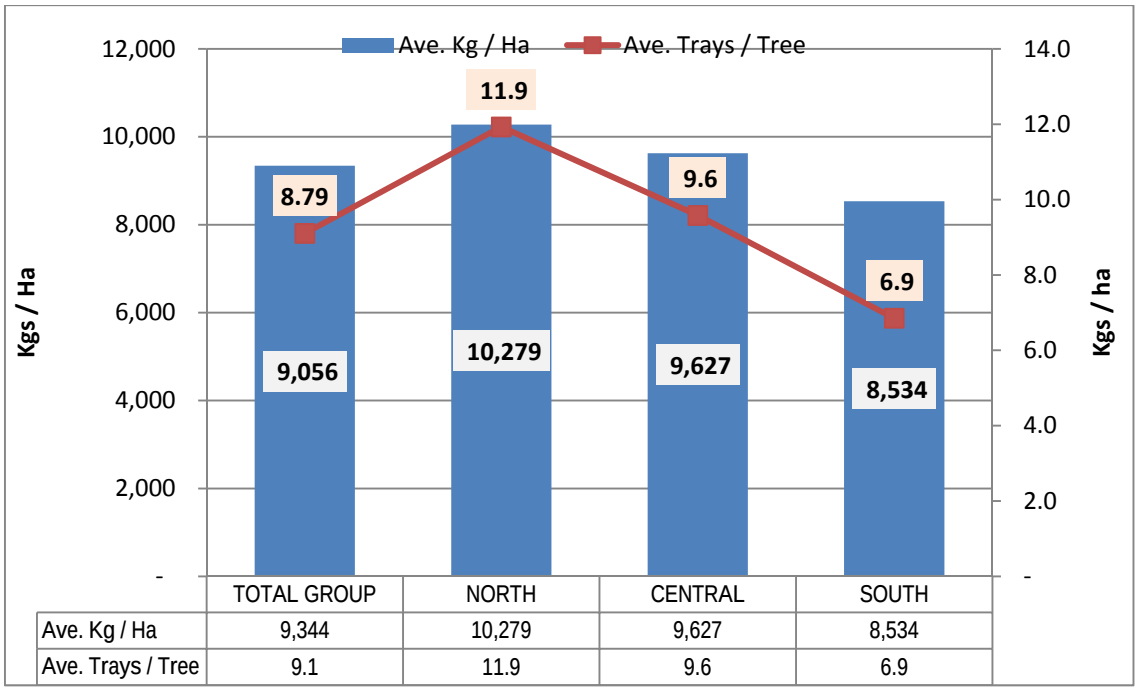
1. Businesses with 0.1 to 10 producing hectares,
2. Businesses with10.1 to 20 producing hectares,
3. Businesses with 20.1 to 50 producing hectares, and
4. Businesses with more than 50 producing hectares.

Commentary is provided in this current section that summarises key trends that are notable between regions and between different sized businesses.

6.4.2 PRODUCTION PER PRODUCING HECTARE AND PER PRODUCING TREE

The entire group achieved an average yield of 9,056 kgs per producing hectare and 8.79 trays / producing tree (see Figure 18). In this financial year (2011-12) the Northern Zone recorded the highest yield outcomes. Both Central and South zones were impacted by significant constraints to yield.

Figure 18 Yield Per Producing Hectare and Per Producing Tree



	TOTAL GROUP	NORTH	CENTRAL	SOUTH
Ave. Kg / Ha	9,344	10,279	9,627	8,534
Ave. Trays / Tree	9.1	11.9	9.6	6.9

The highest yield results were achieved in North Queensland and in the Tri States region.

Many Central NSW participants had poor yields for the second year in a row and there is debate underway about what may be affecting yields in this region. Concurrently however, one participant in the Central NSW region achieved exceptional yields (approximately 16 tonnes / ha) and has achieved consistent high yields for several years. That participant believes his success is related to his identification and treatment of an insect pest that can severely impact yields if not treated and is also difficult to identify in the orchard, Citrus Blossom Bug (*Austropeplus* sp.).

Highest yields we reported amongst participants that grew between 20 and 50 hectares of avocados in this year financial (2011-12). Larger growers and growers with 10 to 20 hectares of production also reported mid-rage yields.

Table 28 Yield per Hectare in Regions and Size Categories

RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Yield	kg / ha	13,791.00	8,888.00	8,005.00	11,433.00	5,293.00	4,366.00	13,536.00	6,441.00
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Yield	kg / ha	7,535.00		8,601.00		10,084.00		8,932.00	

On a Tray per Tree basis best yields were also reported in North Queensland with Central NSW and Western Australia reporting lowest yields per tree. North Queensland, Southern Queensland and Tri States all reported good yield outcomes.

The best yields per tree were reported by participants with more than 50 hectares of production. Followed by those with 20 to 50 hectares or producing orchard.

Table 29 Yield per Tree in Regions and Size Categories

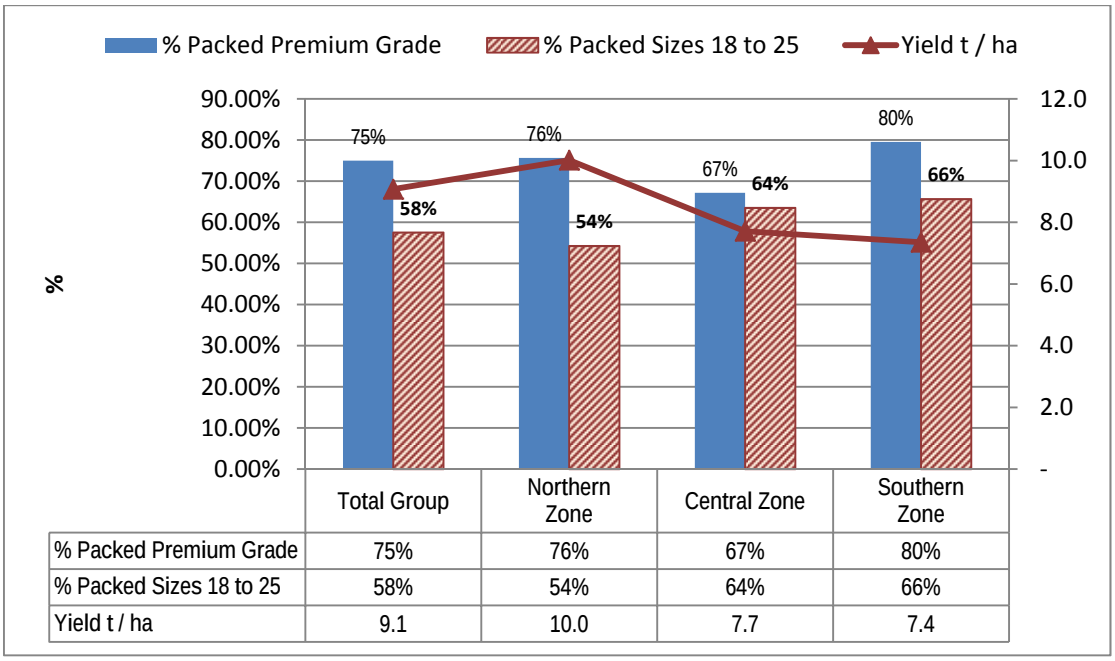
RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Yield	Trays / tree	17.88	8.75	7.35	11.86	7.92	3.96	11.18	3.47
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Yield	Trays / tree	6.59		7.80		8.65		9.24	

6.4.3 QUALITY AND PACK OUT PERFORMANCE

The entire participant group reported an average 75% packed to premium grade in financial year 2011-12 and 58% packed into sizes 18 to 25. The Central zone experienced the lowest pack out to premium grade, primary causes being noted as adverse seasonal conditions and notable wet periods, refer to Figure 19 Pack Out Results in Zones.

The Northern Zone achieved the lowest outcome in terms of pack out to sizes 18 to 25. This was particularly discussed by participants in Central Queensland that experienced a large volume of small fruit.

Figure 19 Pack Out Results in Zones (% Premium & % 18 - 25)



The variation in pack out rates to premium grade between regions and size categories is provided in Table 30. Western Australian participants reported an excellent 92% packed to premium, followed by North Queensland with 82%. Mid-sized producers reported the best outcomes in pack out to sizes 18 to 25, refer to Table 31.

Table 30 Pack Out to Premium in Regions and Size Categories

RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Premium	%	82.00	73.00	64.00	79.00	54.00	62.00	78.00	92.00
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Premium	%	69.00		79.00		78.00		74.00	

Table 31 Pack Out to Sizes 18-25 in Regions and Size Categories

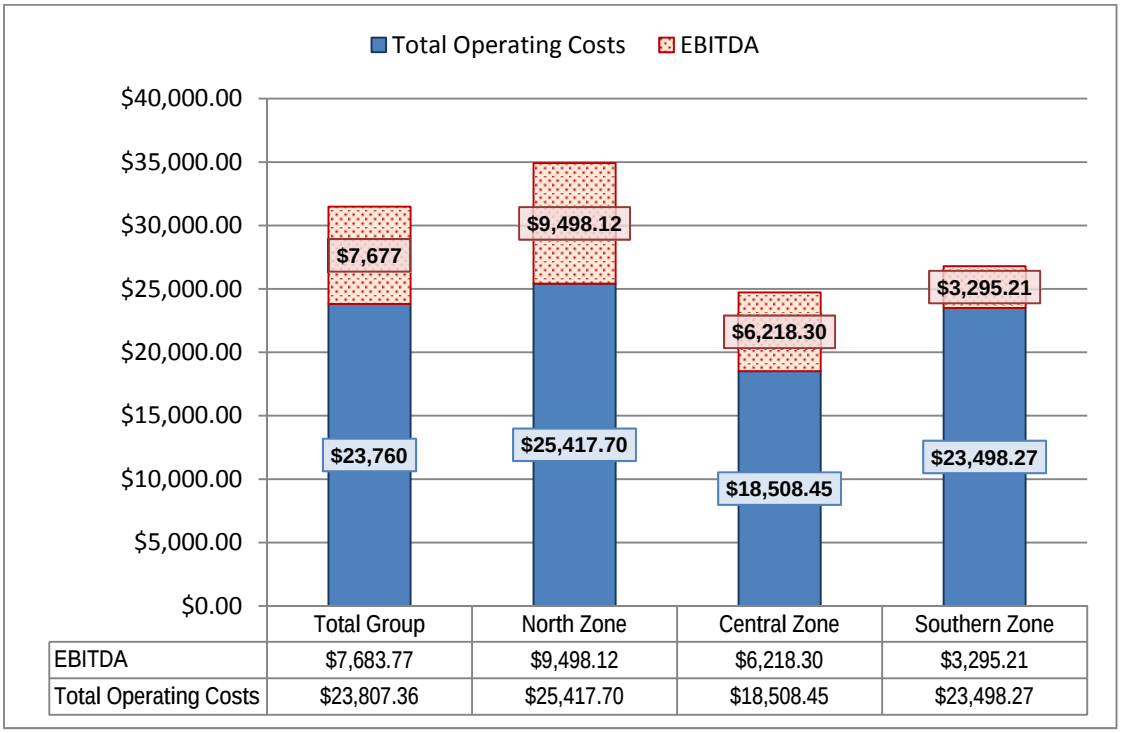
RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Size 18 - 25	%	70.00	47.00	51.00	60.00	73.00	67.00	71.00	59.00
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Size 18 - 25	%	59.00		60.00		67.00		54.00	

6.4.4 FINANCIAL PER PRODUCING HECTARE

In the 2011- 2012 financial year the Northern Zone reported high yields and achieved the highest average profit per hectare. The Northern Zone also reported the highest level of operating costs per hectare, as in Figure 20 . This may be reflecting a phenomenon that has been observed in other horticultural industries, that a higher commitment to inputs and costs is likely to deliver better outcomes.

Having commented as above, a closer analysis does indicate the importance of achieving high yields in this crop. Further analysis (following) also identifies the very real benefit of achieving a high yield and by doing so amortising the "fixed costs' of growing, protecting and managing the crop across a high volume of throughput.

Figure 20 Operating Costs and Profitability Per Hectare



	Total Group	North Zone	Central Zone	Southern Zone
EBITDA	$7,683.77	$9,498.12	$6,218.30	$3,295.21
Total Operating Costs	$23,807.36	$25,417.70	$18,508.45	$23,498.27

At the regional level, southern Queensland reported the lowest operating costs per hectare. Similarly growers managing 10 to 20 hectares also reported highest costs per hectare. A closer analysis does show that the average producing area per participant in the Central Zone is the lowest of the regions, being 20 hectares. Further to that additional data collection over multiple years may enable conclusions to be reached about the operational efficiency of operations that are larger than true 'owner operator' size, having to employ significant personnel and at the same time not having large enough scale to realise optimum scale economies. Refer to Table 32.

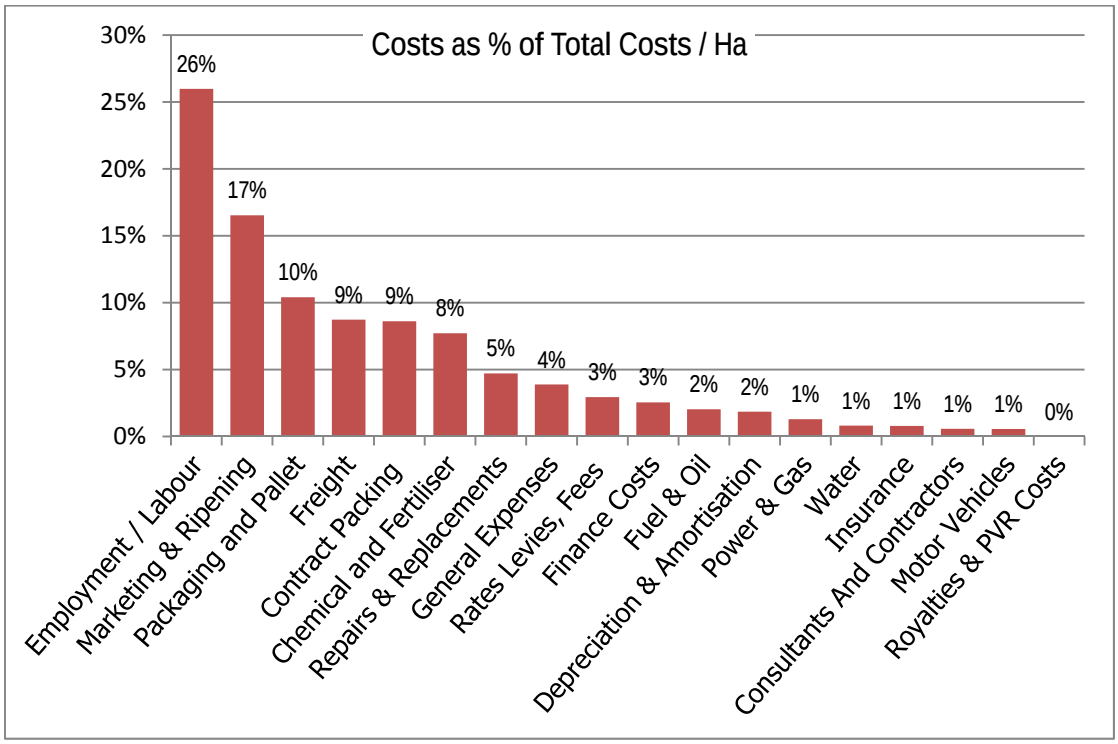
Table 32 Operating Costs per Hectare in Regions and Size Categories

RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Oper. Costs	$ / ha	25,014.00	25,538.00	21,492.00	27,832.00	11,985.00	19,306.00	28,711.00	24,400.00
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Oper. Costs	$ / ha	25,378.00		26,556.00		25,448.00		22,695.00	

The average cost profile per hectare, as illustrated in Figure 21 also demonstrates that 85% of all costs per hectare for the entire group are expended on (in order):

1. Employment
2. Marketing and Ripening
3. Packaging
4. Freight
5. Contract Packing Fees
6. Chemicals and Fertilizers
7. Repairs and Maintenance

Figure 21 Costs per Hectare Ranked (% of Total Operating Costs)



The reported outcome for profitability per hectare in regions and size categories (Table 33) demonstrates the combined impacts of cost profile + yield achieved. Queensland reported strong yields and, as a result, widely amortised fixed costs, resulting in pleasing profits. On the other hand Central New South Wales participants demonstrated the impact of very low yields on average.

The Tri States region reported the second best profitability per hectare, second highest yield in a region and high percentages packed out to premium and to sizes 18 - 25.

The highest profits were reported amongst participants that managed between 20 and 50 hectares of orchard

Table 33 Profitability per Hectare in Regions and Size Categories

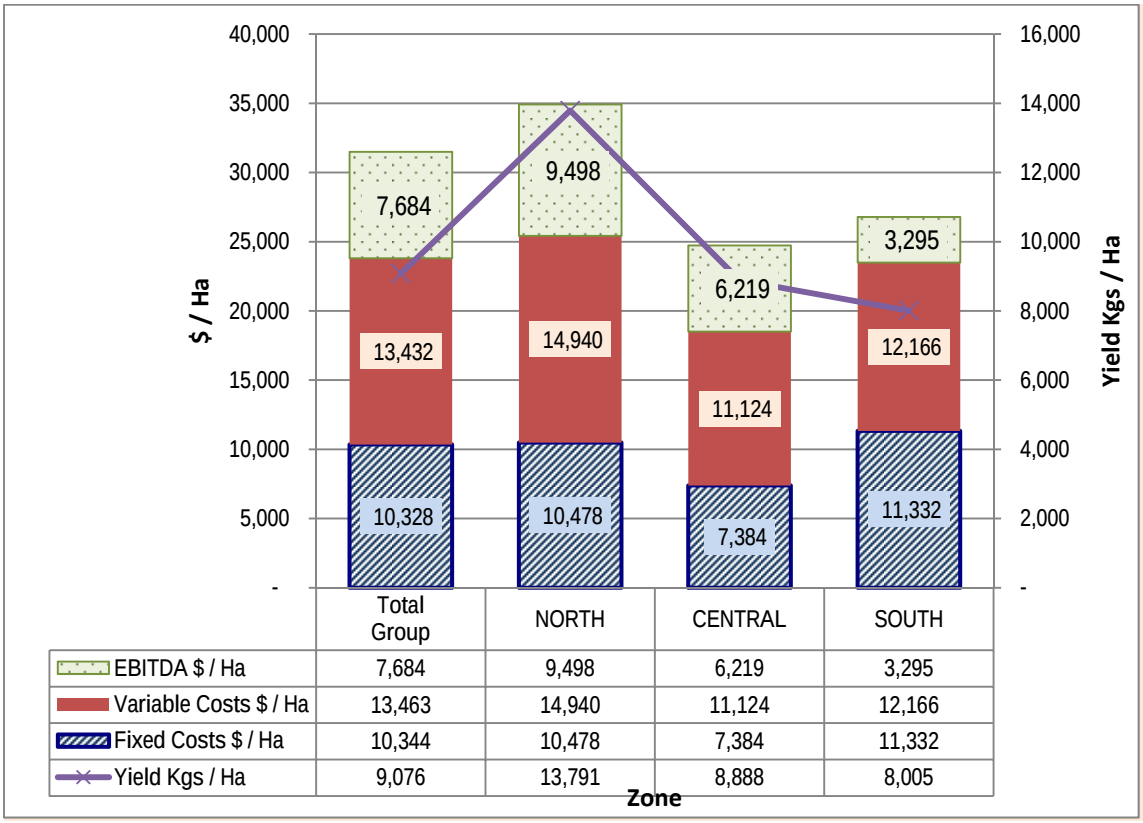
RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
EBITDA	$ / Ha	19,660.00	6,459.00	4,374.00	9,498.00	4,592.00	(3,432.00)	15,790.00	1,883.00
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
EBITDA	$ / Ha	11.00		3,440.00		10,990.00		7,854.00	

In Figure 22 operating costs and profitability per producing hectare are differentiated into Fixed Operating Costs and Variable Operating Costs, as defined previously in Figure 16 (Section 6.3.4). From this information it appears that participants in the Central Zone have a lower cost profile per hectare than in other zones.

In particular the fixed cost associated with growing and managing the crop is lower than in the other zones. Whilst it may further demonstrate the phenomenon referred to previously regarding higher inputs delivering improved financial outcomes, it is not feasible to draw that conclusion at this point.

There is inadequate data collated at this point to comment meaningfully on this variance. It may be possible with more data, over multiple years' growing conditions, to ascertain a cause and effect relationship to explain this.

Figure 22 Fixed and Variable Costs per Hectare in Zones



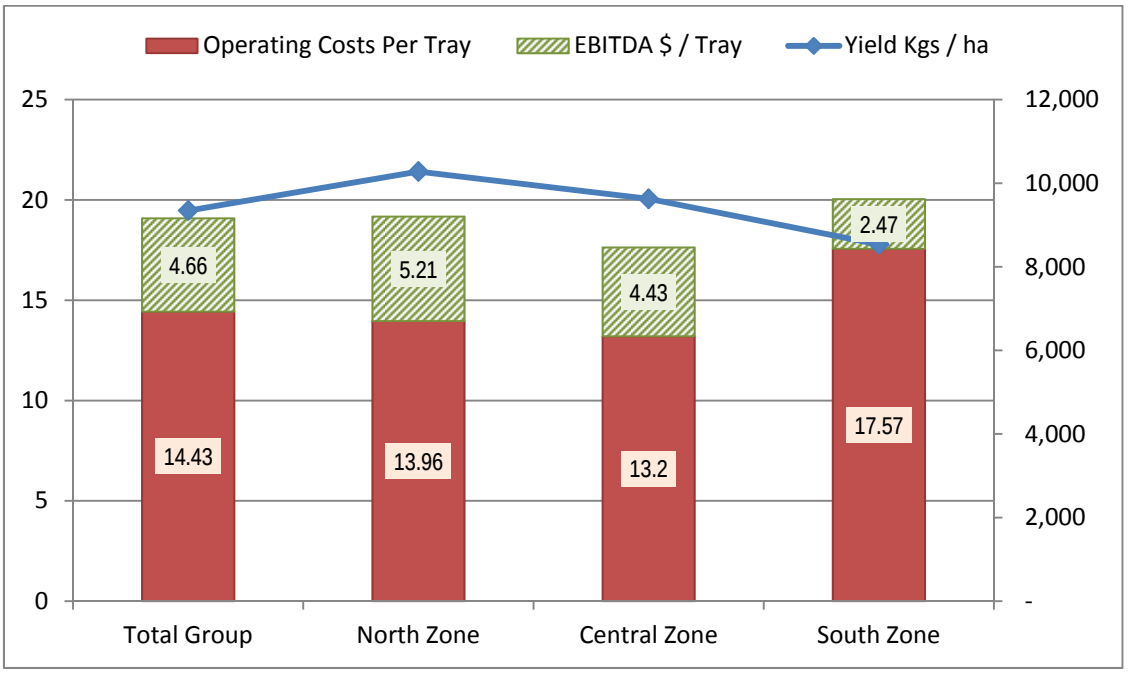
	Total Group	NORTH	CENTRAL	SOUTH
EBITDA $ / Ha	7,684	9,498	6,219	3,295
Variable Costs $ / Ha	13,463	14,940	11,124	12,166
Fixed Costs $ / Ha	10,344	10,478	7,384	11,332
Yield Kgs / Ha	9,076	13,791	8,888	8,005

6.4.5 FINANCIAL PER TRAY EQUIVALENT SOLD

The entire group reported an average Revenue of $19.09 per tray equivalent, operating cost per tray sold of $14.43 and profit (EBITDA) per tray of $4.66 per tray.

As identified on a per hectare basis, the Northern Zone reported the best financial outcomes amongst zones, as shown in Figure 23. Also, the trend demonstrated previously of the Central Zone having lower overall costs is reflected on a per tray sold basis. The Southern Zone, which demonstrated the lowest yield outcomes, demonstrated a resulting high cost per tray sold.

Figure 23 Operating Costs and Profits per Tray Sold, In Zones



The impact of low yields on **fixed costs** (growing and managing the crop and overheads) per tray sold is well demonstrated in Figure 24. This is an interesting set of data in that:

1. Central Zone is demonstrating very low fixed costs per tray sold and low yields*(however we have noted previously that this region appears to show materially lower costs than other regions),*

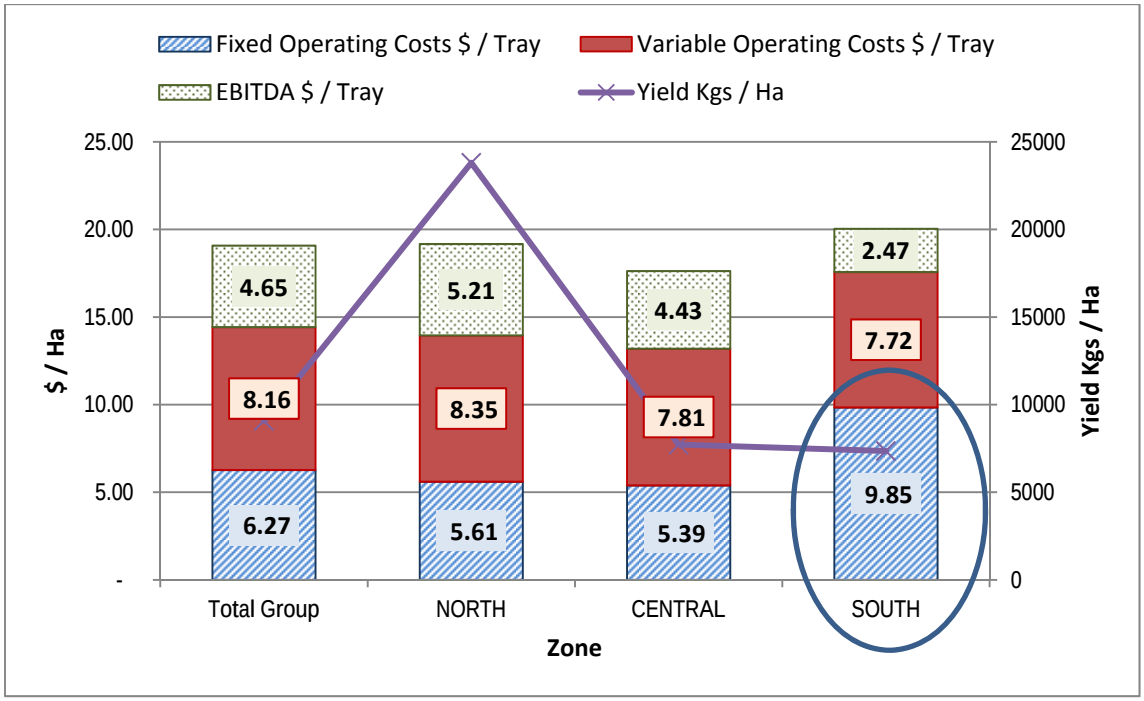
2. Southern Zone participants appear to have experienced a marked increase in fixed costs per tray sold related to the low yield outcome.

On a 'per unit of sale / weight sold' basis, the variable costs in Figure 24 appear quite consistent regardless of yield achieved, whereas fixed costs per unit sold increase significantly in the Southern Zone with low yield

(Central Zone appears to demonstrate inconsistency with this pattern, a pattern which is logically expected.)

