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INSIGHTS FROM THE 2017 INTERIM BENCHMARK SAMPLE

2017 season project snapshot

The macadamia benchmarking project has been tracking industry productivity since 2009. Currently over 55% of the Australian industry participates in benchmarking, with numbers growing steadily each year. One hundred and seventy-eight farms submitted data for last season before the end of December 2017. Production from these farms totalled 12,843 t of nut-in-shell (NIS) or 4,837 ha. This represents about 28% of total 2017 production. It also equates to about two-thirds of the previous season's full benchmark sample of 269 farms. Although data is still being collected, figures received by the end of 2017 were analysed for this article to provide an interim summary of the season.

Results from the 2017 season

The March 2017 crop forecast of 54,000 t of NIS was revised down to 46,000 t in December 2017 following extreme weather events, which caused damage and lost production in several regions. Despite some losses related to these weather events, average mature yield for the interim benchmark sample was consistent with the nine-year average for the benchmark pool.

Figure 1 compares averages for the 2017 interim benchmark sample with the long-term average for the full benchmark sample for 2009 to 2016 (shown in brackets). Average nut-in-shell and saleable kernel yield shown are for mature farms only, with an average age of 10+ years.

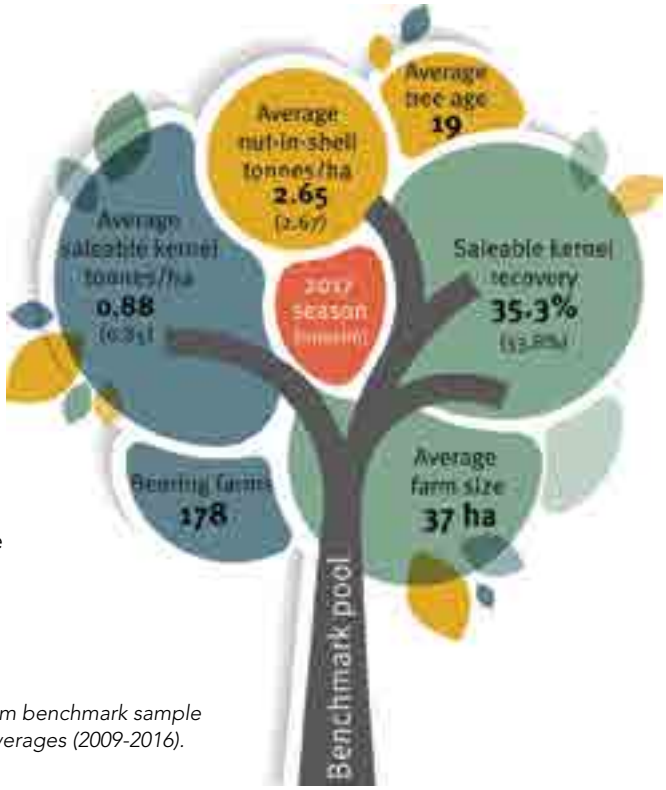

Figure 1. *Averages for the 2017 interim benchmark sample compared to long-term benchmark averages (2009-2016).*

Figure 2 shows trends in average nut-in-shell yield (in red) and saleable kernel yield (in grey) per bearing hectare for mature farms in the benchmark sample from 2009 to 2017. Average saleable kernel recovery for all farms in the sample is also shown (in gold). Averages from 2009 to 2016 are based on the full benchmark sample in those years while the 2017 average is based on the interim sample.

Average saleable kernel recovery for farms in the 2017 interim sample was higher than the long-term average from 2009-2016. This increase in 2017 partially offset a reduction in nut-in-shell yield and resulted in a saleable kernel yield that was slightly above the long-term average of 0.85 t per bearing hectare.

Figure 3 shows that farms in the interim sample from Central Queensland (CQ), South East Queensland (SEQ) and the Mid North Coast of NSW (MNNSW) had lower average NIS yield per hectare in 2017 than in 2016. Saleable kernel production was also down in these regions. Northern Rivers NSW farms (NRNSW) had similar average NIS production to 2016, but their higher average saleable kernel recovery in 2017 resulted in a small increase in saleable kernel production.

Figure 4 shows saleable and reject kernel recovery trends over the last nine years. The 2017 average is based on the interim benchmark sample of 178 farms while trends for 2009 to 2016 are based on the full benchmark pool in those seasons. Saleable kernel recovery for the 2017 interim sample was the highest since benchmarking began in 2009. This was accompanied by the lowest reject kernel recovery levels since 2009.