Fixed and Variable Costs

Figure 24 Fixed and Variable Cots per Tray Sold In Zones



Operating costs per tray in the different regions vary significantly and, other than for the case of regions in the Central Zone (Sunshine Coast, Southern QLD and Northern Rivers) appear to reflect a pattern that follows yields achieved.

In size categories, participants with producing areas of 20 to 50 hectares have reported the lowest operating costs per tray sold.

It is worth noting that, as previously outlined, the Top 10 performing businesses, on profit per hectare, have an average producing area of 29 hectares and also produced 28% of the total volume produced by the group, from 13% of the productive area. In the Top 10 group 7 out of 10 participants had producing areas between 10.01 hectares and 20.00 hectares in that year, 2011-12 and therefore are categorised into this size category.

Table 34 Operating Costs Per Tray Sold in Regions and Size Categories

RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Oper. Costs	$ / Tray	9.98	15.80	14.77	13.39	12.45	24.32	11.67	20.84
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
Oper. Costs	$ / Tray	18.52		16.98		13.88		13.98	

Profitability (EBITDA) per tray sold clearly reflects a very similar pattern to operating costs per tray sold, as provided in Table 35. Profitability per tray sold was highest in participants in North Queensland and the Tri States regions, where yields were also first and second in order of yield achieved.

Table 35 Profitability (EBITDA) Per Tray Sold in Regions and Size Categories

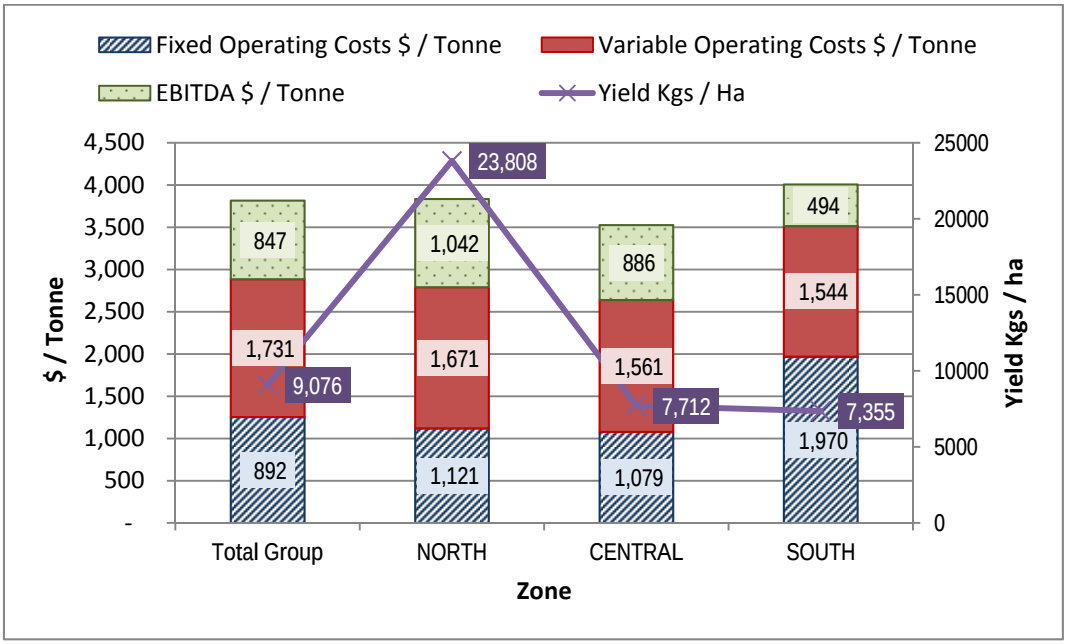
RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
EBITDA	$ / Tray	7.84	4.00	3.01	4.57	4.77	(4.32)	6.42	1.61
RESULTS FOR SIZE OF OPERATION CATEGORIES									
Measure (Average)	Unit	0.1 to 10 Ha		10.1 to 20 Ha		20.1 TO 50 Ha		50 Ha Plus	
EBITDA	$ / Tray	0.01		2.20		5.99		4.84	

In Figure 25, the data on a per tray sold basis has been converted to per tonne sold. This information indicates an average of 24% of sales revenue per tonne sold being retained as EBITDA, or 'proxy' operating cash surplus. In many commercial businesses this outcome, would be seen as a sound business result.

However, in this sector the land, water and all capital assets are owned by the operating party. This 'cash return' has to provide adequate return on investment to deliver a realistic return on all funds employed, as well as / including servicing any third party finance that may be needed to hold the significant hard-asset base for their operations.

(In a commercial business that is not required to, and seldom does, hold the 'land and water assets 'to effectively operate and control the same business [commonly leasing premises], the capital and finance servicing requirements are considerably less.)

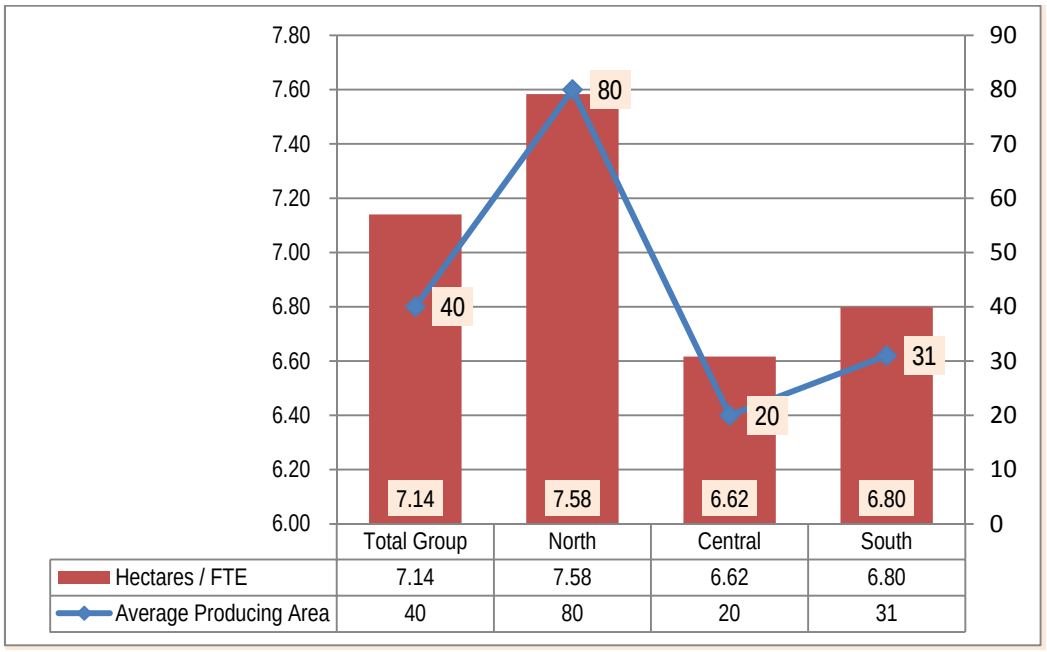
Figure 25 Operating Costs and Profits per Tonne Sold in Zones



6.4.6 LABOUR USE EFFICIENCY

Labour use efficiency, measured in this instance by the average number of producing hectares managed with each Full Time Employee Equivalent (FTE), for the entire group has been reported as 7.14 hectares per FTE (Figure 26).

Figure 26 Labour Use Efficiency In Zones



There may be a significant relationship between the volume of produce produced, picked and packed, and the amount of labour required to run an avocado farm (this relationship is likely to be even stronger when an operator packs in house). It also may be found, with a broader set of data over multiple years (that enables a 'smoothing' of some of the variables between regions and within regions), that a relationship exists between farm size and labour use efficiency.

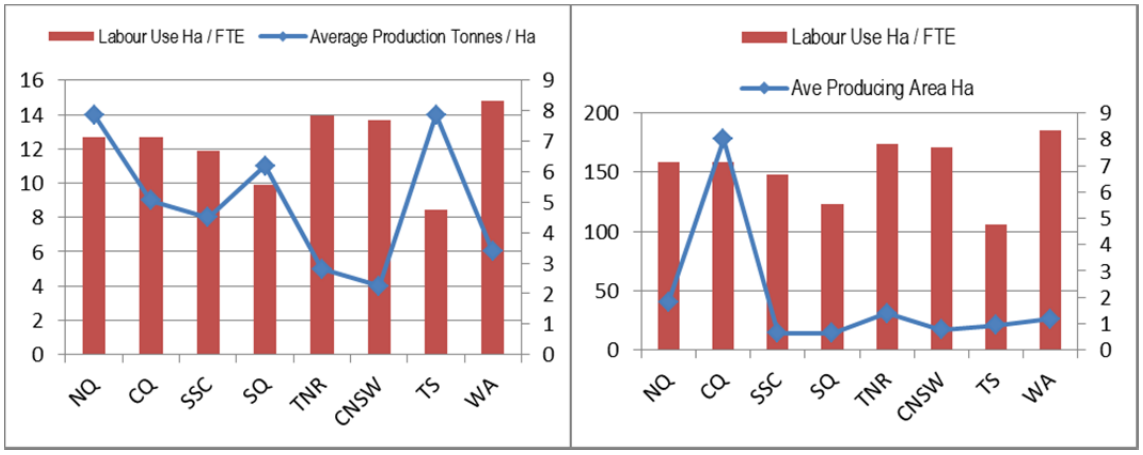
Table 36 (and Figure 27) provides data as so far collated from the 2011-12 financial year. At this point, with significant variations in data collected about production and a single year's data, it is not possible to definitively consider what may be 'cause and effect' in terms of labour use efficiency

Table 36 Labour and Other Variables in Regions and Size Categories

RESULTS FOR GROWING REGIONS									
Measure (Average)	Unit	North QLD	Central QLD	Sunshine Coast	Southern QLD	Northern Rivers	Central NSW	Tri States	Western Australia
Ave Producing Area	Ha	40	178	14	14	31	17	21	26
Average Production	T / Ha	14	9	8	11	5	4	14	6
Labour Use	Ha / FTE	7.14	7.14	6.67	5.56	7.84	7.69	4.76	8.33

RESULTS FOR SIZE OF OPERATION CATEGORIES					
Measure (Average)	Unit	0.1 to 10 Ha	10.1 to 20 Ha	20.1 TO 50 Ha	50 Ha Plus
Average Production	T / Ha	8	9	10	9
Labour Use	Ha / FTE	3.85	5.26	6.67	8.33

Figure 27 Labour Use and Two Possible Variables (in Regions)



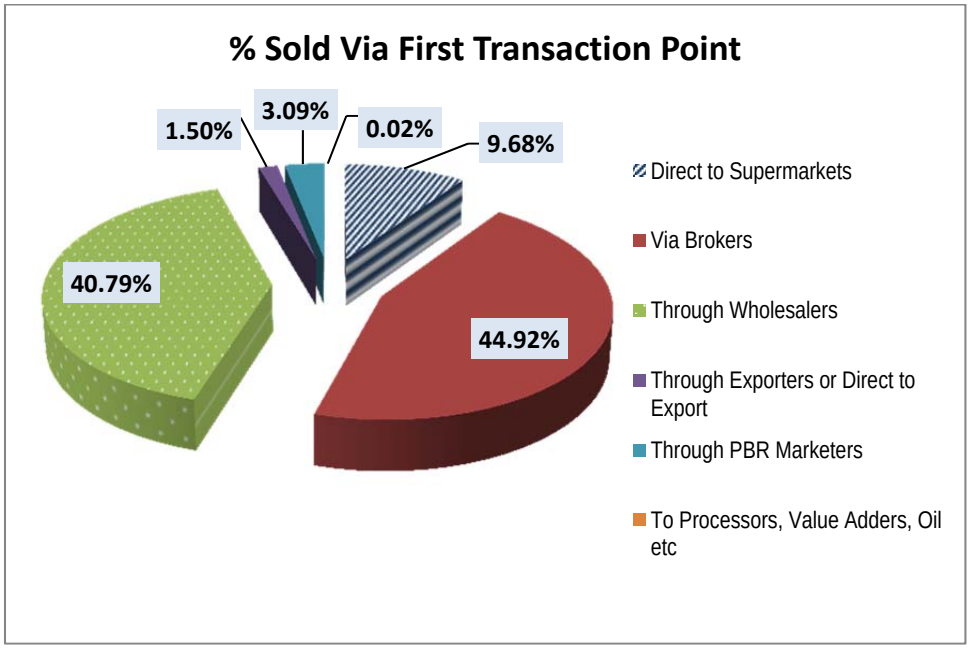
6.4.7 MARKETING AND THE SUPPLY CHAIN

Participants in the 2011-12 financial year provided information about how they manage their marketing function and what are some of their activities related to marketing.

First Transaction Point

The data collected suggests that by far the majority of participants' produce is sold to parties acting as wholesalers and / or brokers (86%) at the first transaction point in the marketing chain. Much of the volume that is being transacted to wholesalers and brokers is being on-shipped directly to major supermarkets, however is not clear what proportion. Participants including larger producers report selling via a wholesaler or broker for much of their crop.

Figure 28 The First Transaction Point in the Supply Chain



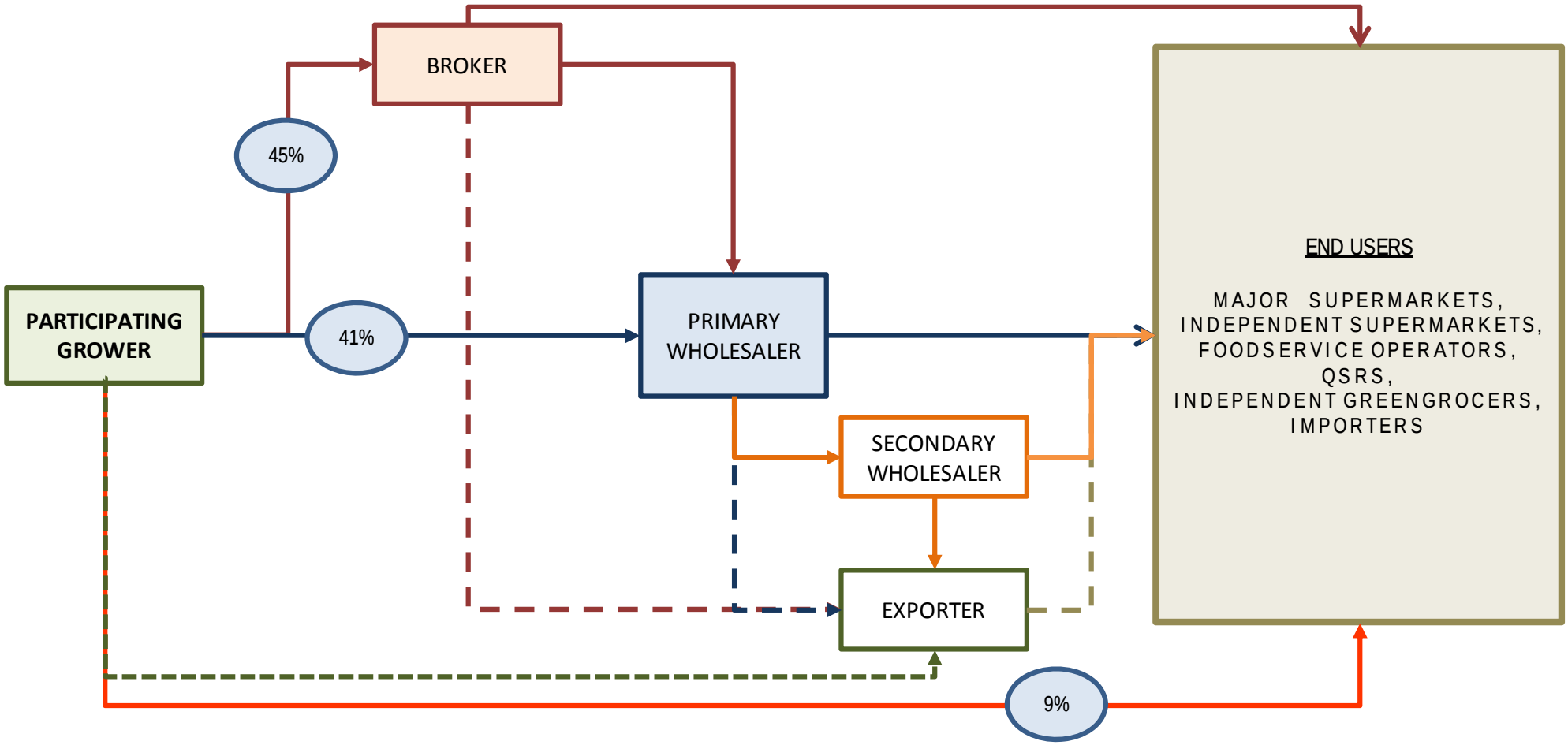
The parties performing the function of broker include several types of operators including and not limited to the examples in Table 37.

Table 37 Some Examples of Brokers and Consolidators

Type of Broker	Examples
Contract Packing Houses	o Aussie Orchards o Balmoral Orchard o Coastal Avocados o I and A Tolson o Oasis Fresh o Natures Fruit Company o Sunfresh o Superpak o Tamborine Grove o WestnFresh
Wholesalers, Consolidators, Facilitators	o Avolution o Fresh Exchange o Fresh Produce Group o Freshmax o Lamanna Group o Moraitis Group o Murray Brothers o Simpson Farms

Data collected so far from the 2011-12 financial year suggests that the supply chain for avocado supply in the Australian market may be similar to the initial concept model in Figure 29.

Figure 29 'Strawman' Avocado Supply Chain

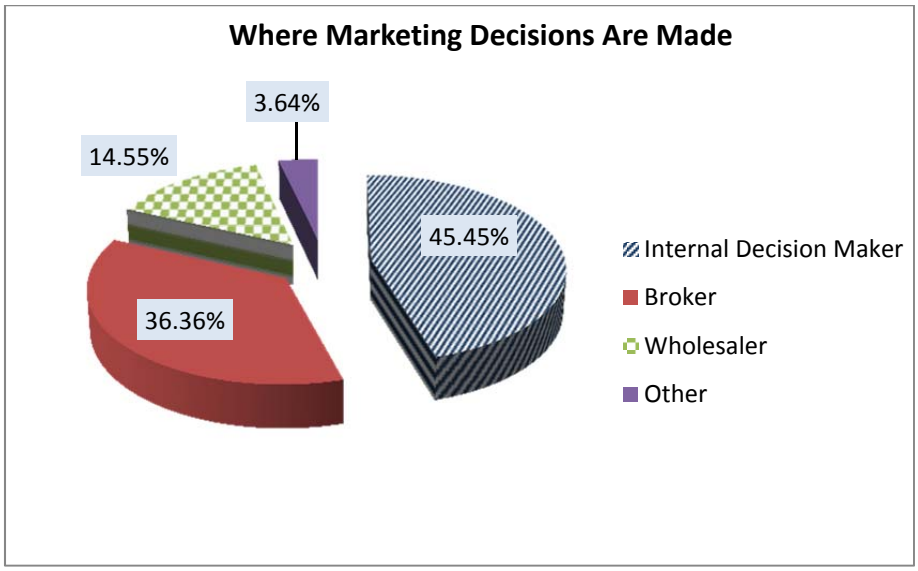


Marketing Decision Makers

Approximately 45% of participants consider that the main decision maker in how and where to sell their produce is internal to their business. This includes some participants that do sell through brokers and wholesalers, and make their own decisions about timing, distribution and spread of their output through numerous channels.

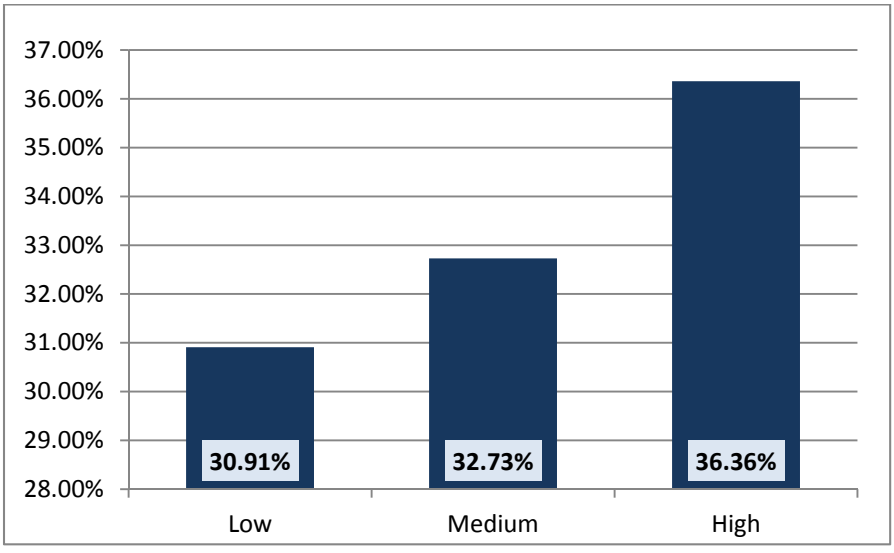
Another 50% of the participants consider that the brokers and / or wholesalers are the primary decision maker about the distribution, timing and spread of their produce to markets.

Figure 30 Main Marketing Decision Makers



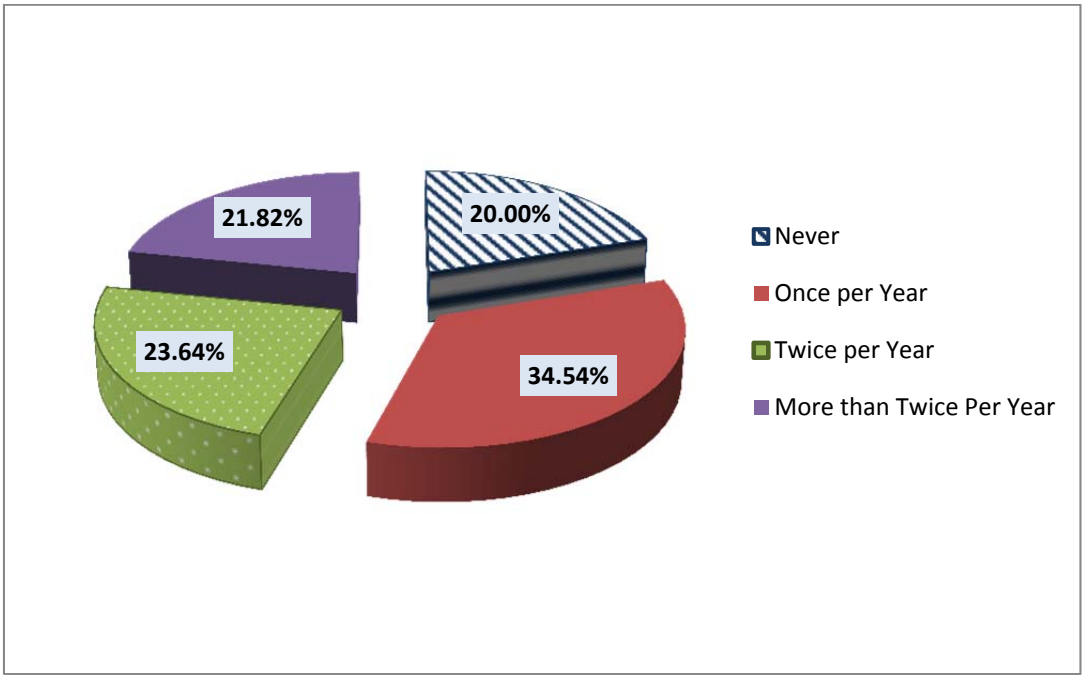
Related to the topic of who the main marketing decision maker is, 64% of the participants consider that their internal personnel have low to medium levels of skill and involvement in the marketing of the produce produced. The remaining 36% of participants consider that they have high levels of skill in the marketing of their produce and are heavily involved in that part of their business. (Refer Figure 31.).

Figure 31 Perceived Skill and Involvement in Marketing the Produce



The level of involvement in marketing of the produce by participants is further illustrated by the frequency with which participants and / or their staff visit markets, marketers and customers in the supply chain. As provided in Figure 32, 20% for participants reported do not travel to visit the parties further down the supply chain, 57% report visiting supply chain partners including customers twice or more per year and a further 24% visit through the supply chain once per year.

Figure 32 Participant Visits to Customers and the Supply Chain



6.4.8 FARM AND MANAGEMENT PRACTICES

The participants were each asked a series of 36 questions regarding how they operated their businesses and how they managed various functions in their operation. These questions covered the topics of:

1. Labour Management
2. Marketing Practices
3. Irrigation Practices
4. Fertilizer Practices
5. Pest and Disease Control
6. Pruning Practices
7. Packing Strategy, and
8. Record Keeping.

A summary of the responses of participants and notes regarding notable differences in regions where they appear, is provided in Table 38

Table 38 Summary of Group Responses – Farm and Management Practices

Practice Area / Topic	Summary for Total Participant Group	Summary - Differences Across Regions (Where Notable)
Origin of Farm Workers	68% of labour on participants' farms was supplied by Australian workers, remainder predominantly backpacker labour of Asian and European ethnicity	North QLD, Central NSW and W.A. are the regions most reliant on non-Australian labour (predominantly back packers)
Sources of Farm Workers	53% of farm labour is sourced from 'walk-up' or referrals, the majority of the remainder is sourced via back packer hostels	Regions other than Central QLD all rely mostly on walk-up and referrals for their labour needs., Central QLD relies more on back packer hostels
Use of Contractors	Mechanical pruning and packing are the major tasks supplied by contract service providers.	No notable pattern
Method of Irrigation	95% of group use micro-sprinklers for irrigation with small numbers using drip tape and 'fixed scheduling'.	Micro sprinklers are the dominant irrigation method across all regions
Irrigation Monitoring Method	58% of group use tensiometers or Enviroscan technologies, remainder mostly use visual means only	Enviroscan technologies are more highly reported in Central QLD, Tri States and W.A. regions
Frequency of Irrigation	67% of group irrigate either daily, every two days or weekly, the remainder water weekly or less often than weekly	North QLD, Tri States and W.A regions appear to adopt higher irrigation frequencies on average than other regions.
Irrigation Volumes Applied ML / Ha / annum	Those participants that provided water delivery volumes applied an average of 7.6 ML / ha / annum, highest being 28 ML / ha / annum.	Highest water volumes appear to be being applied in North QLD, Central NSW, Tri States and W.A.
Frequency of Soil Analysis	66% of the group undertook regular soil nutrient testing, with 51% doing it annually and 15% doing it every two years.	No notable pattern
Frequency of Leaf / Tissue Analysis	75% of the group undertook regular leaf analysis for nutrition monitoring, at least yearly (42%) or every second year (33%)	No notable pattern
Primary Fertilizer Method	Fertigation (53%) and solid applications (42%) are the most common methods of fertilizer application amongst participants.	Fertigation was the dominant method of fertilizer application in all regions other than Sunshine Coast and the The Northern Rivers

Practice Area / Topic	Summary for Total Participant Group	Summary - Differences Across Regions (Where Notable)
Estimated N Applied (KG / Ha / annum	Those participants that provided nutrient application data applied an average 139 Kg/ ha / annum of Nitrogen (Range 13 - 675 Kg / ha / annum)	No notable pattern
Estimated P Applied (KG / Ha / annum	Those participants that provided nutrient application data applied an average 39 Kg/ ha / annum of Phosphorous (Range 7 - 170 Kg / ha / annum)	No notable pattern
Estimated K Applied (KG / Ha / annum	Those participants that provided nutrient application data applied an average 136 Kg/ ha / annum of Potassium (Range 12 - 625 KG / ha / annum)	No notable pattern
Frequency of Pest and Disease Treatment Summer	The majority of participants (80%) applied pest and disease treatments once per month or less frequently than once per month (49%) during summer	Summer pest and disease treatment frequency reported higher in North QLD and Central NSW.
Frequency of Pest and Disease Treatment Winter	91% of participants applied pest and disease treatments once per month or less frequently than once per month (87%) during winter	Winter pest and disease treatment frequency reported higher in North QLD, Central NSW and W.A.
Use of Mounding in avocado orchards	58% of participants use mounding in their avocado orchards	Sunshine Coast, Southern QLD and Tri States reported lower adoption of mounding as a farm practice
Application of Mulch in avocado orchards	49% of participants did not use mulching as part of farm practices and 36% applied mulch annually	Participants in North QLD, Central QLD and Central NSW greater adoption of mulching
% of Trees Lost to Phytophthora (Last 3 Years)	91% of the participant group estimate that they have lost 5% or less of their avocados trees to phytophthora in the last three years	Central QLD and Southern QLD reported a higher incidence of tree losses to phytophthora
% of Trees Lost to Other Causes (Last 3 Years)	Minimal losses reported, 94% estimate losses at 5% or less	No notable pattern
Phytophthora Treatment Method and Frequency	64% of participants use either needle of foliar spray treatment for phytophthora control whilst 36% do not use any treatment for this disease. 51% of participants report this as a regular practice (yearly or twice yearly)	Central QLD and the Northern Rivers reported higher adoption levels of phytophthora treatment
Use of Mechanical Pruning (Hedging)	58% of participants use mechanical hedging as part of their pruning program, with 27% hedging their entire orchard annually, and 31% hedging 255 to 50% of their orchard annually	North QLD, Central QLD, Southern QLD and Central NSW participants reported higher adoption levels of mechanical pruning

Practice Area / Topic	Summary for Total Participant Group	Summary - Differences Across Regions (Where Notable)
Use of Internal Hand Pruning (Canopy Management) / limb Removal	42% of participants undertake limb removal / internal pruning / canopy management on their entire orchard each year, 25% applying this practice to half of their orchard annually and 22% applying it to one quarter of their orchard annually	Sunshine Coast and Southern QLD participants reported lower levels of adoption of internal pruning / limb removal than other regions
Packing Strategy	55% of participants use contract packing operators to pack their harvest, the remainder (45%) packing in house	Utilisation of contract packing houses appears lower amongst participants in North QLD, and Tri States regions
Level of Record Keeping on Farms	Spray records are predominantly retained in written form by participants (64%) or in computerised formats (24%) Irrigation records are predominantly retained in written (40%) and computerised (35%) formats by participants Harvest (and pack out) records are predominantly retained in computerised formats (51%) and written formats (38%) by participants Labour time sheets and records are predominantly maintained in written formats (55%) or computerised formats (24%)	No notable pattern
Extent of Block by Block Record Keeping	Farm Practices: 60% or greater of the participants retain records on a 'block by block' basis for farm practices including spraying, irrigation and fertilizer records Harvest and Yield: 58% of participants retain harvest / yield data on a 'block by block' basis Labour and Financial Records: Less than 10% of participants retain records for labour use, costs and financial performance on a 'block by block' basis	No notable pattern

7. DISCUSSION

The stated objective of this project was to undertake industry wide research and analysis and create a tool that can deliver benefits to the avocado industry in four key areas, being:

3. **Assist Australian avocado producers to improve the performance of their businesses**,
    - by providing them access to information about how their business operates and performs compared to their peers,
4. **Provide an initial resource that enables the Australian avocado industry to assess how the industry performs compared to global competitors**
    - (such as New Zealand, South American countries, South Africa, USA, Mexico and others).
5. **Assist both producers and the industry at large to better assess the benefits of research and development and of changes producers may make**
    - in how they run and manage their businesses, and
6. **Provide assistance to improve knowledge and understanding that is held about various aspects of the industry,**
    - amongst producers, industry service and support personnel, supply chain partners and other stakeholders.

This report and the findings outlined have been collected from producers that represent more than 25% of the producing assets in the Australian industry and more than 35% of the volume of production achieved in the research year, financial year 2011-12. It is compiled about producers that range in size from less than 500 hectares of producing area to over one hundred hectares of producing area. It has captured a variety mix that reflects the current industry composition, including 75% Hass variety, 17% Shepard variety and includes areas of Wurtz, Sharwill, Reed, Sir Prize and Grieve.

The industry can be confident that the information contained herein is reflective of the conditions and experiences in the industry in the financial year 2011-12. It also reflects, and in numerous areas defines clear variances in operations, processes and outputs from large and small producers and producers from every recognised growing region.

The research has examined data from the participant group, and also from differentiating and examining data from businesses with very good business outcomes (Top 10) and the remainder that were not so fortunate in that year. It has identified, or at very least re-affirmed for many, the very significant range of outcomes for producers in the 2011-12 financial year.

Differences within regions and between regions are both significant. Differences in some of the 'business metrics' of comparative performance have also been defined between different sized businesses. Yields per hectare appear to be the factor most impacting on the ability of producers to turn an adequate profit to deliver returns on the capital invested in farms and service the finance needed to carry these assets (including land, water, improvements, plant and machinery, packing technologies and others) on the same balance sheet as the operating business.

In many respects businesses with between 20 and 50 hectares of producing area in the 2011-12 year demonstrated the best key performance measures (KPIs). Businesses in North

Queensland and Tri States regions demonstrated the highest yields per hectare. Western Australian participants demonstrated the highest average pack out to Premium Grade.

Of interest is the finding that the Top 10 participants as ranked by profit per producing hectare sold their produce at a lower average price per tray sold, had higher operating costs per hectare sold, and achieved approximately two and a half times the yield and profit per producing hectare of the remainder of the participant group.

Some of this may be as a result of good fortune with season, or other non-manager controllable factors. Undoubtedly some of this good fortune is about what producers did, how they did it, when they did it and how they made decisions about the variables in their on-farm practices and management.

A valuable dividend from this research will be realised when it is possible to soundly conclude what manager controllable variables contribute to optimising business performance for Australian avocado producers.

The researchers are very confident that the information herein reflects the industry's fortunes in financial year 2011-12. With the extent of variation between participants, in both inputs and outputs, and both between and within regions, a data set covering multiple financial years will massively enhance the quality of the conclusions and lessons that can be applied from this research.

8. TECHNOLOGY TRANSFER

In accordance with the process steps agreed and forming part of the contract, the communication and dissemination strategy for this project is to be the subject of a separate project application, or it will be done internally by Avocados Australia Limited.

However, CDI Pinnacle Management Pty Ltd has a keen interest in ensuring that the outcomes of this project are indeed disseminated to industry, as does Avocados Australia (AAL). CDI Pinnacle Management is currently in discussions with Avocados Australia Limited with regard to developing and implementing the communication strategy for the project. It is currently agreed that the AAL Board will consider this, concurrently with their consideration of the final report, and then we will agree the steps to be taken, timing and the nature and methods to be engaged. It is highly likely to be incorporated as part of a series of regional meetings.

9. RECOMMENDATIONS

9.1.9 DISSEMINATION AND COLLABORATIVE 'BEST PRACTICE' GROUPS

It is recommended that through the dissemination that is to occur around this research and also through the ongoing interaction between the officers engaged at industry level and producers, the findings of this research and how it can be used to assist individual producers in their businesses be promoted.

In some industries 'best practice groups' have formed and use data similar to the results of this research as the basis for sharing ideas and developing new approaches to solving on-farm problems. The software that has been developed and used to store this data is able to produce tailor made reports for these collaborative groups that presents the group's information in a stand-alone comparative format. It is also achievable to produce reports that compare one of these groups with the aggregate results for a Top 10 group or another specifically defined group.

9.1.10 BENEFITS OF AN EXTENSION PROGRAM

'Agricultural extension is a general term meaning the application of scientific research and new knowledge to agricultural practices through farmer education. The field of 'extension' now encompasses a wider range of communication and learning activities organized for rural people by educators from different disciplines, including agriculture, agricultural marketing, health, and business studies.'
(Source: http://en.wikipedia.org/wiki/Agricultural_extension *31/5/2013)*

Thirty years ago in agriculture in Australia there was a lot of this going on. It can be argued that it still is, however with the impact of the 'tectonic shift' to project funding for many government officers and researchers, public private partnerships, user pays, and co funding, what extension means may have changed.

Much of what regional and industry extension officers were doing in the eighties is now thought to be deliverable by industry organisations such as AAL and its compatriots. However the structure, funding and guidelines for use of that funding also currently presents challenges to these organisations in relation to old fashioned extension. That is, delivering the sort of extension that collects, assimilates, assesses, and re-presents the ever moving 'body of knowledge' that is accumulated about what to do, how to do it, and when to do it, and what to expect - to optimise farm business outcomes.

The researchers have spent twelve (12) months interacting with avocado producers, sitting in their sitting rooms, kitchens and offices and sharing what is often very confidential information. It is undeniable that there are large differences in how and when people do things on farms in different parts of the industry. Some of those differences are appearing as if, with more data collated, they may prove to be causal agents in improving success for producer businesses.

Knowledge in the avocado industry appears to be in 'silos' and has become localised. There has been little discussion about producer or 'shed' meetings where people come together to share and collect more knowledge and add to the current 'body of knowledge'. There has been little discussion about underlying science, or guiding principles related to core on-farm tasks.

Without proposing a solution at this point in time, it seems pertinent to raise the question of how knowledge can be shared, developed and continually built on, in an industry that:

1. Has still got significant growth to be realized in terms of production volume,
2. Is distributed across a region that is approximately 2,000 km, north to south, and
3. Where there appears to be localized knowledge bases and a diverse set of variables that are impacting farm business outcomes.

9.1.11 COMMIT TO A MULTIPLE YEAR DATABASE

Industry participants speak openly about significant ups and downs in production between years, across the entire industry. Some of the Top 10 in 2011-12 have now completed or almost completed their harvest for 2012-13 and there is a stark difference in yields being achieved compared to the previous yields. The jury still appears out, at least in the minds of many participants, about the existence and impact of biennial bearing or alternate bearing in the industry.

This report outlines very clear pictures of the overall inputs profile and the relationships between those inputs and the outputs and outcomes. It does so differentially for regions, sizes of producers and those achieving higher and lower yield results. This research also indicates some possible correlations between farm and management practices and resulting outcomes.

The benefits of continuing to collect and analyse this information for multiple years (at least three would be recommended) is that it will smooth out the data and take into account the impacts of:

4. **The marked differences between regions in the same year, and**
5. **The marked differences within each region, across multiple production cycles, and the conditions in each cycle.**

It is recommended that the program be continued for a period not shorter than three financial years.

10. ACKNOWLEDGEMENTS

The research providers greatly acknowledge the generous input and assistance from the following groups of individuals:

1. Members of the AAL Board and the Avocado Industry Advisory Committee,
2. The smaller Project Reference Group,
3. Many of the Directors of AAL, supply chain participants, and industry advisors in their capacities as part of regional producer communities

The researchers also wish to acknowledge the willingness and openness of the producers that chose to participate in this project and join the benchmarking group. They have given freely of their time, their knowledge and their intellect and have willingly shared information, much of which is confidential and personal.

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12. APPENDICES

12.1 Detailed Results Graphs

12.1.1 PRODUCTION PER PRODUCING HECTARE

Figure 33 Spread – Production per Hectare

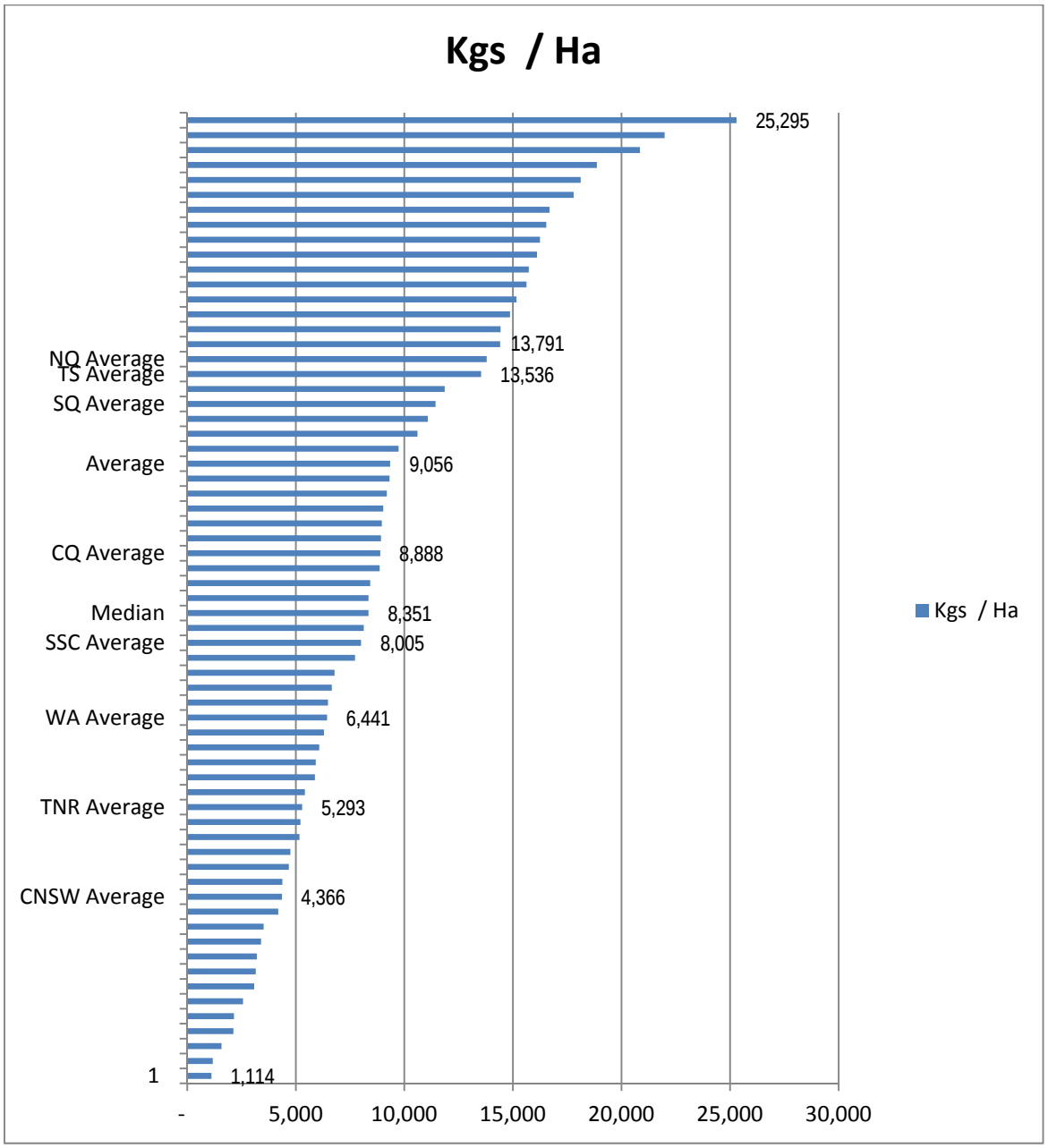


Figure 34 Regions - Production Per Hectare

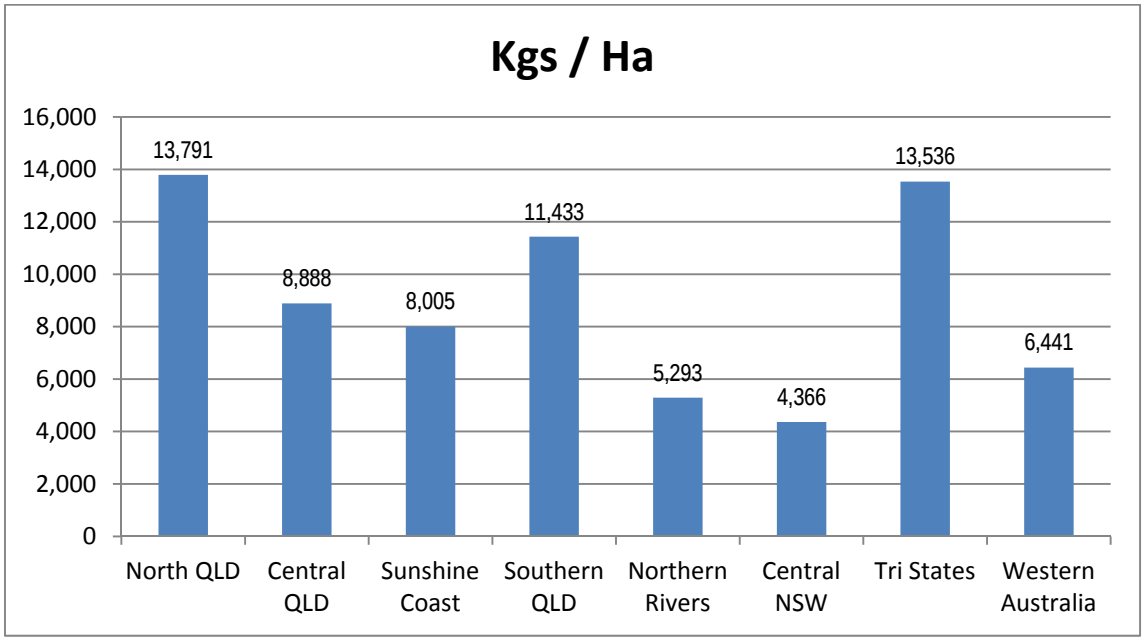
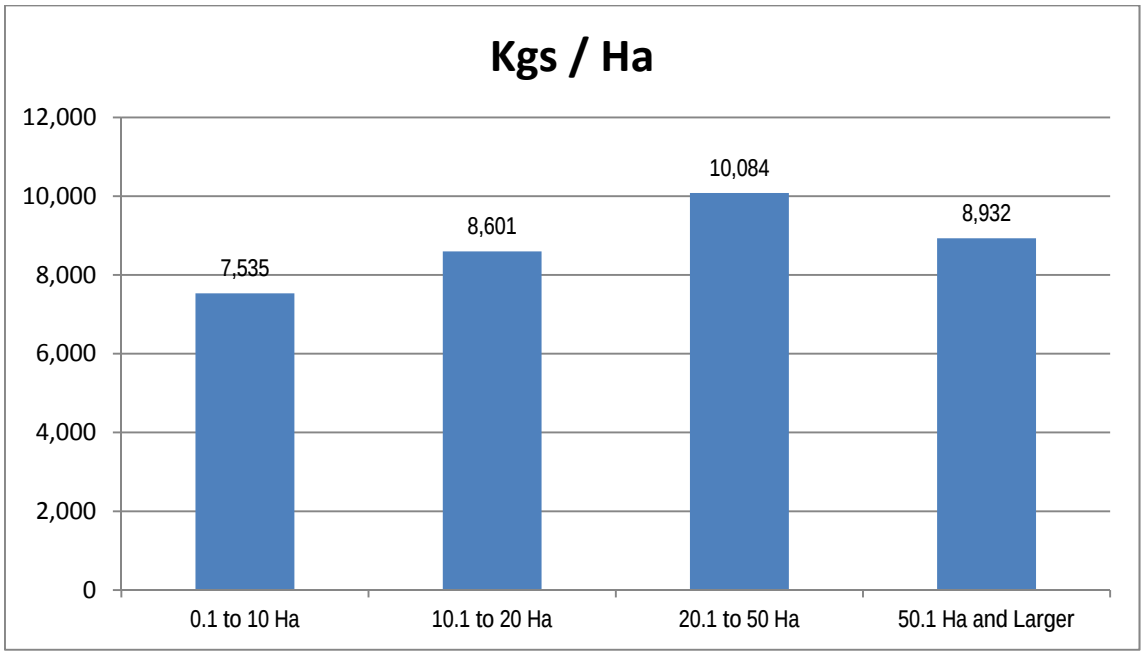


Figure 35 Size Categories – Production Per Hectare



12.1.2 PRODUCTION PER PRODUCING TREE

Figure 36 Spread – Production Per tree

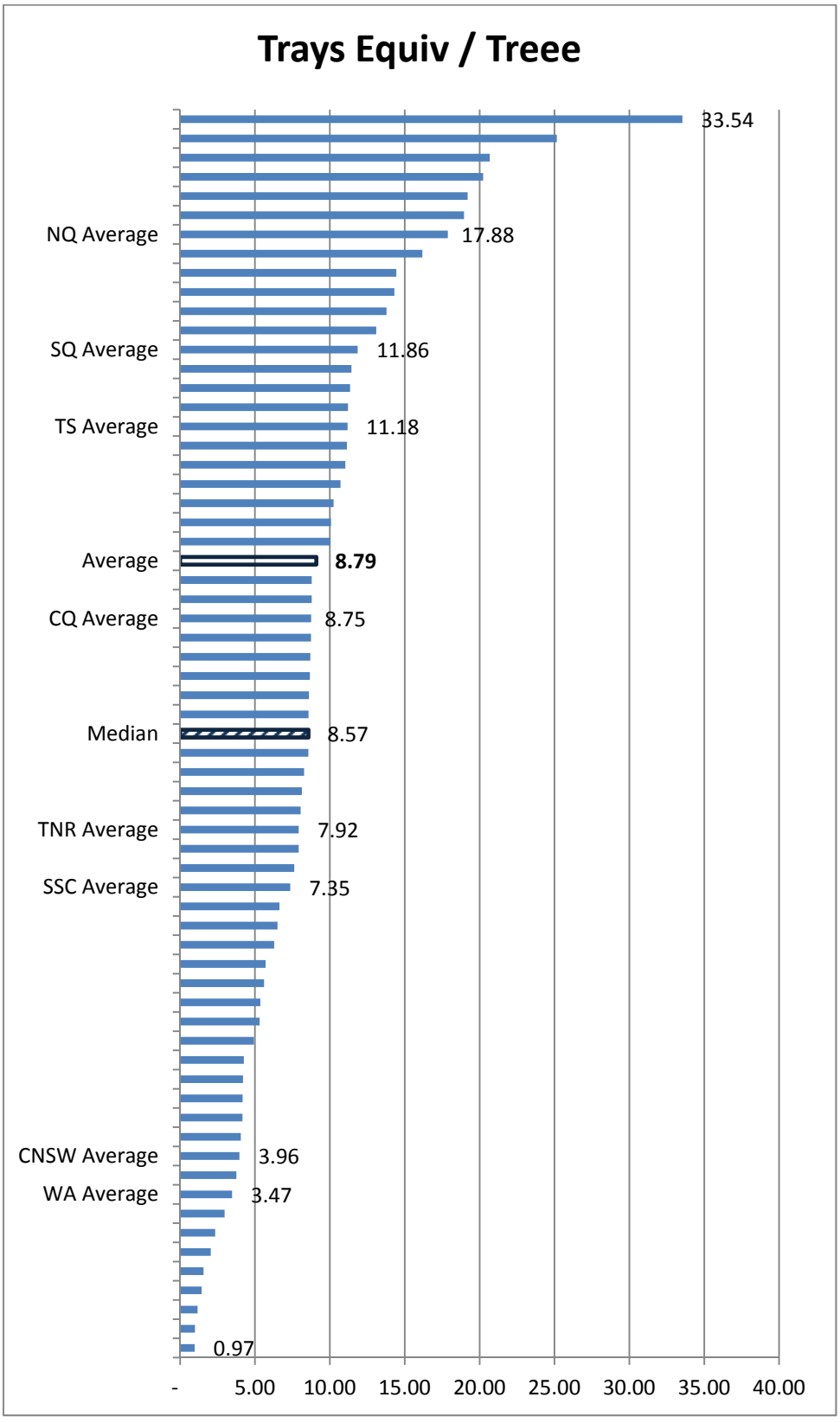


Figure 37 Regions – Production Per Tree

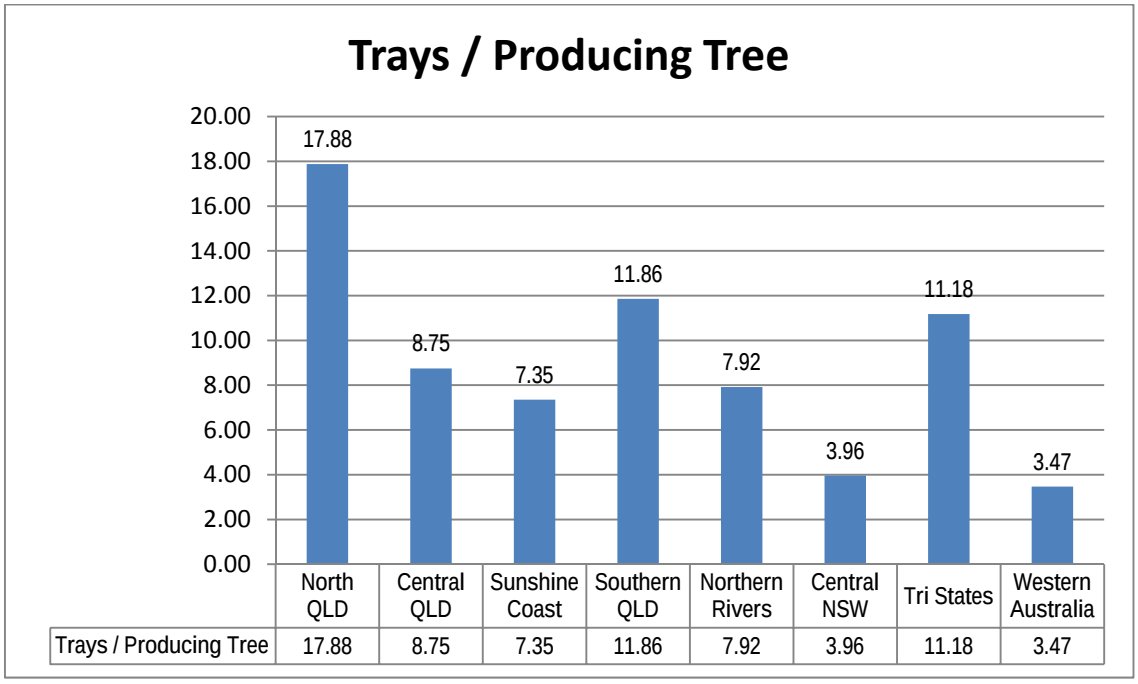
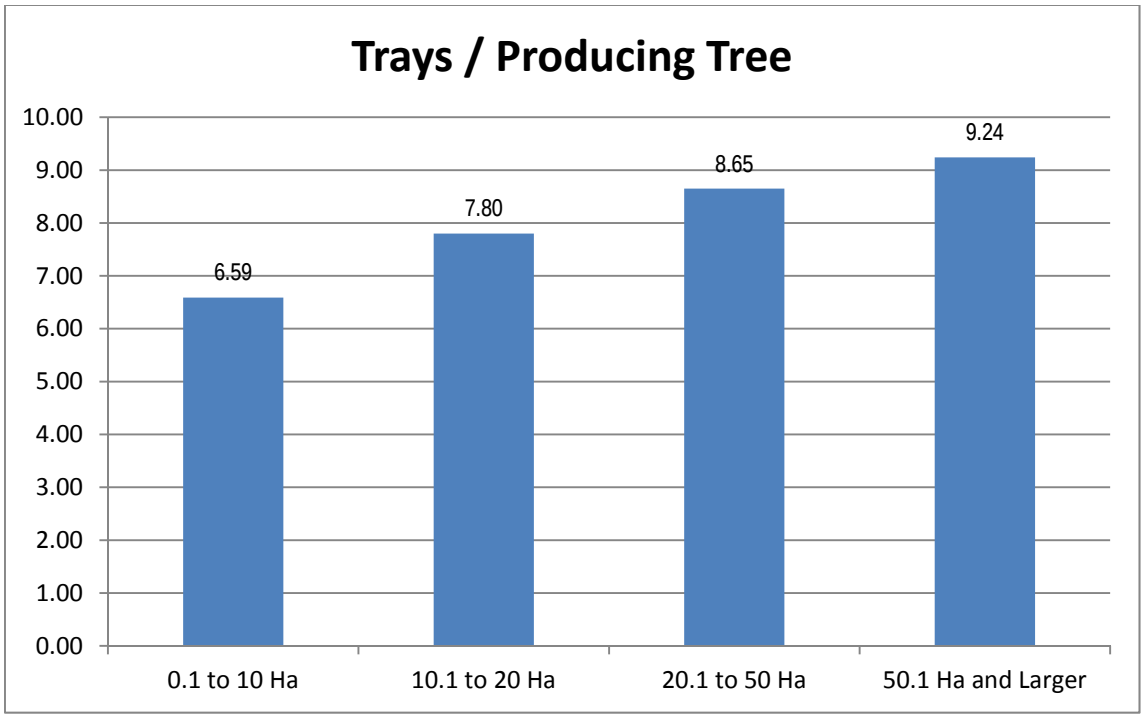