Figure 5 shows a breakdown of factory rejects over the last nine years. Insect damage levels declined significantly in 2017,

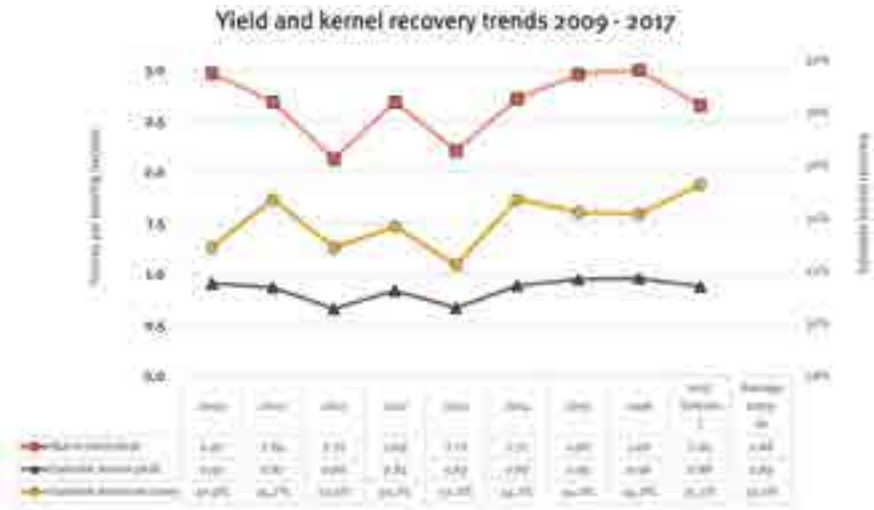

Figure 2. *Average yield and kernel recovery trends (whole benchmark sample 2009-16, interim sample 2017).*

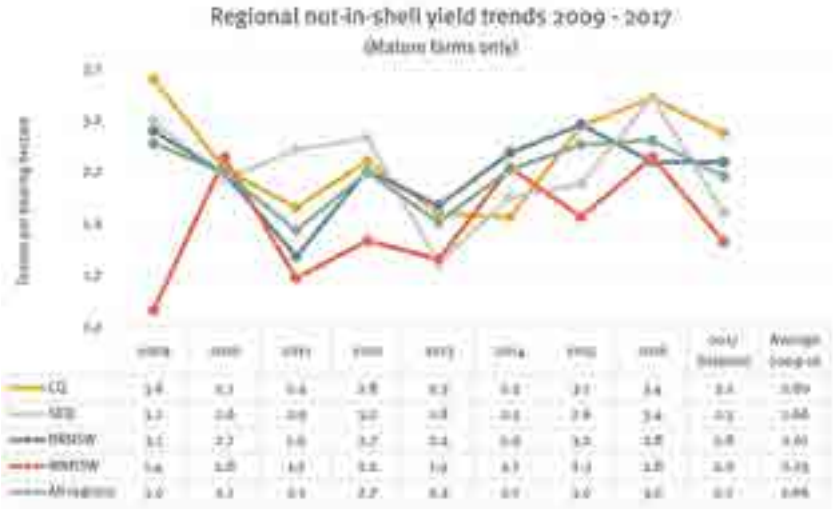

Figure 3. *Comparison of regional nut-in-shell yields per bearing hectare (whole benchmark sample 2009-16, interim sample 2017).*

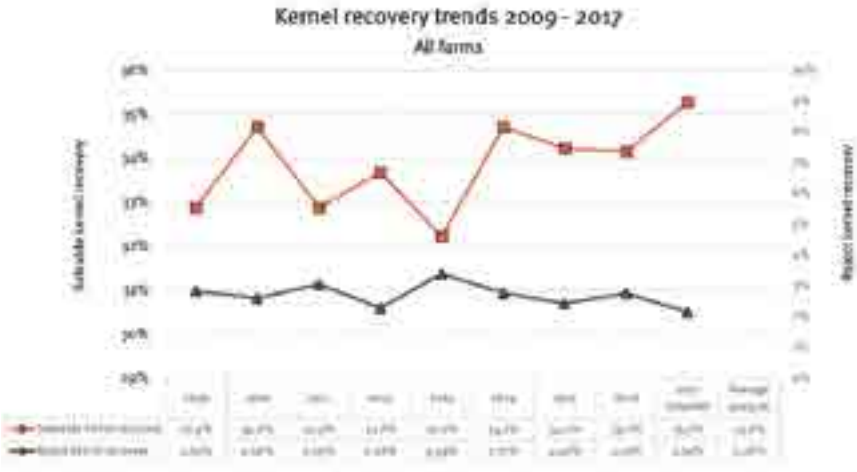

Figure 4. *Annual reject kernel recovery trends (whole benchmark sample 2009-16, interim sample 2017).*

however, it was still the leading cause of factory reject kernel within the interim sample.