Figure 38 Size Categories – Production Per Tree



12.1.3 QUALITY AND PACK OUT

Figure 39 Spread – Pack Out to Premium Grade

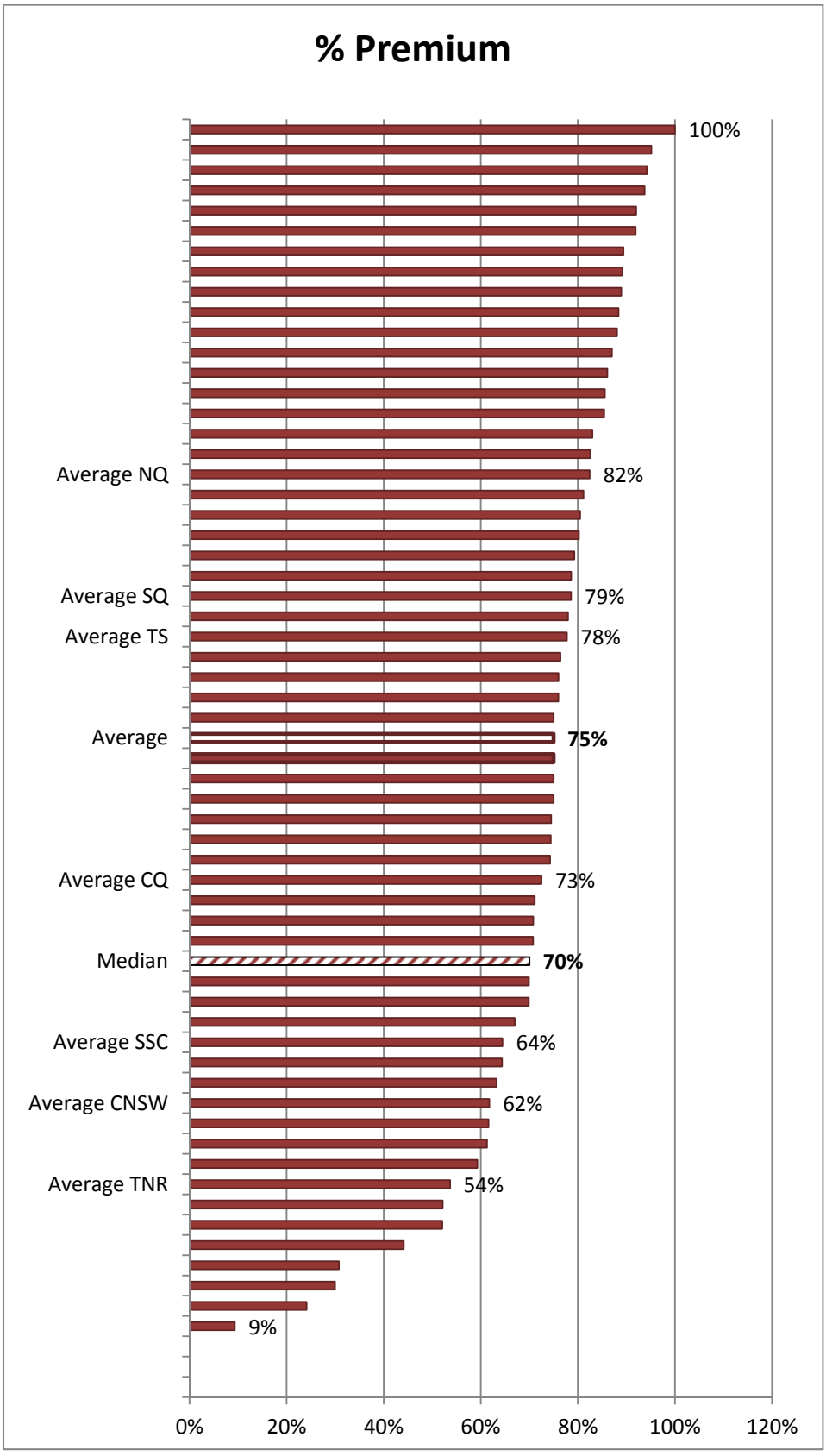


Figure 40 Spread – Pack Out to Counts 18 to 25

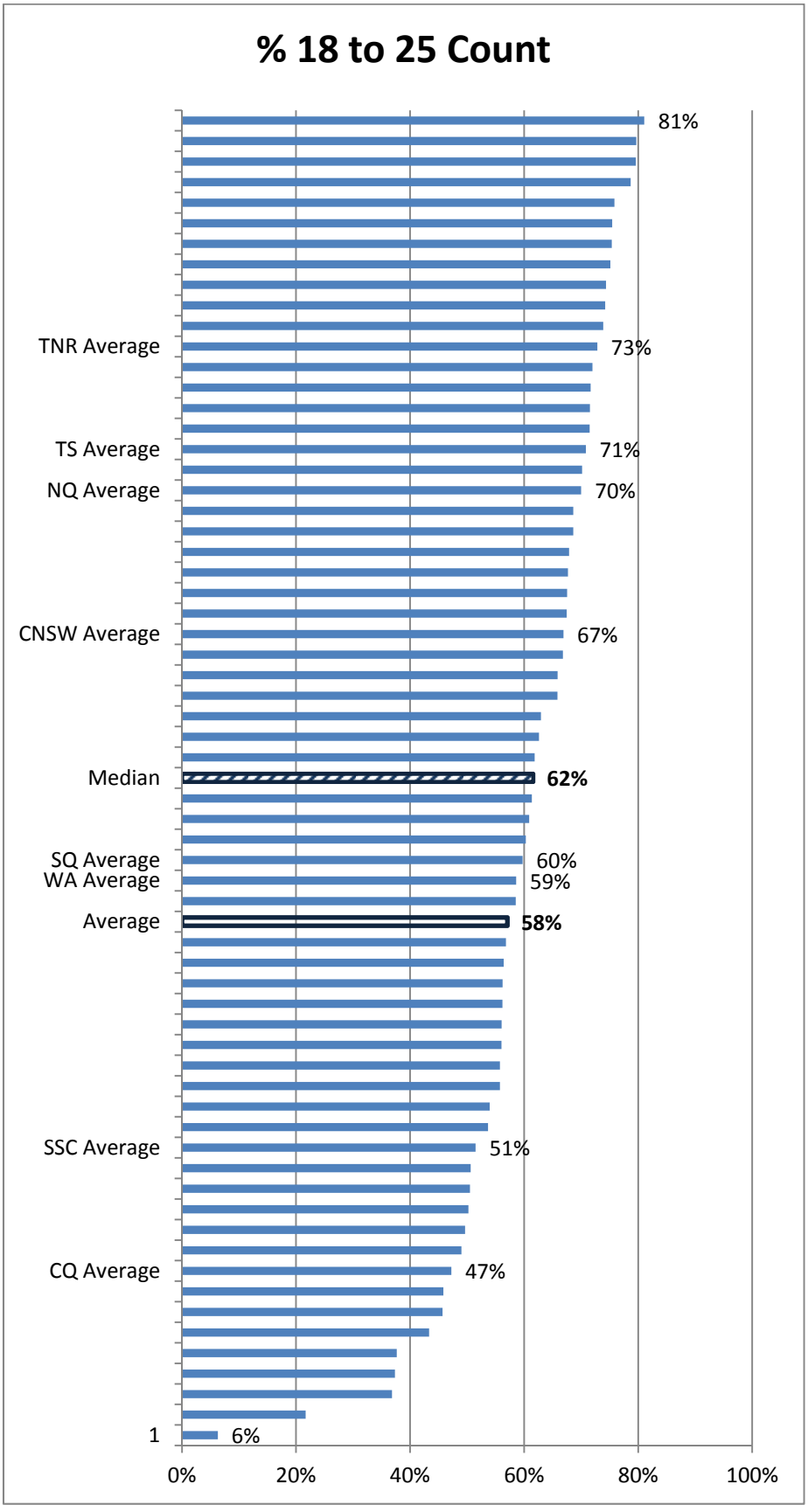


Figure 41 Regions – pack Out to Premium and Counts 18 to 25

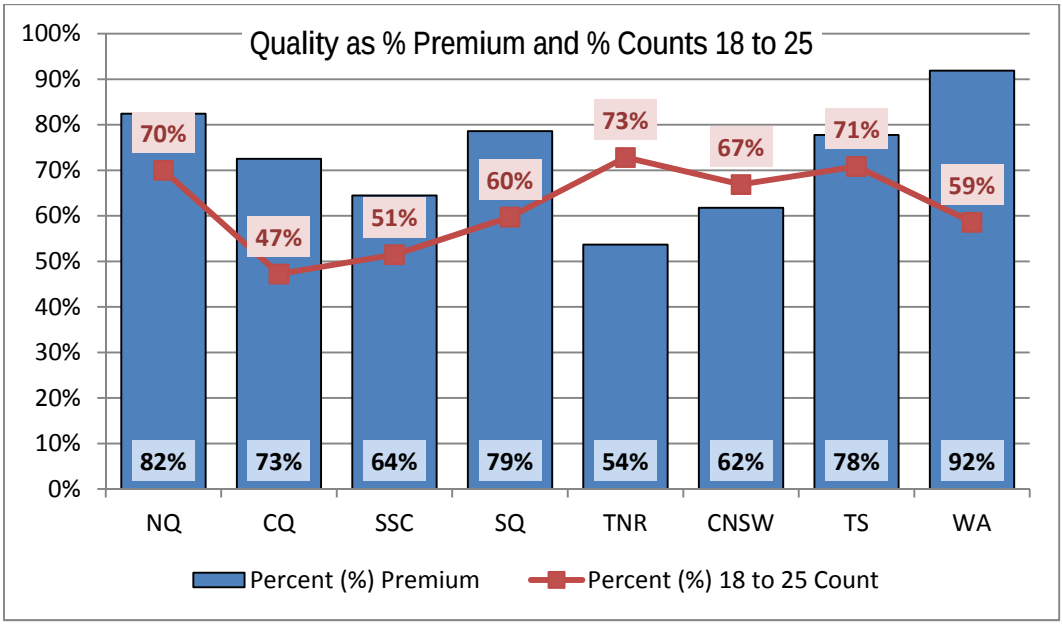
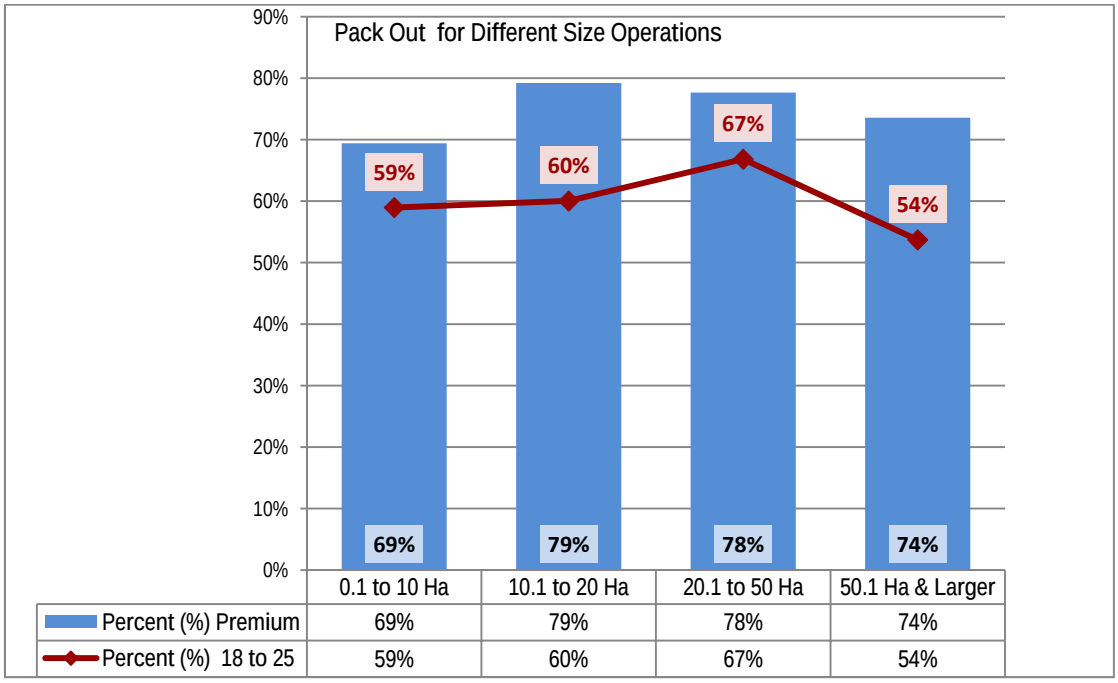


Figure 42 Size Categories – Pack Out To Premium and Counts 18 to 25



12.1.4 OPERATING COSTS PER PRODUCING HECTARE

Figure 43 Spread – Operating Costs Per Hectare

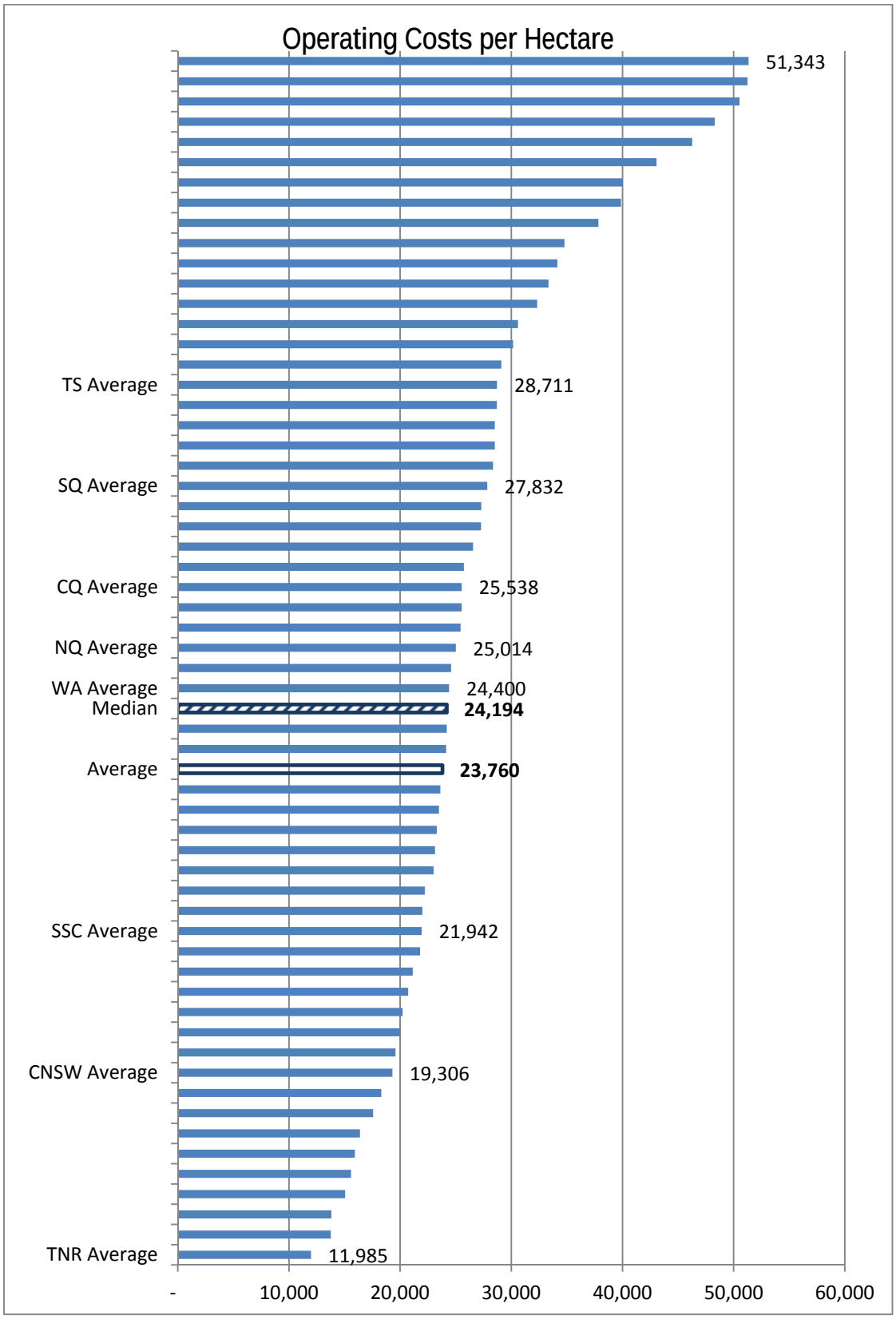


Figure 44 Regions – Operating Costs Per Hectare

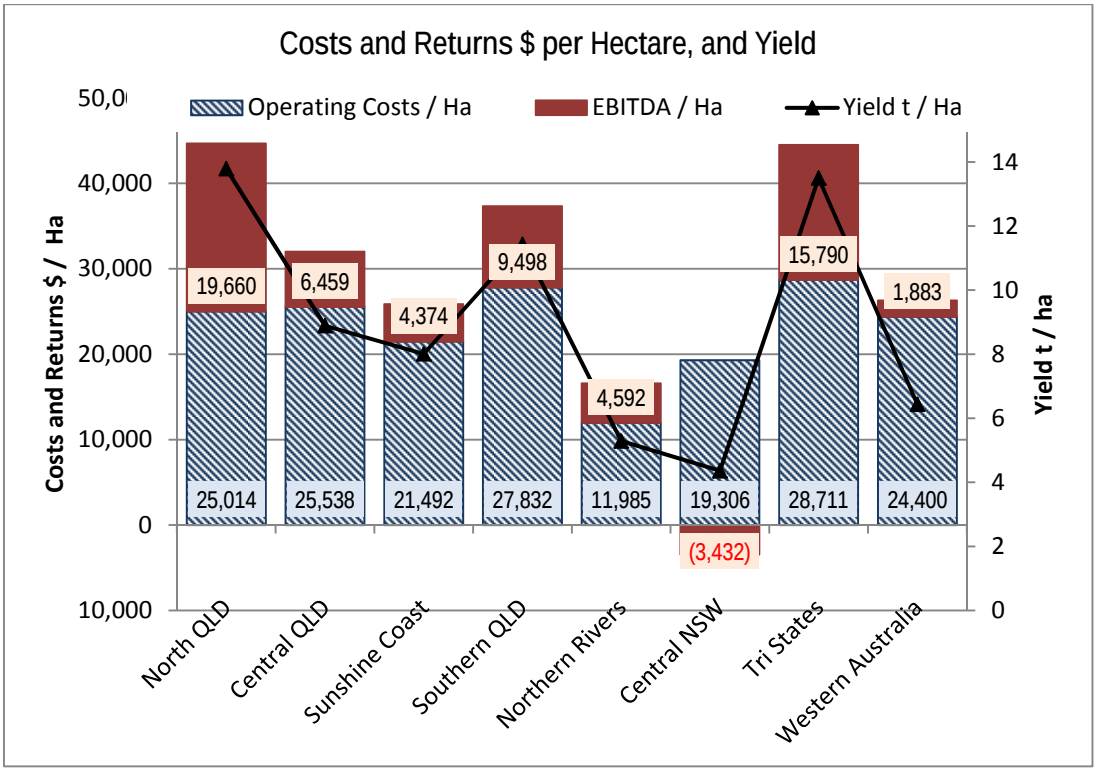
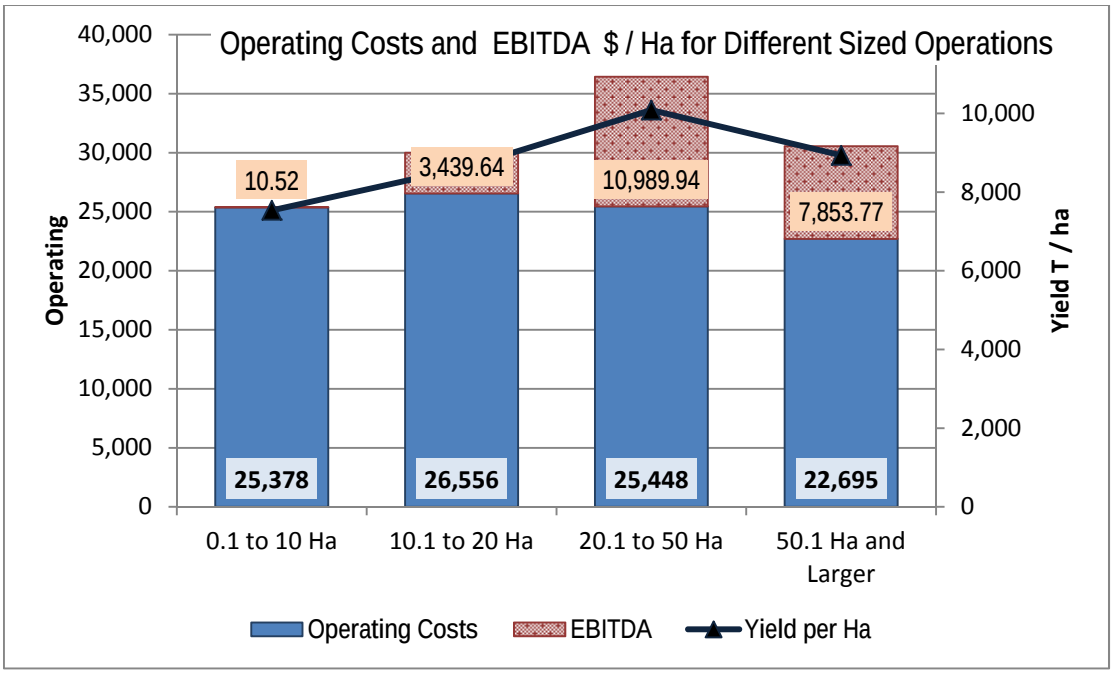