Observations from the 2017 season

As part of the 2017 data collection process all benchmark participants were asked to nominate the major factors affecting production on their farm as well as the most significant pests and diseases. This feedback was also sought during Benchmark Group meetings in each of the major production regions from August to November 2017. At these meetings participants had the opportunity to discuss these and other aspects of their farm management such as nutrition and canopy management.

A total of 192 responses were received from interim benchmark participants and Benchmark Group members. In some cases, respondents nominated multiple limiting factors so the following charts show the proportion of each limiting factor relative to the total number of responses received. Figure 6 shows the major factors limiting production in the 2017 season.

The most common factors reported in 2017 were weather related (60%). These ranged from hot dry conditions and lack of water through to storms, hail, floods and wet weather. Growers in some regions reported a combination of both extended dry periods followed by storms or wet weather events.

The next most commonly reported limiting factor was pests (14%), followed by impacts associated with tree or limb removal (5%), then poor nutrition or soil (5%), tree height or crowding (2%) and disease (2%). About 4% of respondents indicated there were no factors affecting production on their orchard in 2017.

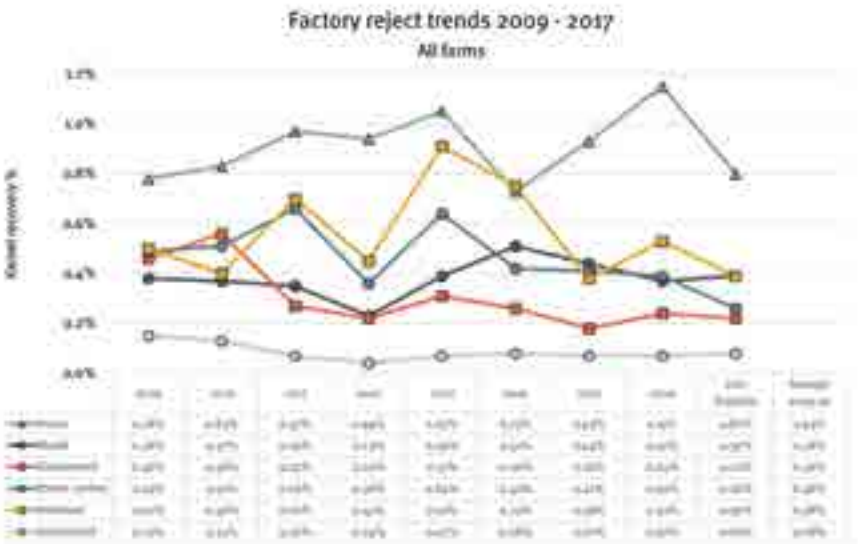

Figure 5. *Annual average reject trends (whole benchmark sample 2009-16, interim sample 2017).*