Figure 45 Size Categories – Operating Costs Per Hectare



12.1.5 OPERATING COST PER TRAY EQUIVALENT SOLD

Figure 46 Spread – Operating Costs Per Tray Sold

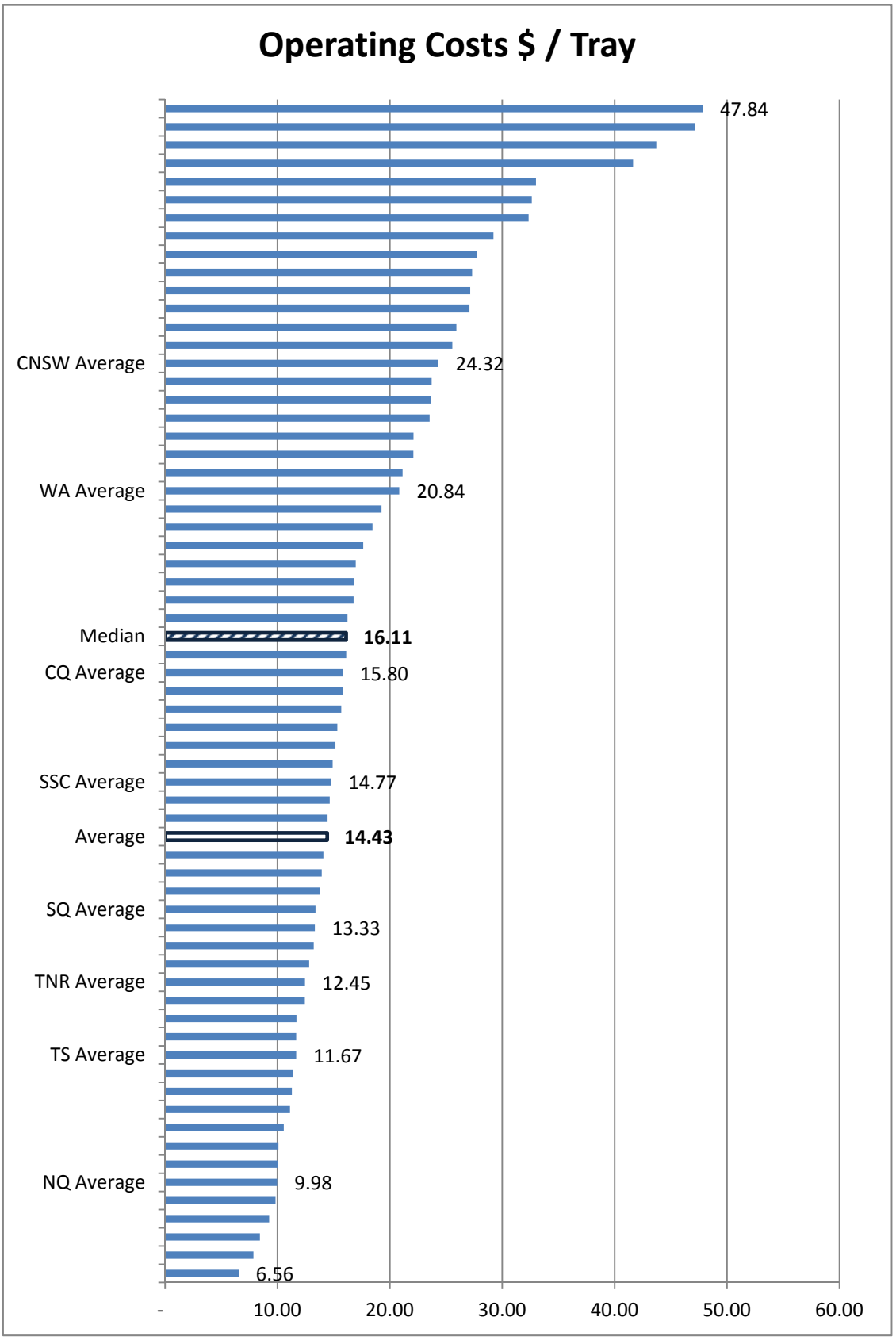


Figure 47 Regions – Operating Costs Per Tray Sold

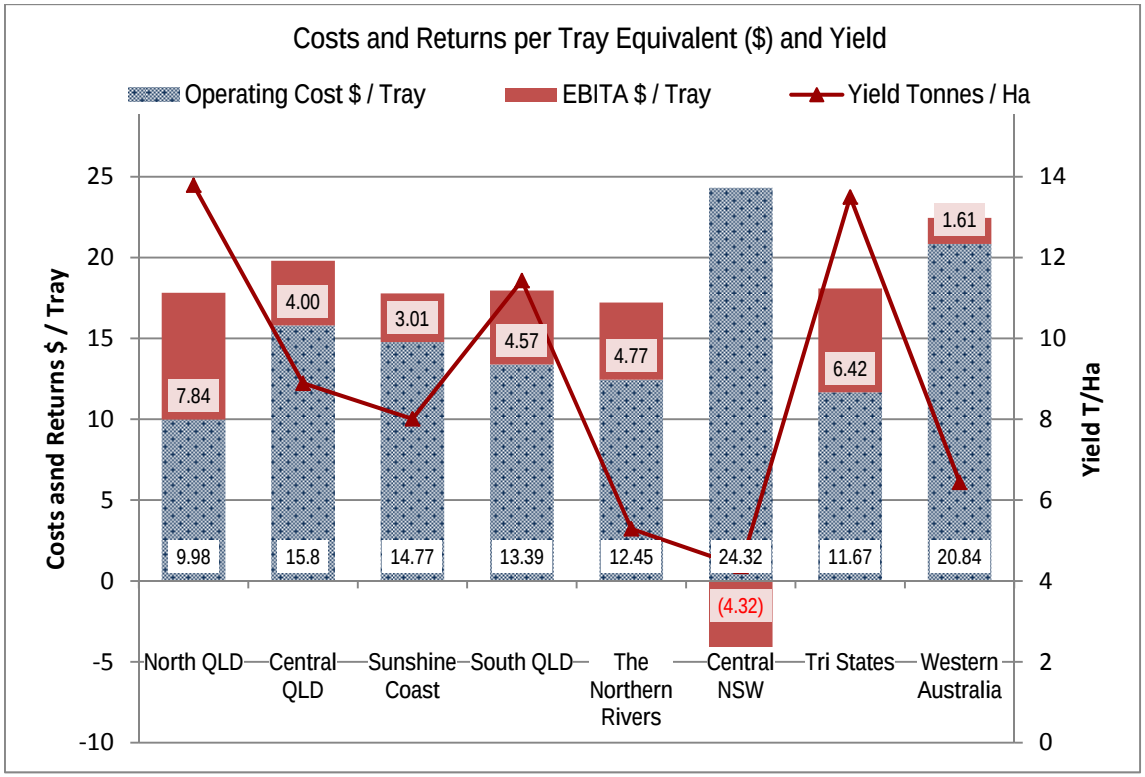
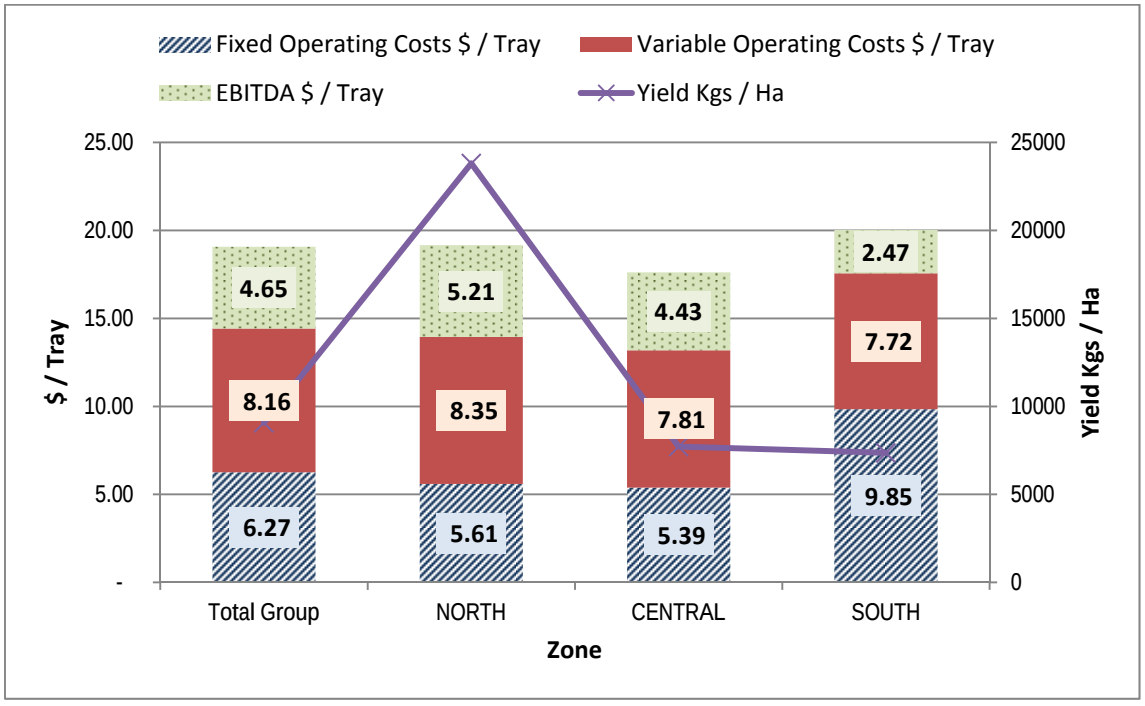


Figure 48 Size Categories – Operating Costs Per Tray Sold



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12.1.6 LABOUR USE EFFICIENCY

Figure 49 Spread – Hectares Managed Per FTE

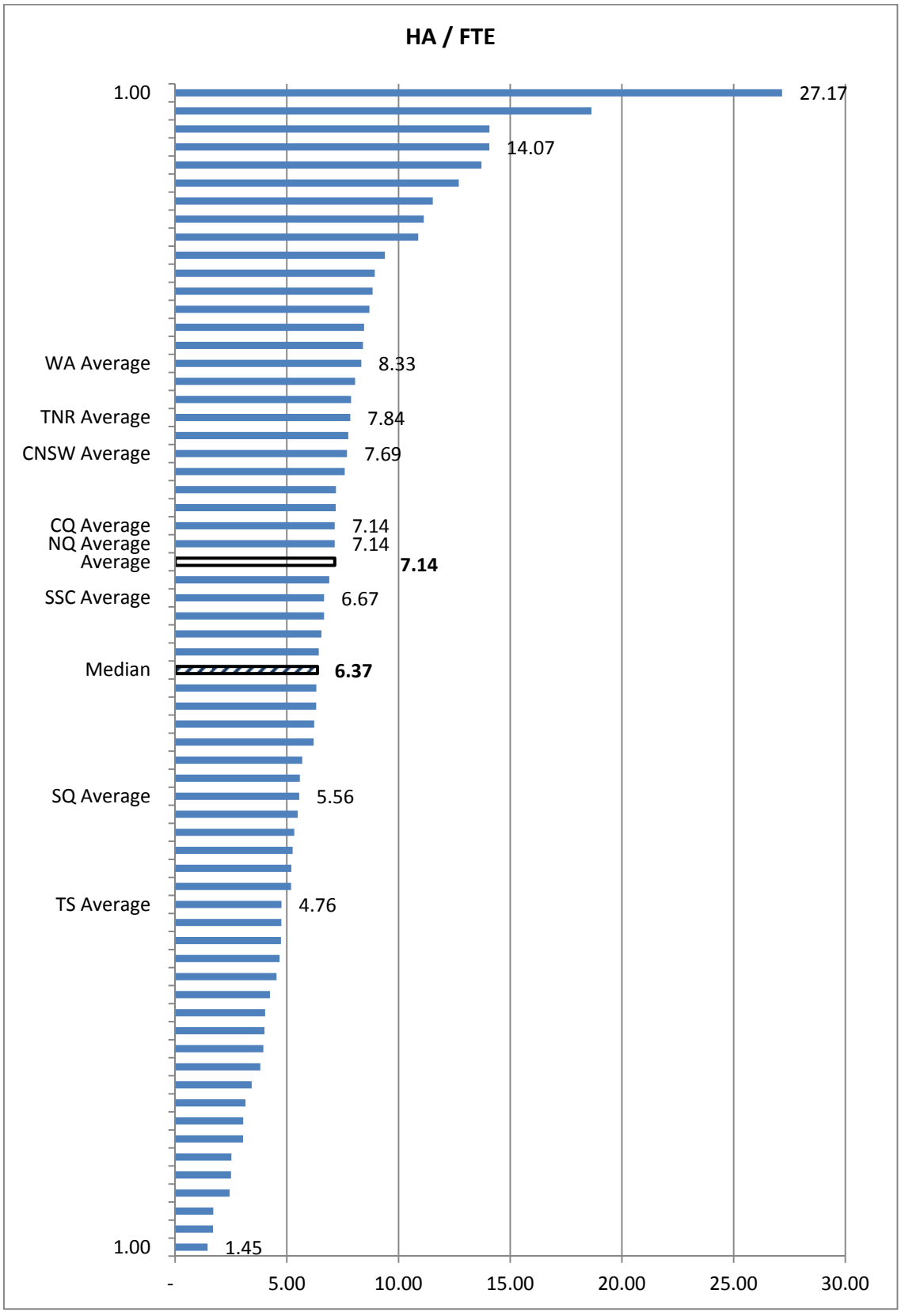


Figure 50 Regions – Hectares Managed Per FTE

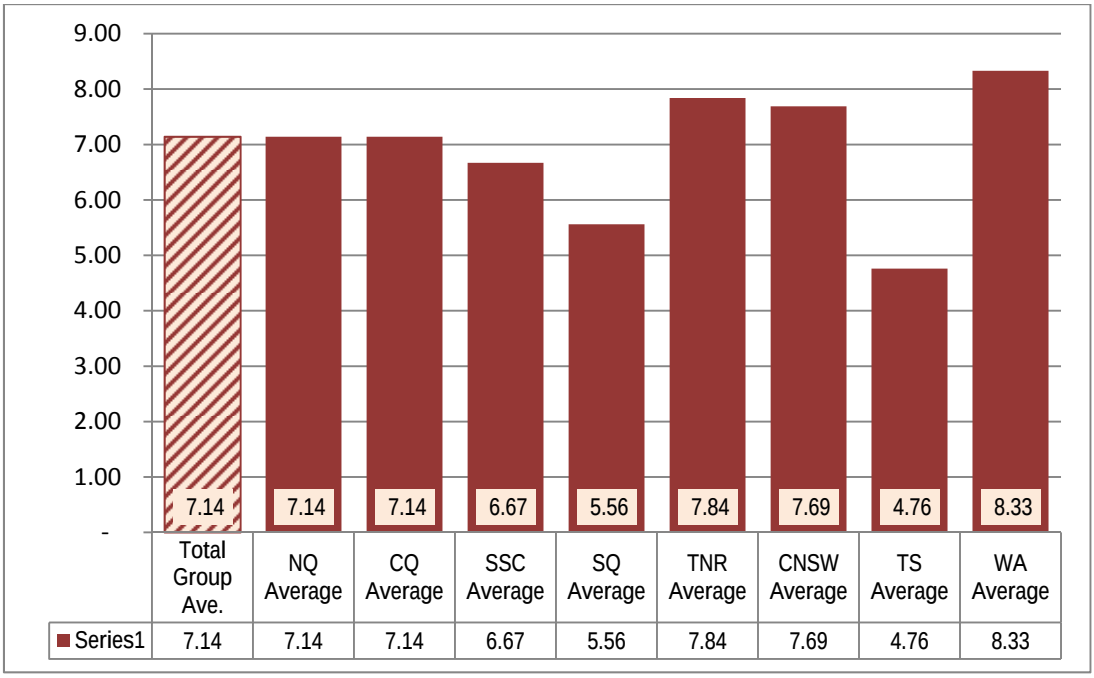
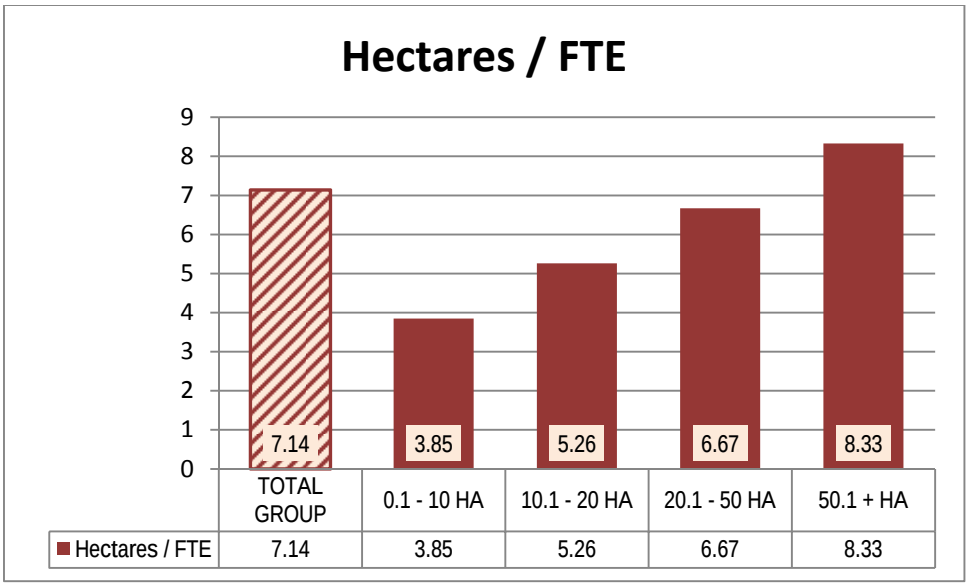


Figure 51 Size Categories – Hectares Per FTE



12.1.7 PROFITABILITY PER PRODUCING HECTARE

Figure 52 Spread – Profit Per Hectare

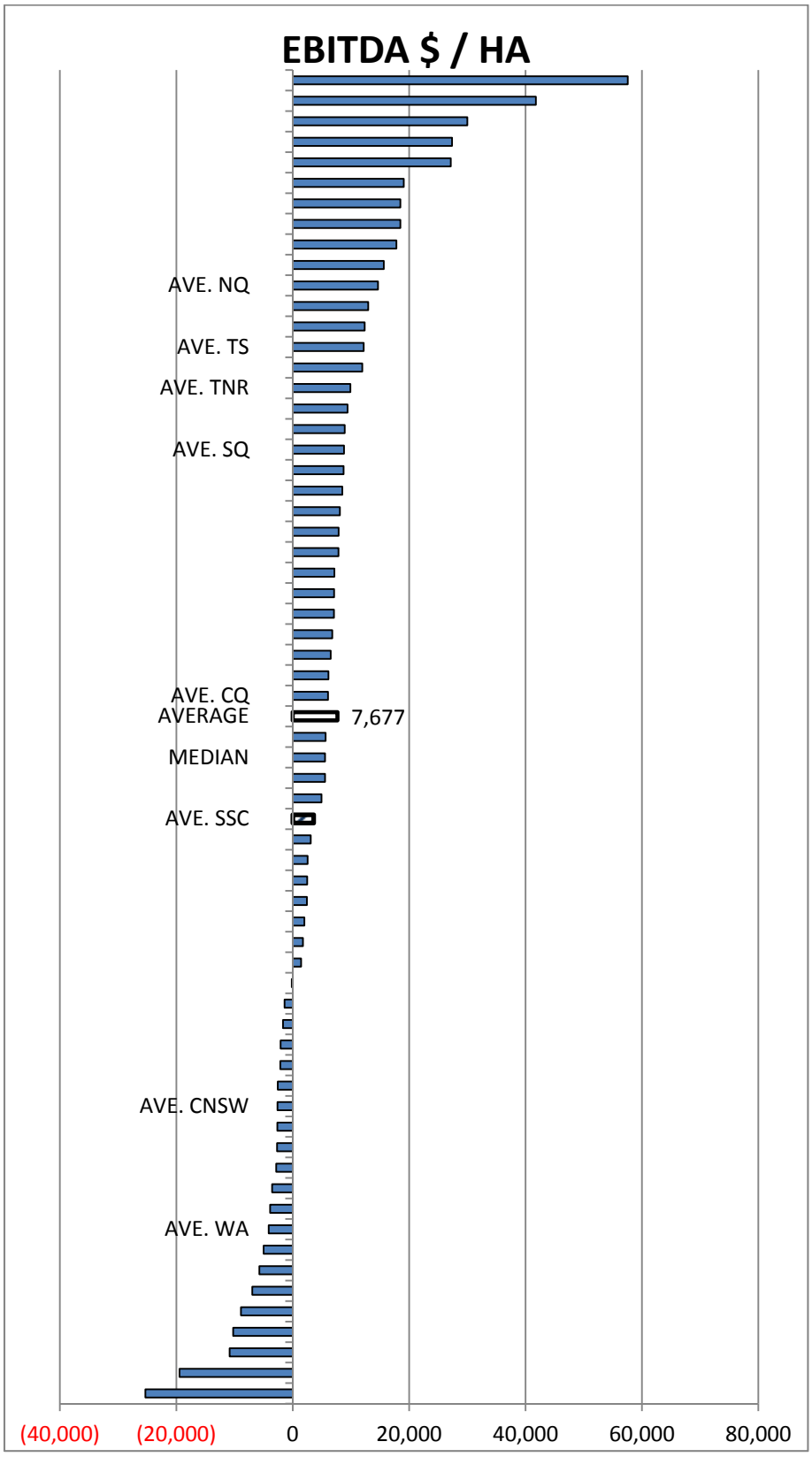


Figure 53 Regions – Profit Per Hectare

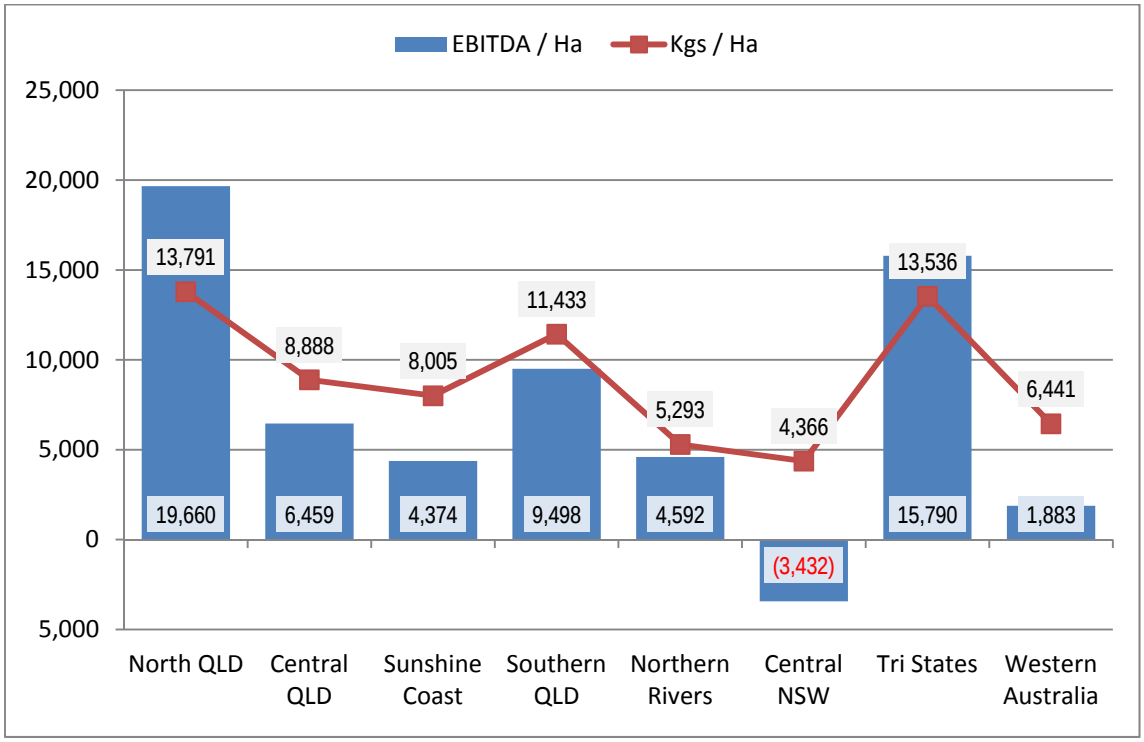
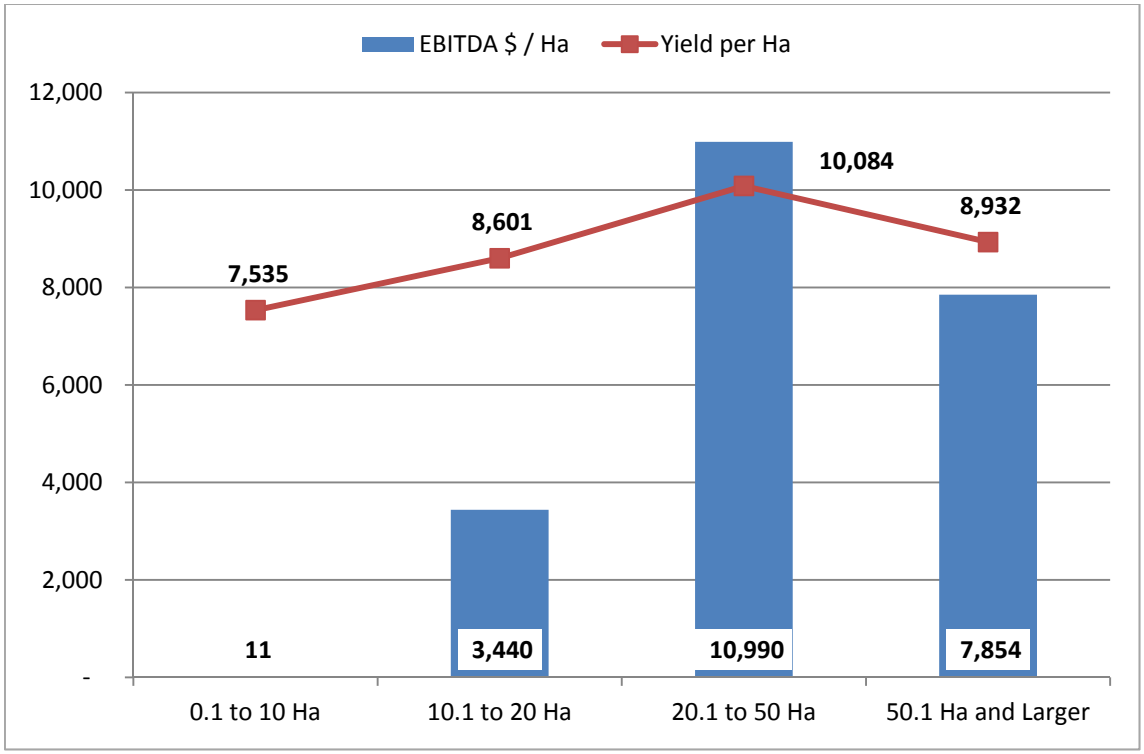