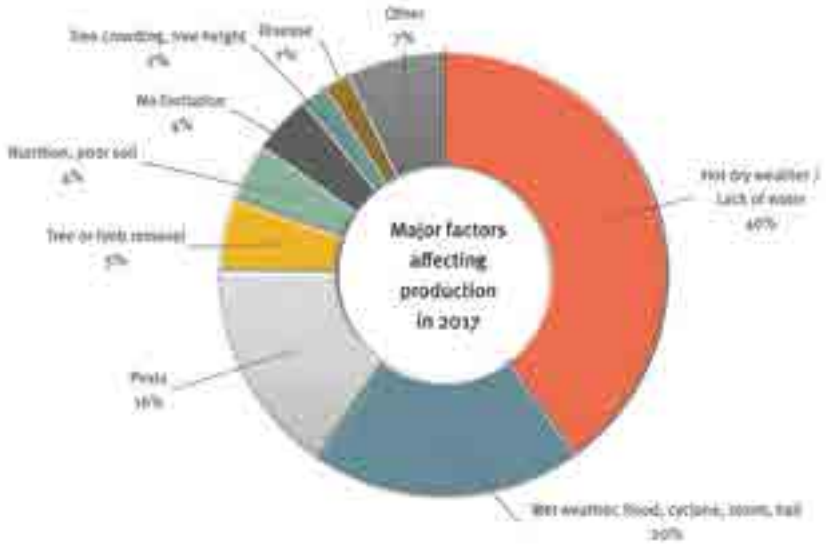

Figure 6. *Major factors affecting production in 2017.*

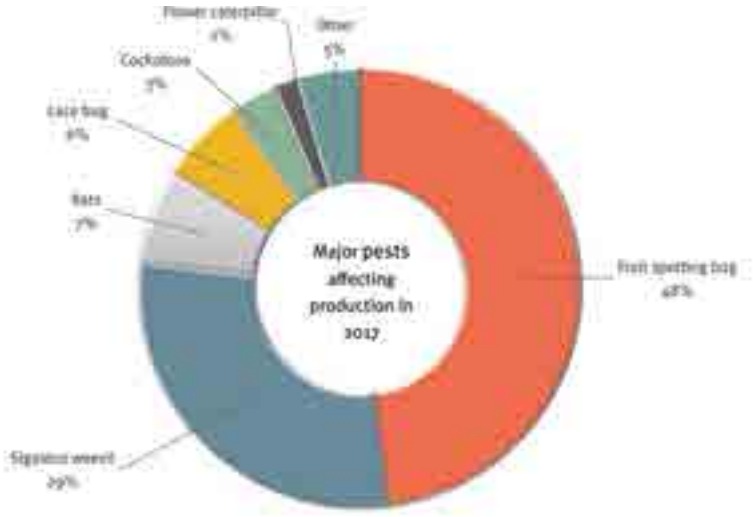

Figure 7. *Major pests affecting production in 2017.*

Respondents from 154 farms nominated one or more specific pests that limited production on their farm in the 2017 season. A summary of these responses is shown in Figure 7.

Fruitspotting bug was identified as the major pest affecting production in 2017 (50%), followed by *Sigastus* weevil (27%), lace bug (6%), rats (6%), cockatoos (3%) and flower caterpillar (3%). The "other" category (5%) included nutborer, feral pigs, mistletoe and kernel grub.

Managers or owners of 107 farms nominated one or more diseases that limited production on their farm in the 2017 season. A summary of these responses is shown in Figure 8.

The disease most commonly reported by participants was *Phytophthora* (44%) followed by flower diseases (29%) and husk spot (20%). Responses relating to flower diseases included *Botrytis* flower blight, dry flower and unspecified flower disease. The "other" category (7%) included husk rot, unspecified fungi, Abnormal Vertical Growth (AVG), dieback and *Dothiorella*.

Although the full data sample for 2017 is yet to be analysed, the cross section of farms and regions in the interim sample provides reasonable insight into industry trends. Final results from the 2017 season will be available in early 2018.

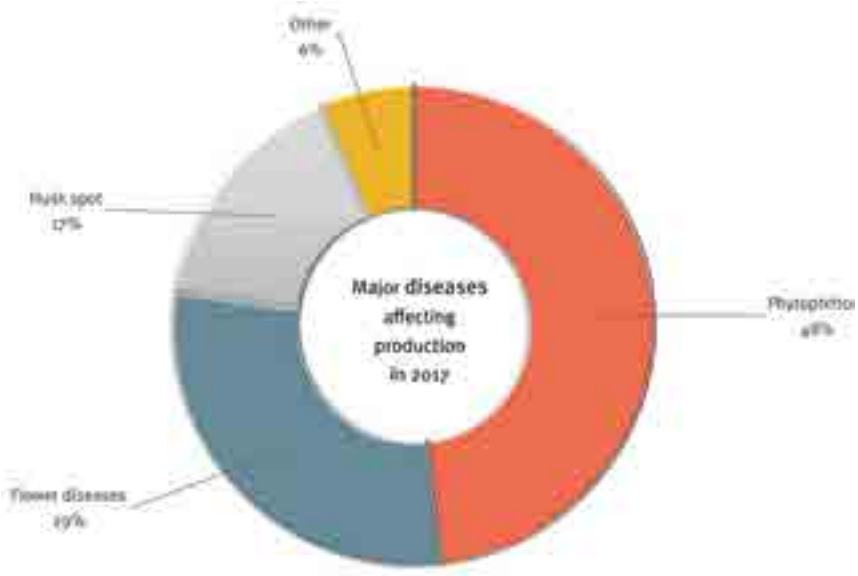

Figure 8. *Major diseases affecting production in 2017.*

Further information

Participation in benchmarking is free and individual farm results remain completely confidential. It provides growers with an opportunity to compare their yield, quality and optionally costs with averages of similar farms.

For more information about participating in the benchmarking project contact one of the following team members or email macman@daf.qld.gov.au.

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