Figure 54 Size Categories – Profit Per Hectare



12.1.8 PROFITABILITY PER TRAY EQUIVALENT SOLD

Figure 55 Spread – Profit Per Tray Sold

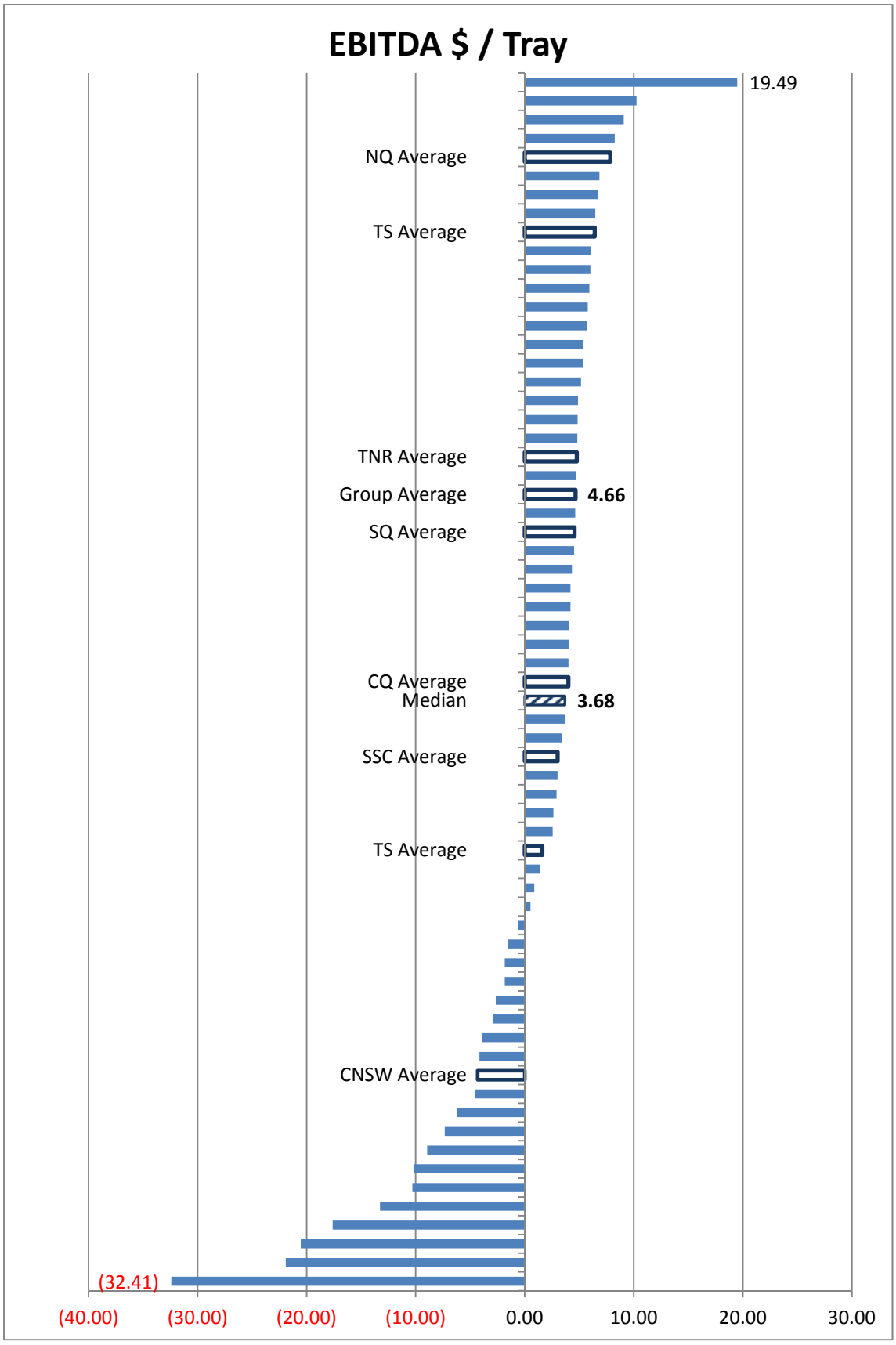


Figure 56 Regions – Profit Per Tray Sold

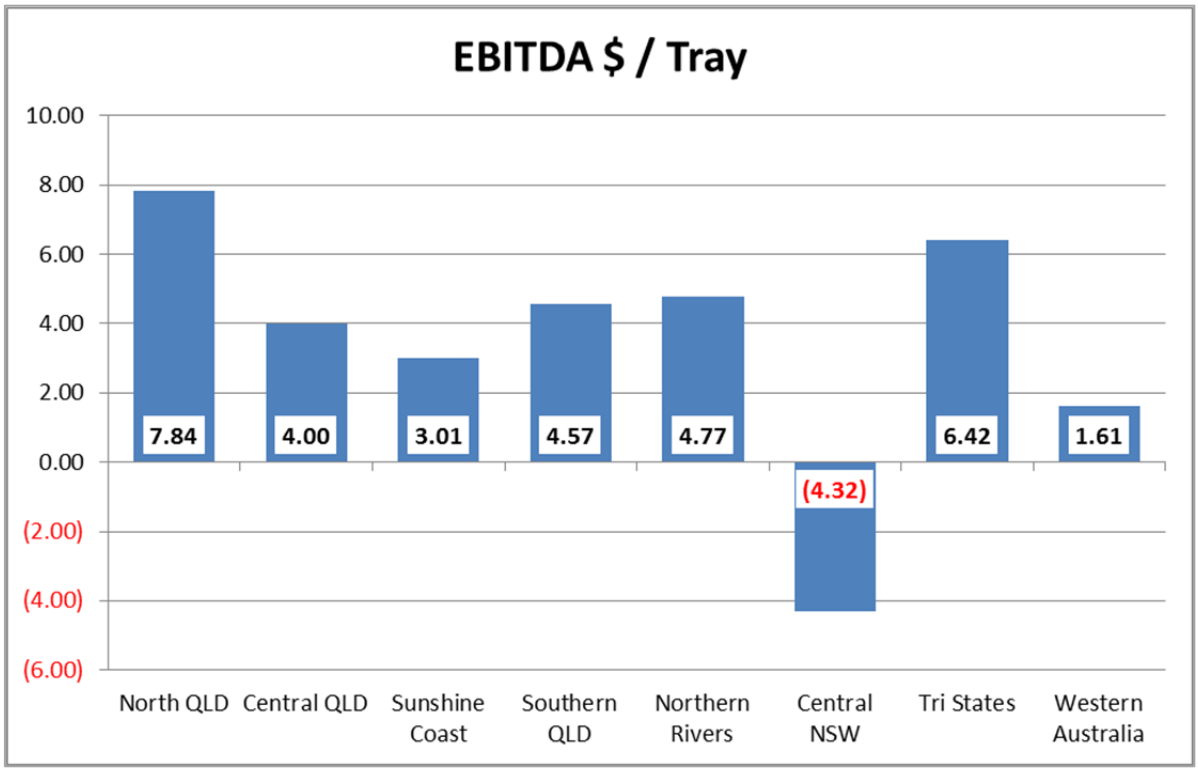
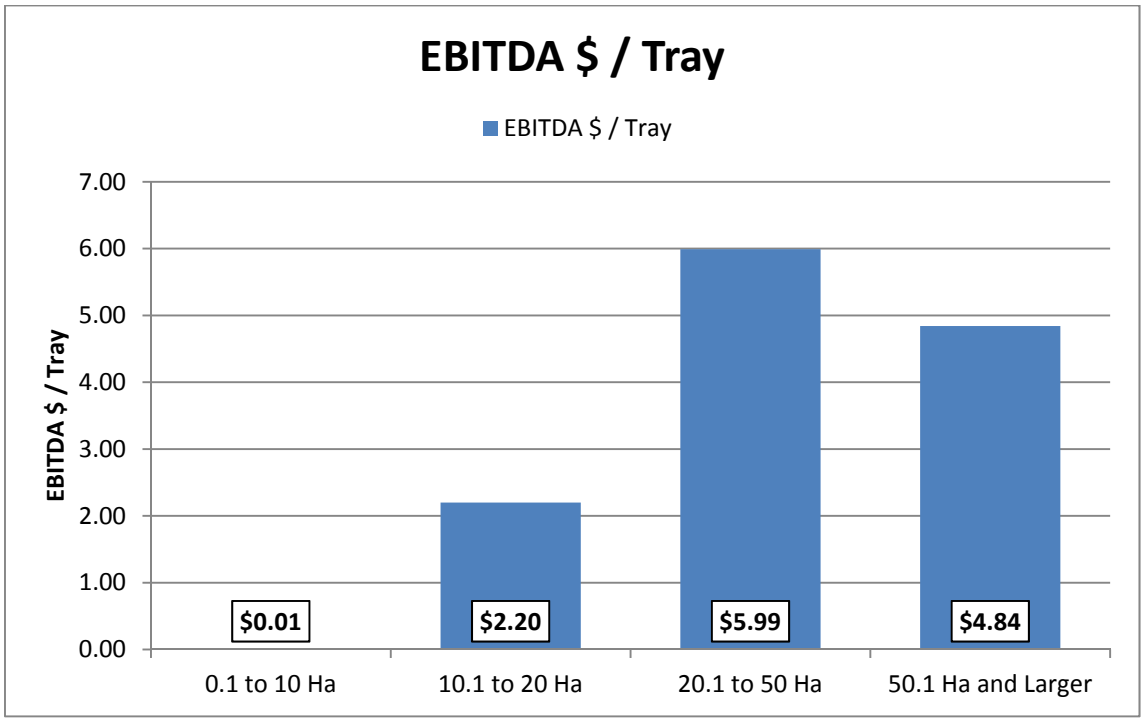


Figure 57 Size Categories – Profit Per Hectare



12.2 Farm and Management Practices Summary (Whole Group)

	Measure	Result
Labour Management Practices		
Origin of Farm Workers		
Local / Australian Workers	% of FTEs	60.78%
Asian Ethnicity	% of FTEs	9.24%
European Ethnicity	% of FTEs	27.27%
Source of Workers for the Farm		
Placed (Direct) Advertisements	% of FTEs Sourced This Way	22.04%
Walk up, Referral, Other	% of FTEs Sourced This Way	48.39%
Marketing Practices		
Produce Marketing Channel Used		
Direct to Supermarkets	% of Produce Sold	8.61%
Via Brokers	% of Produce Sold	39.30%
Through Wholesalers	% of Produce Sold	49.78%
Through Exporters or Direct to Export	% of Produce Sold	2.31%
The Primary Decision Maker About Distribution to Market Segments		
Internal Decision Makers (owners or Other)	% of Respondents	50.00%
Broker	% of Respondents	30.00%
Wholesaler	% of Respondents	20.00%
Frequency of Visiting Primary Marketer(s) / Markets		
Never	% of Respondents	30.00%
Once per Year	% of Respondents	20.00%
Twice per Year	% of Respondents	30.00%
More than Twice Per Year	% of Respondents	20.00%
Frequency of Primary Marketer(s) Visiting your Farm(s)		
Never	% of Respondents	20.00%
Once per Year	% of Respondents	70.00%
Twice per Year	% of Respondents	10.00%
Degree of Involvement / Skill In Marketing		
Low	% of Respondents	30.00%
Medium	% of Respondents	30.00%

	Measure	Result
High	% of Respondents	40.00%
Irrigation Practices		
Irrigation Method		
Micro Sprinklers	% of Respondents	90.00%
Drip Tape	% of Respondents	10.00%
Primary Irrigation Monitoring Method Used		
Visual	% of Respondents	40.00%
Tensiometers	% of Respondents	40.00%
Enviroscan Probes	% of Respondents	20.00%
Frequency of Irrigation When Irrigating		
Two or more times per day	% of Respondents	10.00%
Daily	% of Respondents	30.00%
Once every two days	% of Respondents	50.00%
Weekly	% of Respondents	0.00%
Less than Once per Week	% of Respondents	10.00%
Irrigation Volumes Applied per Ha		
Group High	Group High ML / Ha	15.00
Group Average	Group High ML / Ha	6.85
Group Low	Group High ML / Ha	1.80
Fertilizer Practices		
Frequency of Soil Analysis Testing		
Once per Year	% of Respondents	60.00%
Twice per Year	% of Respondents	0.00%
Other	% of Respondents	40.00%
Frequency of Leaf Analysis Testing		
Once per Year	% of Respondents	70.00%
Twice per Year	% of Respondents	20.00%
Other	% of Respondents	10.00%
Primary Method of Fertiliser Application		
Foliar	% of Respondents	0.00%
Solid	% of Respondents	50.00%
Fertigation	% of Respondents	50.00%
Nitrogen Applied per Ha per Annum KG		
Group High	Group High N / ha	140.00

	Measure	Result
Group Average	Group Average N / ha	85.00
Group Low	Group Low N / ha	13.00
Phosphorous Applied per Ha per Annum KG		
Group High	Group High P / ha	69.00
Group Average	Group Average P / ha	21.32
Group Low	Group Low P / ha	6.50
Potassium Applied per Ha per Annum		
Group High	Group High K / ha	131.00
Group Average	Group Average K / ha	65.54
Group Low	Group Low K / ha	12.00
Pest and Disease Control		
Frequency of Pest and Disease Spraying During Summer		
Every 2 weeks	% of Respondents	30.00%
Every 4 weeks	% of Respondents	50.00%
Other	% of Respondents	20.00%
Frequency of Pest and Disease Spraying During Winter		
Every 4 weeks	% of Respondents	10.00%
Other	% of Respondents	90.00%
Pest and Disease		
Mounds Are Used for All New Plantings	% of Respondents	30.00%
Frequency of Applying Mulch to Orchards		
Not Mulching	% of Respondents	60.00%
Yearly	% of Respondents	40.00%
% of Trees Lost to Phytophthora in Last Three Years		
Nil	% of Respondents	30.00%
5% or Less	% of Respondents	70.00%
% of Trees Lost to Causes Other Than Phytophthora in Last Three Years		
Nil	% of Respondents	50.00%
5% or Less	% of Respondents	50.00%
Phytophthora Treatment Program		
No Treatment	% of Respondents	50.00%
Needle Application	% of Respondents	40.00%
Spray Application	% of Respondents	10.00%

	Measure	Result
Once per Annum	% of Respondents	30.00%
Twice per Annum	% of Respondents	20.00%
Other	% of Respondents	50.00%
Pruning Practices		
Frequency of Mechanical Hedging		
100% per Year	% of Respondents	30.00%
50% per Year	% of Respondents	20.00%
25% per Year	% of Respondents	30.00%
Frequency of Limb Removal / Internal Hand Pruning		
100% per Year	% of Respondents	50.00%
50% per Year	% of Respondents	40.00%
25% per Year	% of Respondents	10.00%
Packing Strategy		
Produce Packed in House	% of Respondents	70.00%
Produce Packed by Contract Packer	% of Respondents	30.00%
Record Keeping		
Spray Records		
Written	% of Respondents	40.00%
Computerized	% of Respondents	50.00%
Irrigation Records		
Written	% of Respondents	30.00%
Computerized	% of Respondents	50.00%
Other	% of Respondents	10.00%
Harvest Records		
Written	% of Respondents	40.00%
Computerized	% of Respondents	50.00%
Pack Out Records		
Written	% of Respondents	40.00%
Computerized	% of Respondents	50.00%
Labour / Time Sheets		
Written	% of Respondents	70.00%
Computerized	% of Respondents	20.00%
Keeping Block by Block Records		
Spray Records	% of Respondents	70.00%

	Measure	Result
Irrigation Records	% of Respondents	60.00%
Fertiliser Applications	% of Respondents	60.00%
Harvest Yield	% of Respondents	50.00%
Financial Returns	% of Respondents	0.00%
Costs	% of Respondents	0.00%
Labour Use	% of Respondents	0.00%

12.3 Sample Comparative Analysis Report

AVOCADO INDUSTRY

BENCHMARKING PROGRAM

AVOCADO ENTERPRISE COMPARISON REPORT

Provided to Participating Growers
For Financial Year Ending
June 30 2012

For further information contact:
Howard Hall, CDI Pinnacle Management Pty Ltd
Phone: 07 3217 6466, Mobile: 0412 674083,
Email: hhall@pinnaclemanagement.com.au

This project has been funded by HAL using the Avocado R&D levy and matched funds from the Australian Government.

HAL
Horticulture Australia

CDI PINNACLE

• Group Average, Group High, Group Low

For each measure or factor included in the report the information provided includes:

Your value as provided to us or calculated from information provided
The Average for the entire group of participants
The Highest value recorded amongst participants
The Lowest value recorded amongst participants

• Fruit Grades

Premium	= Highest Grade sold to market
A Grade	= Second Highest Grade sold to market
B Grade	= Third Highest Grade sold to Market
Bulk	= All Bulk Sales treated as one Grade

• Consider Rankings In The Right Context.

If the report says that your business is above average on costs, or ranks high on costs (a low rank number), this may not necessarily mean costs are a problem. If your business is high in costs and also high in yield and profitability, then this may really be indicating that by investing more in your crop you are getting better outcomes.

Alternatively, if your business costs are low or your business has a favourable ranking in costs (e.g. a high rank number) and your returns or business outcomes are not as good as you would like, it may be that you could improve your business by investing more in inputs.

When the program is expanded to more years, it will be possible to investigate potential correlations and relationships between key actions and inputs and the outcomes achieved. In another industry for example those producers that invest more in the things that add value to their crop do in fact get better business outcomes. It is likely similar relationships may be identified in this industry.

Look at each part of the report information as part of the overall picture. In many cases it will be best to consider several aspects of the outcomes / results together.

• Marketing and Ripening Costs

The data collected from all participants has been analysed to identify the proportion of the produce sold by the participants that was distributed via each possible distribution channel, being Direct to Supermarket Chains, Via Brokers, Via Wholesalers, Vis export channels, etc. With this information a weighted average figure (% of Gross Sales Value into Supermarket) was calculated. Where participants did not reflect at least the weighted average % for marketing and ripening fees, the weighted average % for marketing and ripening fees has been included in financials.

• Unpaid Family Labour Costs and FTEs

In many farming businesses family members are working in the business without being paid (in the accounts). An additional $40,000 per annum has been added to the accounts for every Family Full Time Employee Equivalent (Family FTE), or part thereof, that is working in the business without pay being recorded in the business.

A Family FTE is defined herein as a family member that works for 45 hours per week, for 48 weeks a year (2,160 hours per annum). (At an hourly pay rate of $20 per hour an FTE of labour supplied is estimated to cost $43,200 plus super and relevant on-costs.)
For one example, if a family member works without pay for say 6 weeks a year full time during harvest (45 hours per week for 6 weeks), then this has been treated as 6/52 (11.5%) of a family FTE.

Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Terms and Definitions Used	
Average	The average value reported amongst all participants that contributed information used in this measure / descriptor
EBIT	Earnings Before Interest and Tax (Net Operating Profit + Interest and Finance Costs)
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation (EBIT + Depreciation and Amortisation)
Farm Gate Cash Revenue	Gross Sales Revenue minus Freight , Marketing and Ripening Costs
Farm Gate Cash Operating Costs	Operating Costs minus Freight, Marketing and Ripening Costs
FTE / FTEs	Full Time Employee Equivalent. Treated as one full time employee working 45 hours per week for 48 weeks per year (2,160 hours = 1 FTE)
Gross Sales Revenue	Gross sales achieved before any costs (before marketing fees, freight, PBR fees, brokerage etc. and all other costs)
Growing Costs, Overheads & Other Costs	All costs except costs referred to as 'To-Market Costs' (Below)
High / Highest	The highest value reported amongst all participants that contributed information used in this measure / descriptor
Indicative Pay Rate	Where pay details are not provided an hourly rate of $20 per hour plus Superannuation has been used.
Low / Lowest	The lowest value reported amongst all participants that contributed information used in this measure / descriptor
Operating Costs (Excluding Interest, Tax, Depreciation and Amortisation	Total Costs **excluding** Interest, Tax, Depreciation and Amortisation
Net Profit Before Tax	Gross Sales Revenue achieved less Total Costs and Before Tax
Producing Hectare	Hectare of planted trees that were harvested in the 2011 / 2012 harvest season
Rank	Rank 1 is the highest value recorded amongst participants, higher ranking numbers are the smallest numbers recorded for that measure / descriptor
To-Market Costs	Picking Labour, Packing Labour, Packaging Costs, Power and Gas Costs, Contract Packing Fees, Outgoing Freight Costs, Marketing and Ripening Costs.
Total Costs	All costs incurred (including marketing fees, freight, PBR fees, brokerage etc., interest [where provided], depreciation [where provided], amortisation [where provided] and all other costs)
Unallocated (Paid) Owners Labour Costs	Where owners are paid in the financial accounts of the business this labour has not been allocated to a function (e.g. pruning), and left unallocated – applying across the entire business.
Unpaid Owners Wages	Allocated cost to cover the time spent working in the business by family members who are not paid in the financial records of the business
5.5 KG Tray Equivalent	Total Kgs of fresh produce sold divided by 5.5 = 5.5KG Tray equivalents (where it assists in analysis, juice / processing fruit may also be referred to in 5.5Kg equivalents)

Sample Average					801		
	Unit	Your Value	Group Average	Group High	Group Low	Your Rank in Group	Total Number in Group (Count)
1. ENTERPRISE INFORMATION							
Total Producing Trees	Trees	7,575.00					
Total Producing Hectares	Ha	40.00					
Average Producing Trees / Hectare	Trees / Ha	189.38					
Total Trees (Producing and Immature)	Trees	7,575.00					
Total Hectares Planted (Producing and Immature)	Ha	40.00					
Total KGS Harvested, Packed and Sold	Kgs	377,294.50					
Total KGS Sold as Juice, Oil, Processing	Kgs	0.00					
Total KGS Harvested	Kgs	377,294.50					
Total Trays (5.5 Kg Equivalent) Harvested Packed and Sold	Trays	68,599.00					
Total Kgs Harvested / Producing Tree	Kg / Tree	49.81	48.36	184.45	5.35	20	56
Total 5.5 KG Trays Equivalent Harvested / Producing Tree	Trays / Tree	9.06	8.79	33.54	0.97	20	56
Total KGS Harvested per Producing Hectare	Kgs / Ha	9,432.36	9,056.00	25,295.35	1,019.33	20	56
Total 5.5 KG Trays (Equivalent) Harvested per Producing Hectare	Trays / Ha	1,714.98	1,646.00	4,599.15	185.33	20	56
Average Price Achieved $ / 5.5 KG Tray Equivalent of Market Fruit	$ / 5.5 Kg	$17.57	$19.09	$28.39	$7.09	34	56
Average Age of Producing Orchards	Years	13.00	12.97	30.00	5.00		
2. BUSINESS SCALE AND OUTCOMES							
Gross Sales Revenue (Before Marketing & Ripening Costs) $	$	$1,320,218.00	$1,271,878.19				
Total Costs	$	$1,026,157.00	$1,007,685.11				
NET PROFIT BEFORE TAX	$	$294,061.00	$264,193.09				
EBIT $	$	$321,075.00	$291,207.84				

Sample Average					801		
	Unit	Your Value	Group Average	Group High	Group Low	Your Rank in Group	Total Number in Group (Count)
Total Operating Costs (Excluding Interest and Depreciation)	$	$979,432.00	$960,959.52			10	56
EBITDA $	$	$340,786.00	$310,918.67				
Operating Costs as % of Gross Sales Revenue	%	74.19%	75.55%	310.05%	36.67%		
3. PACK OUT							
% of Packed Fruit Sold as Premium Grade %	%	75.20%	75.00%	100.00%	3.23%	28	56
% of Packed Fruit Sold as A Grade %	%	24.80%	17.69%	100.00%	4.84%		
% of Packed Fruit Sold as B Grade %	%	0.00%	11.11%	43.05%	0.01%		
% of Packed Fruit Sold as Bulk %	%	0.00%	0.01%	1.31%	1.31%		
% of Harvest Sold as Packed Fruit %	%	100.00%	99.22%	100.00%	90.18%	51	56
% of Total Harvest Sold as Juice or Processing	%	0.00%	0.78%	9.82%	0.43%		
% of Market Fruit Sold as XLarge (14, 16) %	%	11.78%	5.63%	21.84%	0.63%		
% of Market Fruit Sold as Large (18, 20) %	%	38.20%	27.76%	59.69%	9.74%	13	56
% of Market Fruit Sold as Medium (22, 23, 25) %	%	23.27%	29.84%	65.38%	1.36%	48	56
% of Market Fruit Sold as Small (28, 30, and smaller) %	%	26.75%	37.43%	83.78%	5.57%	36	56
4. SELECTED LABOUR USE MEASURES							
Total FTEs Employed / Producing Ha	FTE / Ha	0.14	0.14	0.69	0.03	35	56
Gross Sales Revenue Achieved Per Total FTE	$ / FTE	$231,617.19	$225,210.84	$600,071.43	$15,141.92	15	56
EBITDA Achieved Per Total FTE	$ / FTE	$59,787.02	$55,054.21	$307,081.62	-$140,186.61	14	56
5. INDICATOR COST CENTRES							
Chemicals & Fertilizers as % of Gross Sales Revenue (Before Marketing and Ripening Costs are Deducted)	%	7.71%	6.46%	55.97%	1.65%	24	56
Employment and Contracting Costs as % of Gross Sales Revenue (Before Marketing and Ripening Costs are Deducted)	%	27.67%	29.31%	174.56%	9.64%	44	56
6. PROFITABILITY PER PRODUCING HA							
Total Sales Revenue	$ / Producing Ha	$33,005.45	$31,435.91	$90,921.63	$2,107.25	19	56
Total Costs	$ / Producing Ha	$25,653.93	$23,759.00	$63,525.00	$4,795.92		
Net Profit (Before Tax)	$ / Producing Ha	$7,351.53	$6,535.65	$49,915.00	-$37,498.75		

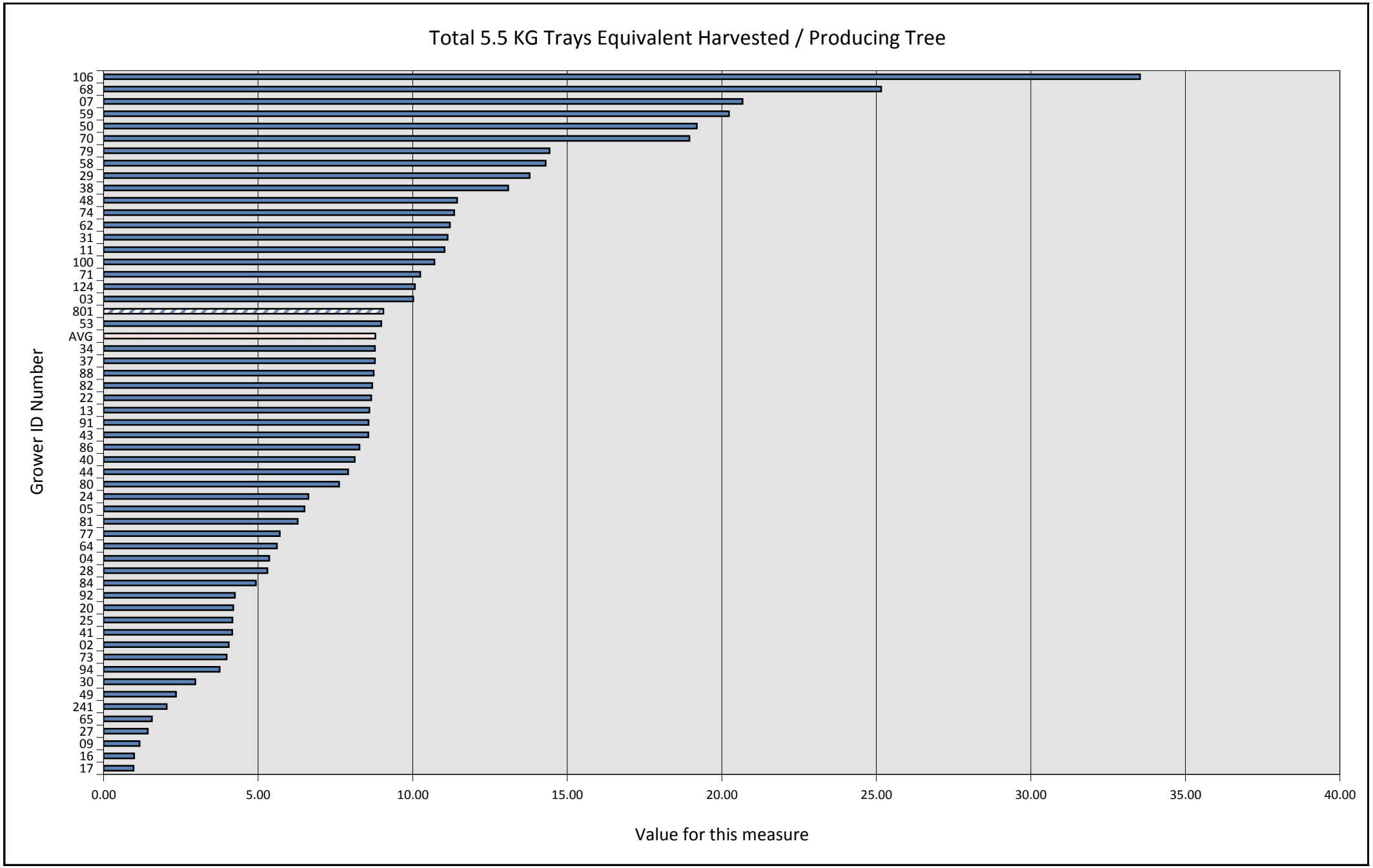
Sample Average					801		
	Unit	Your Value	Group Average	Group High	Group Low	Your Rank in Group	Total Number in Group (Count)
EBIT	$ / Producing Ha	$8,026.88	$7,203.94	$57,577.80	-$30,836.25		
Total Operating Costs (Excluding Interest and Depreciation)	$ / Producing Ha	$24,485.80	$23,772.36	$51,343.13	$4,795.92	28	56
EBITDA	$ / Producing Ha	$8,519.65	$7,677.45	$57,577.80	-$25,316.88	17	56
Total Farm Gate Operating Revenue (After Freight, Marketing, Ripening Costs Deducted) (FARM GATE CASH REVENUE)	$ / Producing Ha	$24,883.33	$24,802.76	$72,361.02	$1,960.25		
Total Farm Gate Operating Costs (Excl. Freight, Marketing, Ripening Costs Deducted)(FARM GATE CASH COST)	$ / Producing Ha	$16,363.68	$17,111.21	$45,565.00	$3,758.86		
7. COSTS PER PRODUCING HA							
General Expenses	$ / Producing Ha	$957.88	$1,019.61	$5,511.85	$69.71	25	56
Consultants And Contractor Fees	$ / Producing Ha	$152.10	$150.51	$3,236.25	$16.59	11	56
Contract Packing Fees	$ / Producing Ha	$2,272.20	$2,248.40	$10,548.88	$389.47	18	56
Chemical and Fertiliser Costs	$ / Producing Ha	$2,546.10	$2,033.50	$6,848.81	$206.57	22	56
Power & Gas Costs	$ / Producing Ha	$399.43	$346.64	$2,212.82	$23.25	25	56
Freight Costs	$ / Producing Ha	$2,316.43	$2,292.17	$8,905.29	$127.70	19	56
Fuel & Oil Costs	$ / Producing Ha	$539.65	$533.99	$1,969.03	$71.43	28	56
Marketing & Ripening Costs	$ / Producing Ha	$5,805.70	$4,368.99	$14,090.91	$389.89	10	56
Packaging and Pallet Costs	$ / Producing Ha	$2,768.85	$2,739.84	$7,893.49	$80.76	25	56
Employment / Labour Costs	$ / Producing Ha	$6,709.75	$6,823.87	$33,653.75	$141.30	34	56
Water Costs	$ / Producing Ha	$218.65	$216.36	$2,288.73	$7.17	14	56
Insurance Costs	$ / Producing Ha	$208.98	$206.79	$2,832.88	$50.07	33	56
Finance Costs	$ / Producing Ha	$675.35	$668.29	$26,438.71	$1.10	25	56
Depreciation and Amortisation Costs	$ / Producing Ha	$492.78	$487.61	$5,519.38	$460.56	20	56
Rates Levies, Licenses, Memberships, Registrations	$ / Producing Ha	$782.13	$773.92	$2,484.42	$111.11	26	56
Motor Vehicles	$ / Producing Ha	$150.80	$149.22	$2,817.56	$11.69	25	56
Repairs & Replacements	$ / Producing Ha	$1,251.28	$1,238.17	$4,626.36	$193.23	27	56
Royalties & PVR Costs	$ / Producing Ha	$0.00	$0.00	$0.00	$0.00	56	56
8. DIFFERENTIATED LABOUR COSTS PER PRODUCING HA							
Unallocated Owners Labour Costs	$ / Producing Ha	$740.18	$732.44	$17,440.00	$39.22	33	56
General / Farm Labour Costs	$ / Producing Ha	$1,884.93	$1,864.70	$12,213.82	$250.00	23	56

Sample Average					801		
	Unit	Your Value	Group Average	Group High	Group Low	Your Rank in Group	Total Number in Group (Count)
Pruning Labour Costs	$ / Producing Ha	$621.78	$615.26	$2,509.44	$170.12	12	56
Picking Labour Costs	$ / Producing Ha	$2,442.50	$2,416.92	$8,141.79	$141.30	15	56
Packing Labour Costs	$ / Producing Ha	$473.78	$468.81	$3,737.21	$29.38	21	56
Admin. / Other / Marketing Labour Costs	$ / Producing Ha	$280.55	$277.62	$3,222.76	$37.36	17	56
9. PROFITABILITY PER 5.5 Kg TRAY EQUIVALENT							
Total Sales Revenue	$ / Tray Sold	$19.25	$19.09	$30.78	$9.05	33	56
Total Costs	$ / Tray Sold	$14.96	$15.13	$60.26	$6.56	35	56
Net Profit Before Tax	$ / Tray Sold	$4.29	$3.97	$16.90	-$44.84	19	56
EBIT	$ / Tray Sold	$4.68	$4.37	$19.49	-$38.40	17	56
Total Operating Costs (Excluding Interest and Depreciation)	$ / Tray Sold	$14.28	$14.43	$47.84	$6.56	37	56
EBITDA	$ / Tray Sold	$4.97	$4.67	$19.49	-$32.41	15	56
Total Operating Costs as % of Gross Sales Revenue	%	74.19%	75.55%	310.05%	36.67%	41	56
EBITDA as % of Gross Sales Revenue	%	25.81%	24.45%	63.33%	-210.05%	16	56
Total Farm Gate Operating Revenue (FARM GATE CASH REVENUE)	$ / Tray Sold	$14.51	$15.05	$24.49	$7.39	36	56
Total Farm Gate Operating Costs (FARM GATE CASH COSTS)	$ / Tray Sold	$9.54	$10.38	$44.56	$5.00	42	56
10. GROWING COSTS, OVERHEADS, OTHER COSTS PER 5.5 Kg TRAY EQUIVALENT							
General Expenses	$ / Tray Sold	$0.56	$0.62	$11.81	$0.05	32	56
Consultants And Contractor Fees	$ / Tray Sold	$0.09	$0.09	$2.84	$0.01	15	56
Chemical and Fertiliser Costs	$ / Tray Sold	$1.48	$1.23	$14.12	$0.28	24	56
Fuel & Oil Costs	$ / Tray Sold	$0.31	$0.32	$1.97	$0.03	34	56
Employment / Labour Costs	$ / Tray Sold	$3.91	$4.14	$27.29	$0.49	38	56
Water Costs	$ / Tray Sold	$0.13	$0.13	$1.59	$0.01	19	56
Insurance Costs	$ / Tray Sold	$0.12	$0.13	$2.28	$0.03	35	56
Finance Costs	$ / Tray Sold	$0.39	$0.41	$26.49	$0.00	26	56
Depreciation and Amortisation Costs	$ / Tray Sold	$0.29	$0.30	$6.00	$0.29	22	56
Rates, Levies, Licenses, Memberships, Registrations	$ / Tray Sold	$0.46	$0.47	$2.13	$0.23	39	56
Motor Vehicles	$ / Tray Sold	$0.09	$0.09	$2.43	$0.01	26	56

Sample Average					801		
	Unit	Your Value	Group Average	Group High	Group Low	Your Rank in Group	Total Number in Group (Count)
Repairs & Replacements	$ / Tray Sold	$0.73	$0.75	$6.18	$0.10	34	56
Royalties & PVR Costs	$ / Tray Sold	$0.00	$0.00	$0.00	$0.00	56	56
TOTAL GROWING, OVERHEADS AND OTHER COSTS	$ / Tray Sold	$8.56	$8.68	$53.96	$3.79	38	56
11. "TO-MARKET" COSTS (PICK, PACK, FREIGHT & MARKETING) PER 5.5 Kg TRAY EQUIVALENT							
Picking Labour	$ / Tray Sold	$1.42	$1.47	$7.37	$0.21	23	56
Packing Labour	$ / Tray Sold	$0.28	$0.28	$3.01	$0.02	22	56
Packaging Costs	$ / Tray Sold	$1.61	$1.66	$3.34	$0.09	39	56
Power and Gas Costs	$ / Tray Sold	$0.23	$0.21	$2.68	$0.02	29	56
Contract Packing Costs	$ / Tray Sold	$1.32	$1.36	$7.40	$0.80	25	56
Freight Costs	$ / Tray Sold	$1.35	$1.39	$4.60	$0.24	32	56
Marketing and Ripening Costs	$ / Tray Sold	$3.39	$2.65	$4.77	$0.12	16	56
TOTAL TO-MARKET COSTS	$ / Tray Sold	$9.61	$9.03	$16.49	$2.60	26	56
12. DIFFERENTIATED LABOUR COSTS PER 5.5 Kg TRAY EQUIVALENT							
Unallocated Owners Labour Costs	$ / Tray Sold	$0.43	$0.44	$19.43	$0.03	36	56
General / Farm Labour Costs	$ / Tray Sold	$1.10	$1.13	$13.37	$0.12	30	56
Pruning Labour Costs	$ / Tray Sold	$0.36	$0.37	$1.60	$0.05	19	56
Picking Labour Costs	$ / Tray Sold	$1.42	$1.47	$7.37	$0.21	23	56
Packing Labour Costs	$ / Tray Sold	$0.28	$0.28	$3.01	$0.02	22	56
admin / Other / Marketing Labour Costs	$ / Tray Sold	$0.16	$0.17	$2.92	$0.02	20	56

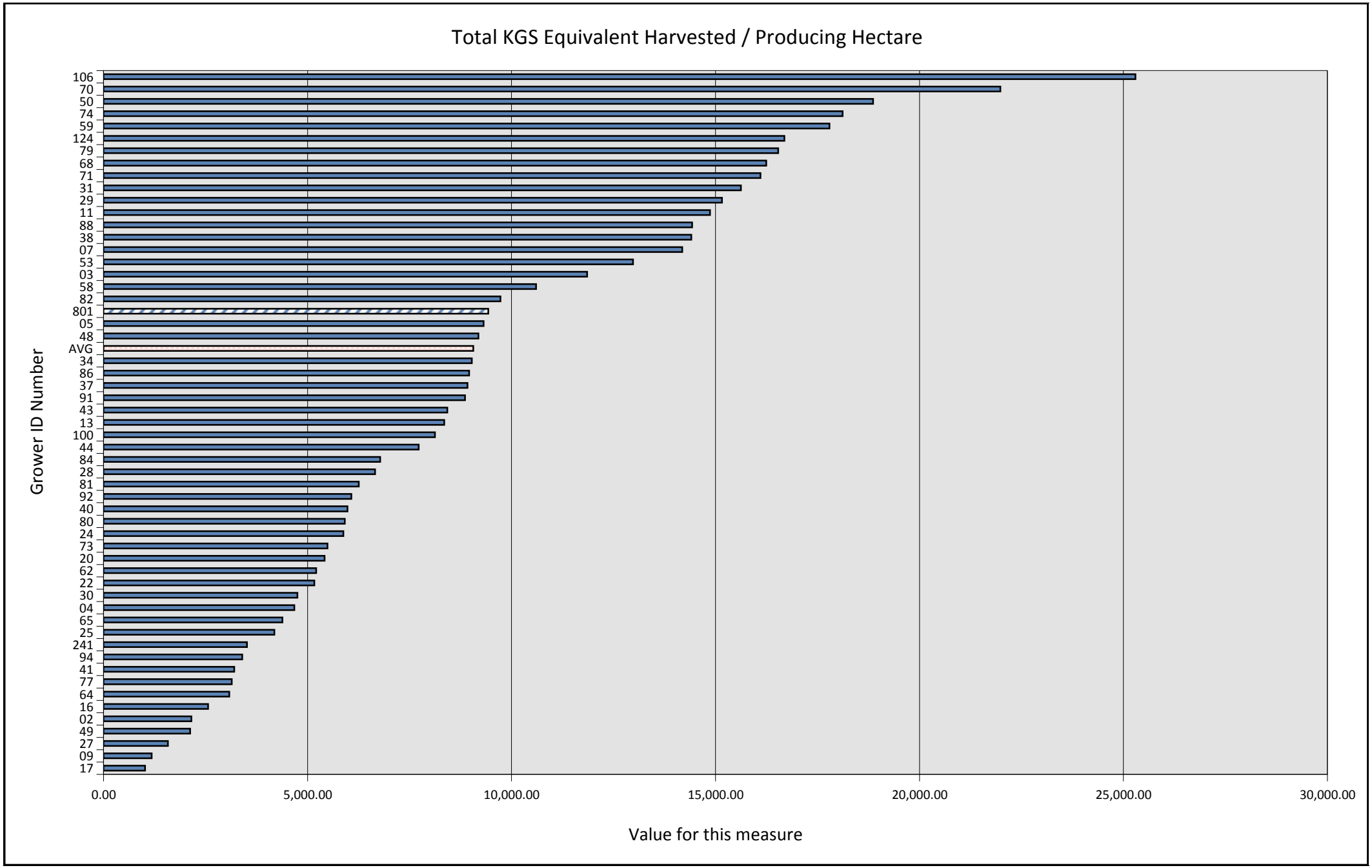
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



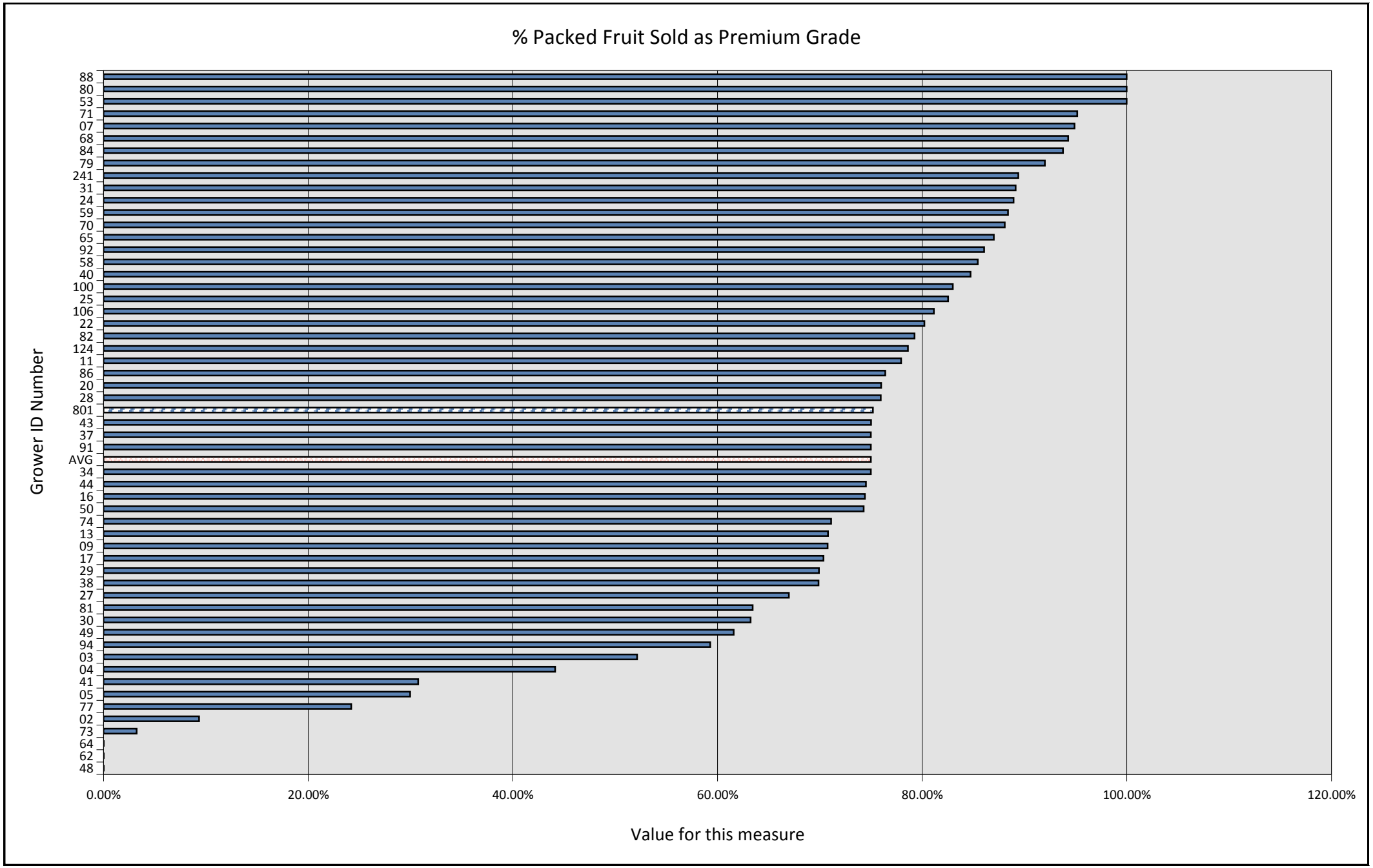
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



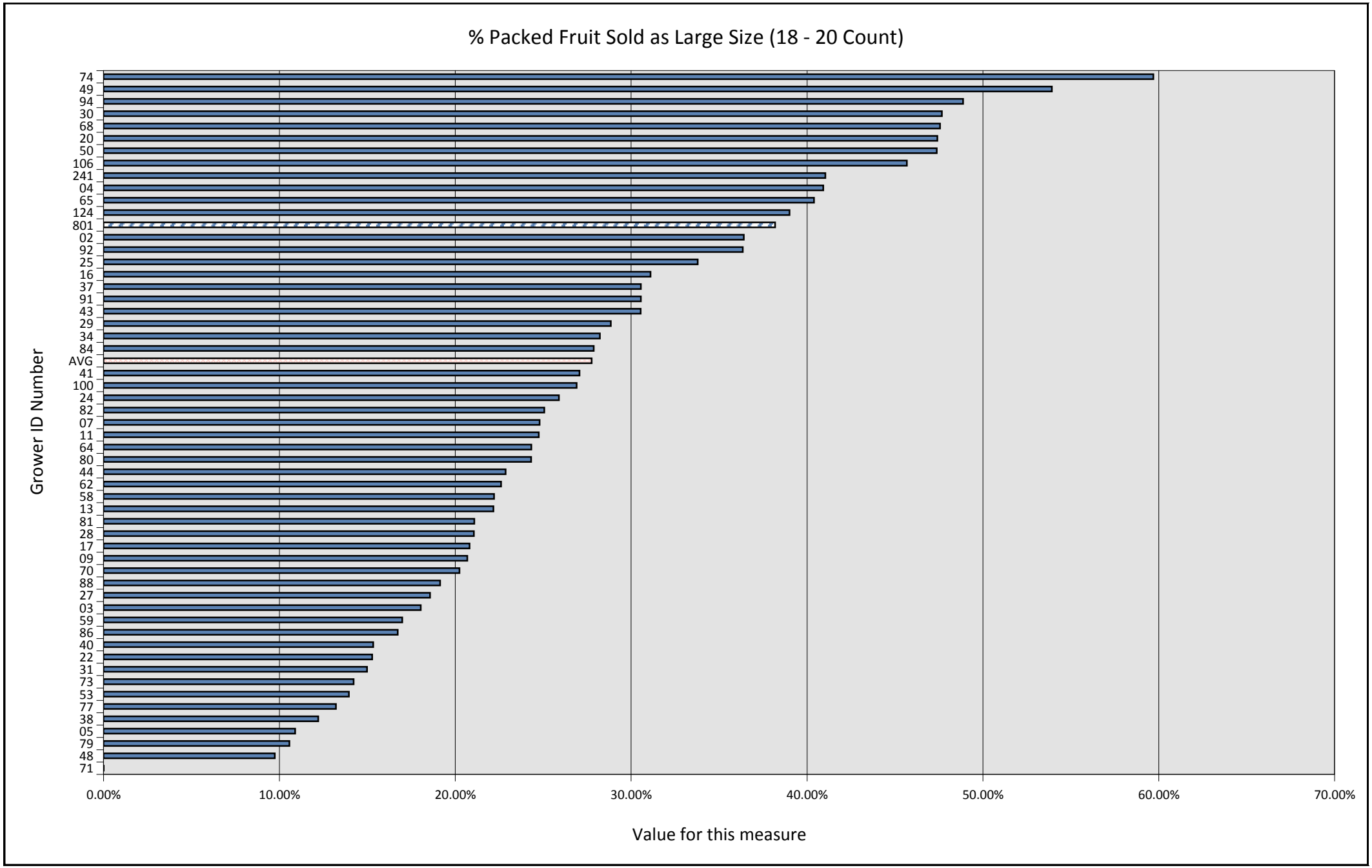
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



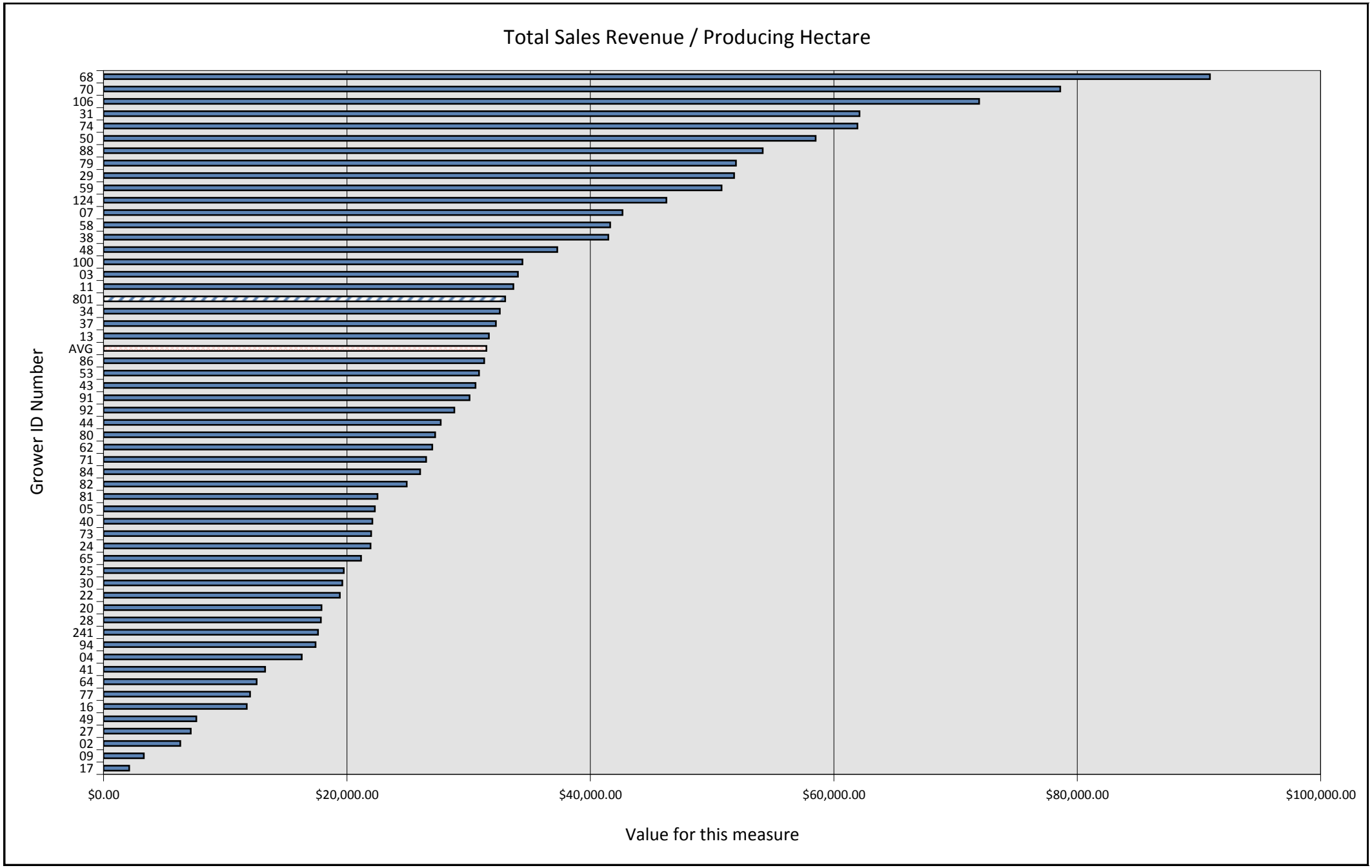
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



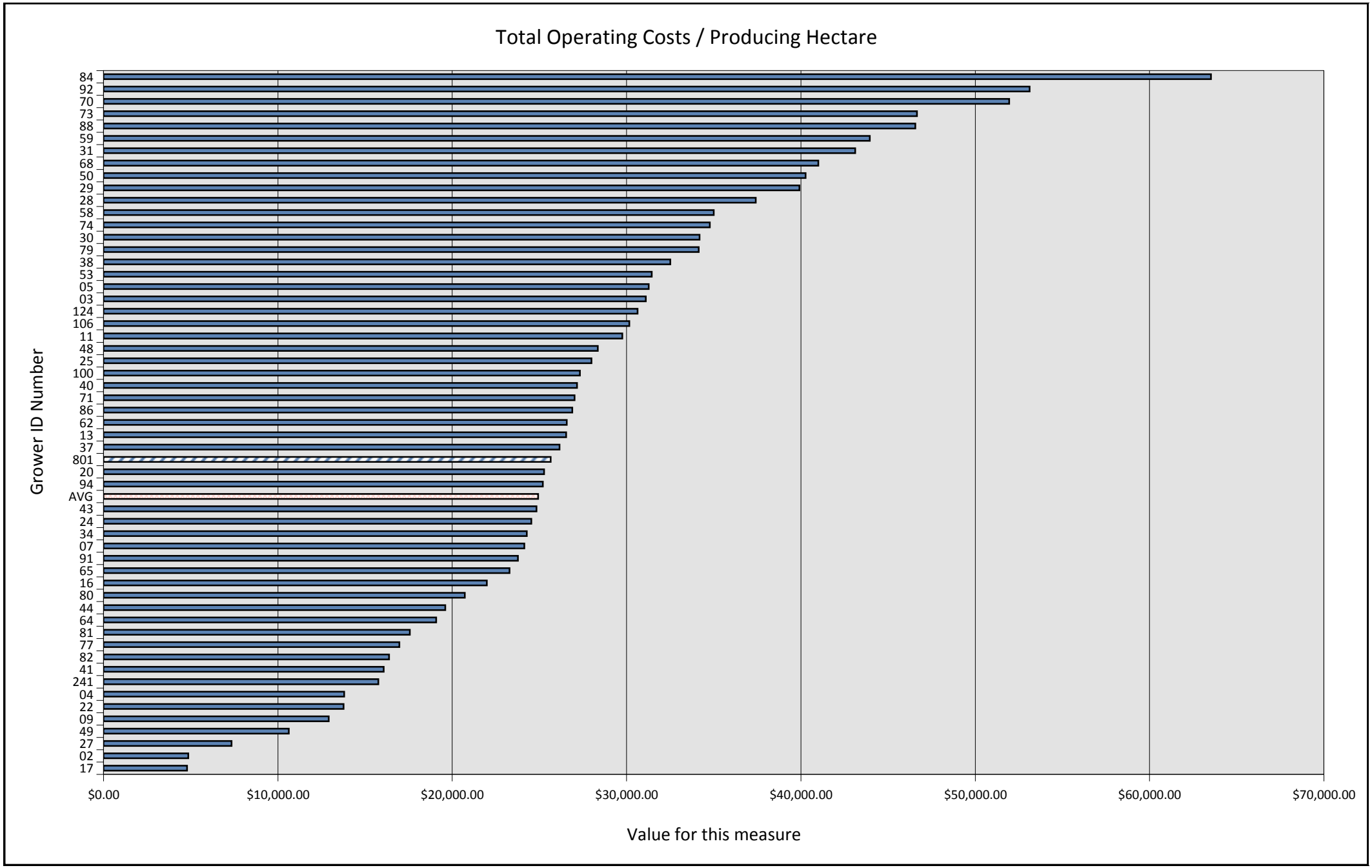
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



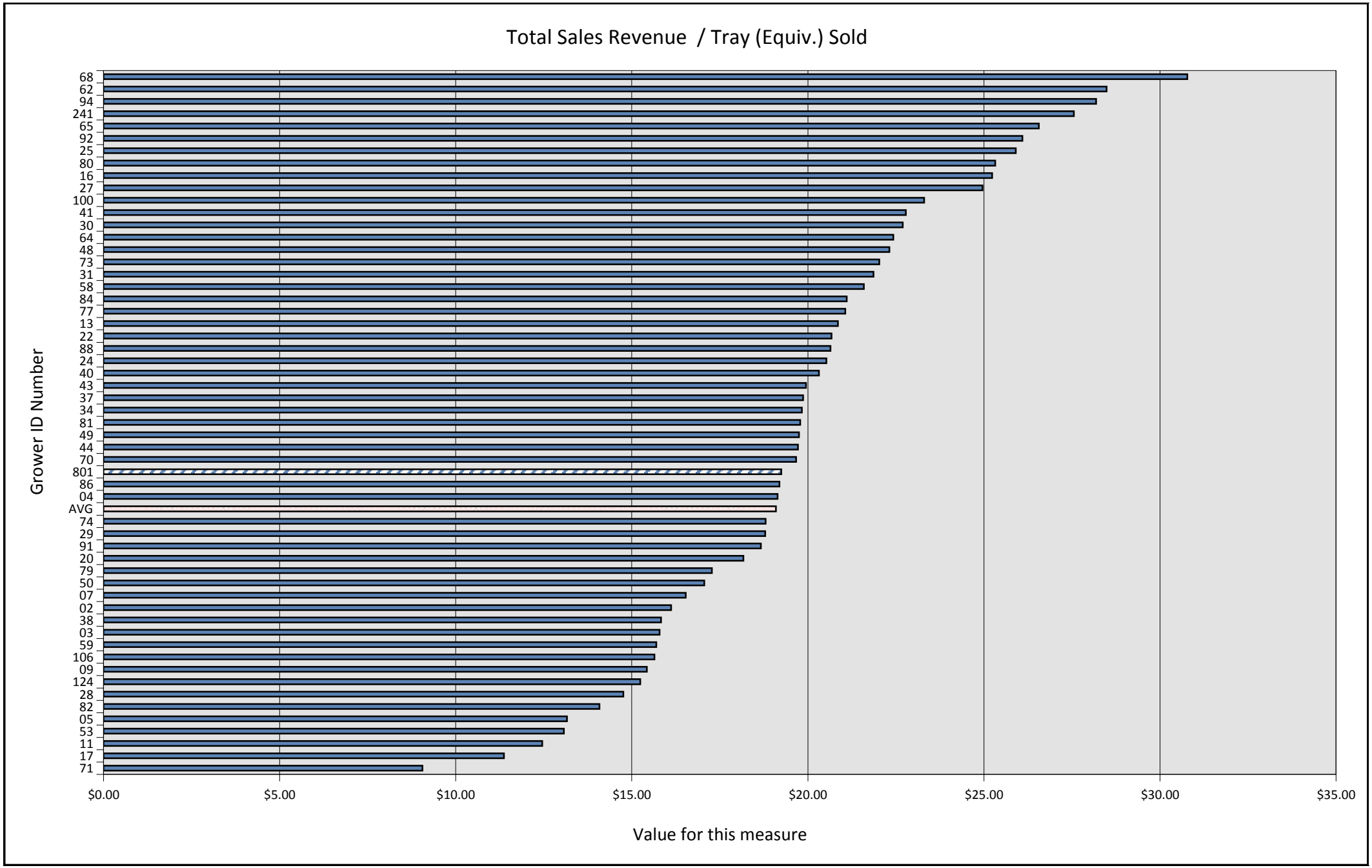
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



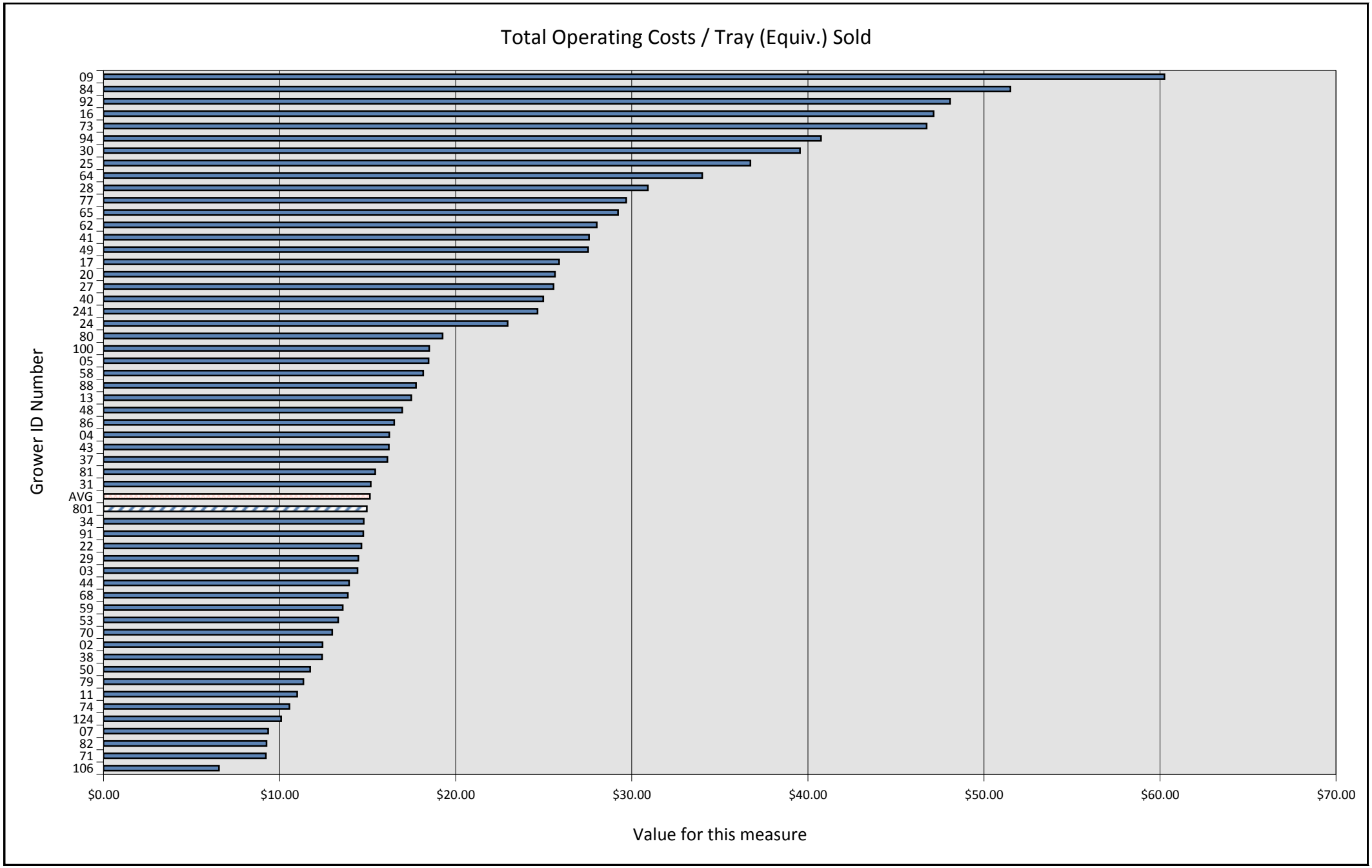
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



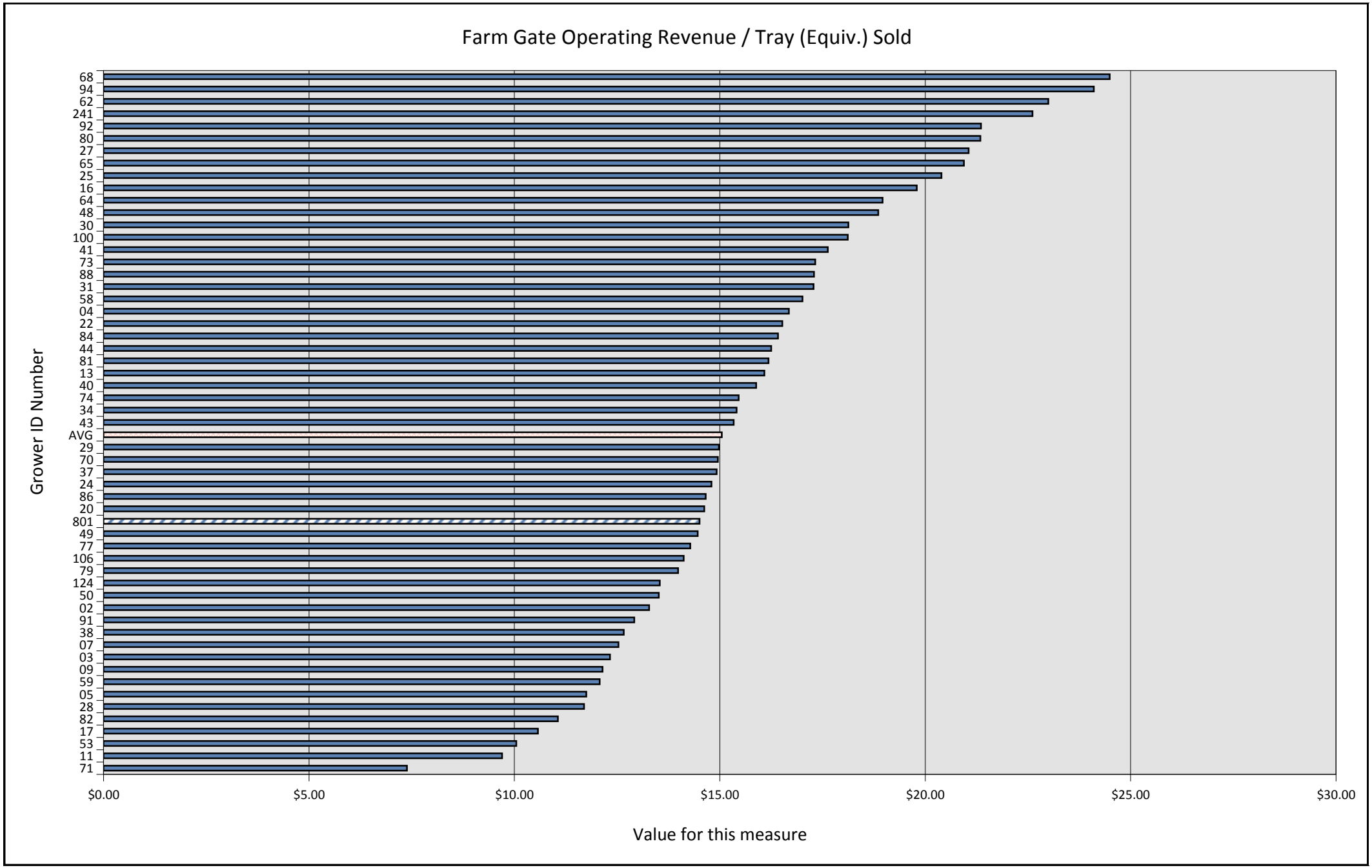
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



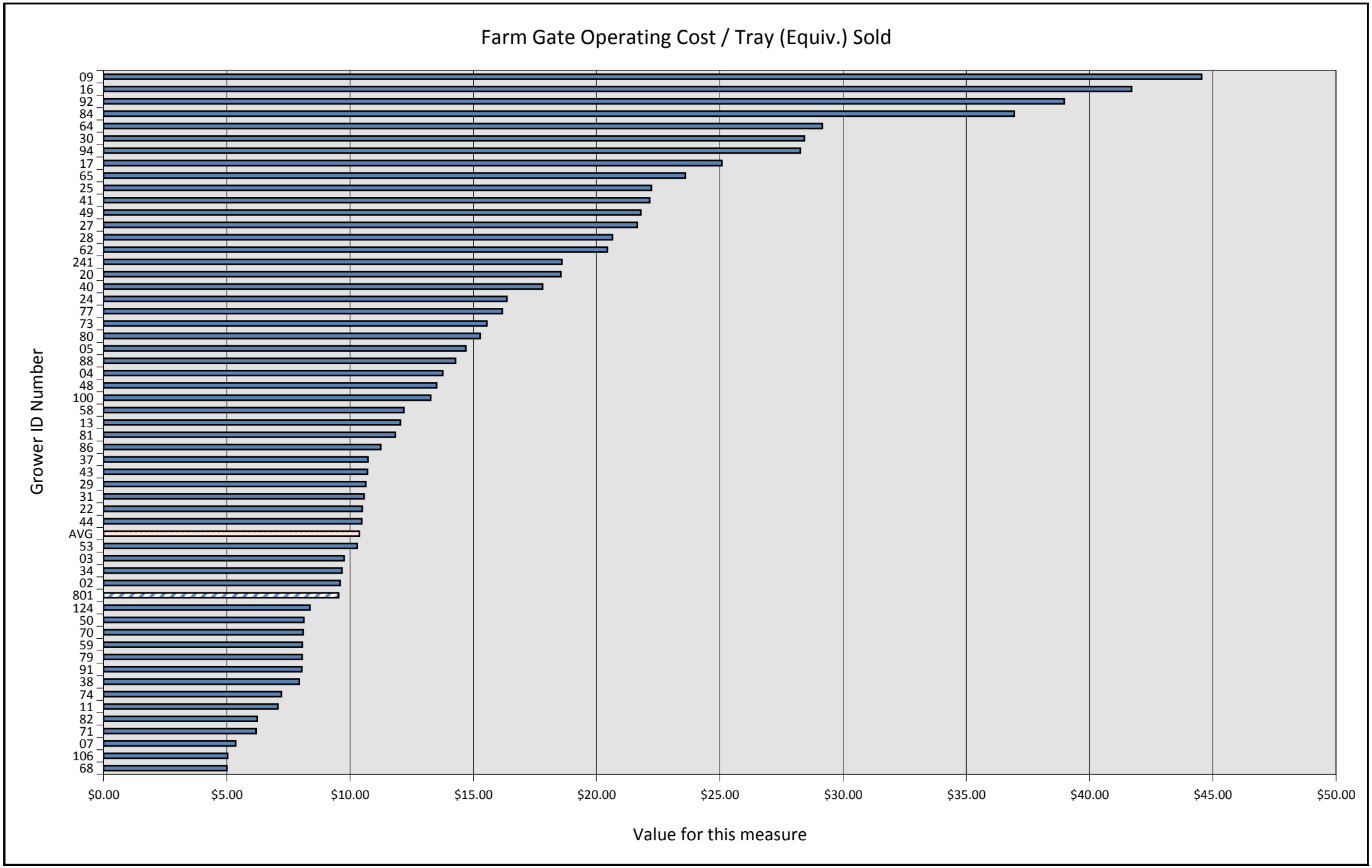
Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Sample Average	801



Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

Terms and Definitions Used	
Average	The average value reported amongst all participants that contributed information used in this measure / descriptor
EBIT	Earnings Before Interest and Tax (Net Operating Profit + Interest and Finance Costs)
EBITDA	Earnings Before Interest, Tax, Depreciation and Amortisation (EBIT + Depreciation and Amortisation)
Farm Gate Cash Revenue	Gross Sales Revenue minus Freight , Marketing and Ripening Costs
Farm Gate Cash Operating Costs	Operating Costs minus Freight, Marketing and Ripening Costs
FTE / FTEs	Full Time Employee Equivalent. Treated as one full time employee working 45 hours per week for 48 weeks per year (2,160 hours = 1 FTE)
Gross Sales Revenue	Gross sales achieved before any costs (before marketing fees, freight, PBR fees, brokerage etc. and all other costs)
Growing Costs, Overheads & Other Costs	All costs except costs referred to as 'To-Market Costs' (Below)
High / Highest	The highest value reported amongst all participants that contributed information used in this measure / descriptor
Indicative Pay Rate	Where pay details are not provided an hourly rate of $20 per hour plus Superannuation has been used.
Low / Lowest	The lowest value reported amongst all participants that contributed information used in this measure / descriptor
Operating Costs (Excluding Interest, Tax, Depreciation and Amortisation	Total Costs **excluding** Interest, Tax, Depreciation and Amortisation
Net Profit Before Tax	Gross Sales Revenue achieved less Total Costs and Before Tax
Producing Hectare	Hectare of planted trees that were harvested in the 2011 / 2012 harvest season
Rank	Rank 1 is the highest value recorded amongst participants, higher ranking numbers are the smallest numbers recorded for that measure / descriptor
To-Market Costs	Picking Labour, Packing Labour, Packaging Costs, Power and Gas Costs, Contract Packing Fees, Outgoing Freight Costs, Marketing and Ripening Costs.
Total Costs	All costs incurred (including marketing fees, freight, PBR fees, brokerage etc., interest [where provided], depreciation [where provided], amortisation [where provided] and all other costs)
Unallocated (Paid) Owners Labour Costs	Where owners are paid in the financial accounts of the business this labour has not been allocated to a function (e.g. pruning), and left unallocated – applying across the entire business.
Unpaid Owners Wages	Allocated cost to cover the time spent working in the business by family members who are not paid in the financial records of the business
5.5 KG Tray Equivalent	Total Kgs of fresh produce sold divided by 5.5 = 5.5KG Tray equivalents (where it assists in analysis, juice / processing fruit may also be referred to in 5.5Kg equivalents)

Comparative Analysis Report (2012)-Sample Average ID 801-Total Group

COST CATEGORIES USED IN THIS ANAYSIS	EXPENSES INCLUDED IN THIS COST CATEGORY
General Expenses	Administration Fees, Advertising and Promotions, Discounts Given, Discounts Received, Drawings, Entertainment, Lease Fees (Land), Legal and Accounting, Office Expenses, Other General Expenses, Printing, Stationery and Postage, Protective Clothing and Safety / OHS, Subscriptions, Sundry Expenses, Telephone and Internet, Travelling Expenses, Waste Removal and Cleaning, Audit Fees, Filed Consumables, Plant & Equipment Hire, Payroll Tax, Soil and Leaf Testing, Sundry Cost of Goofs Sld.
Consultants & Contractors Costs	Consultants Fees, Contract Field Services, IPM Fees,
Contract Packing Fees	Contract Packing Fees
Chemical & Fertiliser Costs	All Chemicals, Fertilizers, Wetting Agents, Growth Regulators and Related Products
Power & Gas Costs	Power, Gas,
Freight Costs	Freight Costs
Fuel and Oil Costs	Fuel, Oil
Marketing and Ripening Costs	Marketing Fees, Commissions, Ripening Fees
Packaging and Pallet Costs	All Packaging Materials
Employment / Labour Costs	Wages, Salaries, Superannuation,
Water Costs	Water Purchase Costs
Insurance Costs	All Insurance Costs
Finance Costs	Interest
Depreciation & Amortisation Costs	Depreciation, Amortisation
Levies, Licenses, Memberships, Registrations	Levies, Licenses, Fees, Registrations (not Vehicle), Memberships,
Motor Vehicle Costs	Motor Vehicle Costs, Vehicle Registrations,
Repairs & Replacements	All Repairs, Replacements, Earthworks Repairs, Roadworks and Similar
Rates Costs	Council Rates and Charges
Royalties & PVR / PBR Costs	Royalties, PBR Fees, and Similar Fees for I.P. Use / Rights

12.4 Sample Practices Summary Report

Summary of Participant Responses

Regarding
Common Management and
On Farm Practices

Provided to Growers Participating in
The Australian Avocado Benchmarking Program

For Financial Year Ending
June 30 2012

For further information contact:
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Email: hhall@pinnaclemanagement.com.au

This project has been funded by HAL using the Avocado R&D levy and matched funds from the Australian Government.

Practices Summary Report (2012)-Total Group

	Measure	Result
Labour Management Practices		
Origin of Farm Workers		
Local / Australian Workers	% of FTEs	65.71%
Asian Ethnicity	% of FTEs	19.34%
European Ethnicity	% of FTEs	13.93%
Islanders / Pacific Nations Ethnicity	% of FTEs	0.00%
Other	% of FTEs	1.02%
Source of Workers for the Farm		
Labour Hire Companies	% of FTEs Sourced This Way	6.20%
Backpacker Hostels	% of FTEs Sourced This Way	40.76%
Placed (Direct) Advertisements	% of FTEs Sourced This Way	3.87%
Walk up, Referral, Other	% of FTEs Sourced This Way	49.17%
Use of Contractors (fee for service) for		
Hand Pruning	% of Respondents	3.64%
Mechanical Pruning (Hedging)	% of Respondents	21.82%
General Farm Work	% of Respondents	0.00%
Spraying	% of Respondents	3.64%
Harvesting	% of Respondents	5.45%
Packing	% of Respondents	12.73%
Agronomic Services (Fee Charging)	% of Respondents	
Agronomic Services (As part of Input Supply Terms)	% of Respondents	
Other	% of Respondents	5.45%
Use of Contract Labour Hire Companies for		
General Farm Work	% of Respondents	14.55%
Pruning	% of Respondents	7.27%
Harvesting	% of Respondents	81.82%
Packing	% of Respondents	90.91%
Marketing, Admin, Other.	% of Respondents	3.64%
Marketing Practices		
Produce Marketing Channel Used		
Direct to Supermarkets	% of Produce Sold	9.68%
Via Brokers	% of Produce Sold	44.92%
Through Wholesalers	% of Produce Sold	40.79%
Through Exporters or Direct to Export	% of Produce Sold	1.50%
Through PBR Marketers	% of Produce Sold	3.09%
To Processors, Value Adders, Oil etc	% of Produce Sold	0.02%
Other	% of Produce Sold	0.00%
The Primary Decision Maker About Distribution to Market Segments		
Internal Decision Makers (owners or Other)	% of Respondents	45.45%
Broker	% of Respondents	36.36%
Wholesaler	% of Respondents	14.55%
Other	% of Respondents	3.64%
Horticultural Code of Conduct		
Horticultural Code of Conduct Entered into	% of Respondents	74.55%
Frequency of Speaking to Primary Marketer(s) in Season		
Several Times Per Day	% of Respondents	9.09%
Daily	% of Respondents	61.82%
Weekly	% of Respondents	25.45%
Less Often than Weekly / Other	% of Respondents	3.64%
Frequency of Visiting Primary Marketer(s) / Markets		
Never	% of Respondents	20.00%
Once per Year	% of Respondents	34.54%

Practices Summary Report (2012)-Total Group

	Measure	Result
Twice per Year	% of Respondents	23.64%
More than Twice Per Year	% of Respondents	21.82%
Frequency of Primary Marketer(s) Visiting your Farm(s)		
Never	% of Respondents	10.91%
Once per Year	% of Respondents	56.37%
Twice per Year	% of Respondents	25.45%
More than Twice per Year	% of Respondents	7.27%
Degree of Involvement / Skill In Marketing		
Low	% of Respondents	30.91%
Medium	% of Respondents	32.73%
High	% of Respondents	36.36%
Irrigation Practices		
Irrigation Method		
Micro Sprinklers	% of Respondents	94.54%
Drip Tape	% of Respondents	1.82%
Travelling Irrigator	% of Respondents	0.00%
Fixed High Vol Sprinklers	% of Respondents	1.82%
None	% of Respondents	0.00%
Other	% of Respondents	1.82%
Primary Irrigation Monitoring Method Used		
Visual	% of Respondents	38.18%
Tensiometers	% of Respondents	30.91%
Nuetron Probes	% of Respondents	0.00%
Enviroscan Probes	% of Respondents	27.27%
Fixed Scheduling	% of Respondents	1.82%
Other	% of Respondents	1.82%
Frequency of Irrigation When Irrigating		
Two or more times per day	% of Respondents	20.00%
Daily	% of Respondents	9.09%
Once every two days	% of Respondents	38.18%
Weekly	% of Respondents	21.82%
Less than Once per Week	% of Respondents	10.91%
Irrigation Volumes Applied per Ha		
Group High	Group High ML / Ha	28.00
Group Average	Group High ML / Ha	7.60
Group Low	Group High ML / Ha	0.10
Fertilizer Practices		
Frequency of Soil Analysis Testing		
Once per Year	% of Respondents	50.90%
Twice per Year	% of Respondents	14.55%
Other	% of Respondents	34.55%
Frequency of Leaf Analysis Testing		
Once per Year	% of Respondents	41.82%
Twice per Year	% of Respondents	32.73%
Other	% of Respondents	25.45%
Primary Method of Fertiliser Application		
Foliar	% of Respondents	5.45%
Solid	% of Respondents	41.82%
Fertigation	% of Respondents	52.73%

Practices Summary Report (2012)-Total Group

	Measure	Result
Nitrogen Applied per Ha per Annum KG		
Group High	Group High N / ha	675.00
Group Average	Group Average N / ha	139.21
Group Low	Group Low N / ha	13.00
Phosphorous Applied per Ha per Annum KG		
Group High	Group High P / ha	170.00
Group Average	Group Average P / ha	39.09
Group Low	Group Low P / ha	6.50
Potassium Applied per Ha per Annum		
Group High	Group High K / ha	625.00
Group Average	Group Average K / ha	135.92
Group Low	Group Low K / ha	12.00
Pest and Disease Control		
Frequency of Pest and Disease Spraying During Summer		
More than once per week	% of Respondents	0.00%
Weekly	% of Respondents	3.64%
Every 2 weeks	% of Respondents	16.36%
Every 4 weeks	% of Respondents	30.91%
Other	% of Respondents	49.09%
Frequency of Pest and Disease Spraying During Winter		
More than once per week	% of Respondents	0.00%
Weekly	% of Respondents	1.82%
Every 2 weeks	% of Respondents	7.27%
Every 4 weeks	% of Respondents	3.64%
Other	% of Respondents	87.27%
Pest and Disease		
Mounds Are Used for All New Plantings	% of Respondents	58.18%
Frequency of Applying Mulch to Orchards		
Not Mulching	% of Respondents	49.10%
Yearly	% of Respondents	36.36%
Twice Yearly	% of Respondents	5.45%
More than twice yearly	% of Respondents	9.09%
% of Trees Lost to Phytophthora in Last Three Years		
Nil	% of Respondents	10.91%
5% or Less	% of Respondents	80.00%
5% to 10%	% of Respondents	7.27%
More than 10%	% of Respondents	1.82%
% of Trees Lost to Causes Other Than Phytophthora in Last Three Years		
Nil	% of Respondents	45.45%
5% or Less	% of Respondents	49.09%
5% to 10%	% of Respondents	3.64%
More than 10%	% of Respondents	1.82%
Phytophthora Treatment Program		
No Treatment	% of Respondents	36.36%
Needle Application	% of Respondents	49.09%
Spray Application	% of Respondents	14.55%
Once per Annum	% of Respondents	40.00%
Twice per Annum	% of Respondents	10.91%
Other	% of Respondents	49.09%

Practices Summary Report (2012)-Total Group

	Measure	Result
Pruning Practices		
Frequency of Mechanical Hedging		
100% per Year	% of Respondents	27.27%
50% per Year	% of Respondents	12.73%
25% per Year	% of Respondents	18.18%
24% to 10% per Year	% of Respondents	7.27%
10% or less per Year	% of Respondents	1.82%
Frequency of Limb Removal / Internal Hand Pruning		
100% per Year	% of Respondents	41.82%
50% per Year	% of Respondents	25.45%
25% per Year	% of Respondents	21.82%
24% to 10% per Year	% of Respondents	1.82%
10% or less per Year	% of Respondents	9.09%
Packing Strategy		
Produce Packed in House	% of Respondents	45.45%
Produce Packed by Contract Packer	% of Respondents	54.55%
Record Keeping		
Spray Records		
Written	% of Respondents	69.10%
Computerized	% of Respondents	25.45%
Other	% of Respondents	5.45%
Irrigation Records		
Written	% of Respondents	45.46%
Computerized	% of Respondents	36.36%
Other	% of Respondents	18.18%
Harvest Records		
Written	% of Respondents	41.82%
Computerized	% of Respondents	54.54%
Other	% of Respondents	3.64%
Pack Out Records		
Written	% of Respondents	29.09%
Computerized	% of Respondents	65.46%
Other	% of Respondents	5.45%
Labour / Time Sheets		
Written	% of Respondents	58.18%
Computerized	% of Respondents	27.27%
Other	% of Respondents	14.55%
Keeping Block by Block Records		
Spray Records	% of Respondents	67.27%
Irrigation Records	% of Respondents	60.00%
Fertiliser Applications	% of Respondents	67.27%
Harvest Yield	% of Respondents	58.18%
Financial Returns	% of Respondents	9.09%
Costs	% of Respondents	7.27%
Labour Use	% of Respondents	7.27%