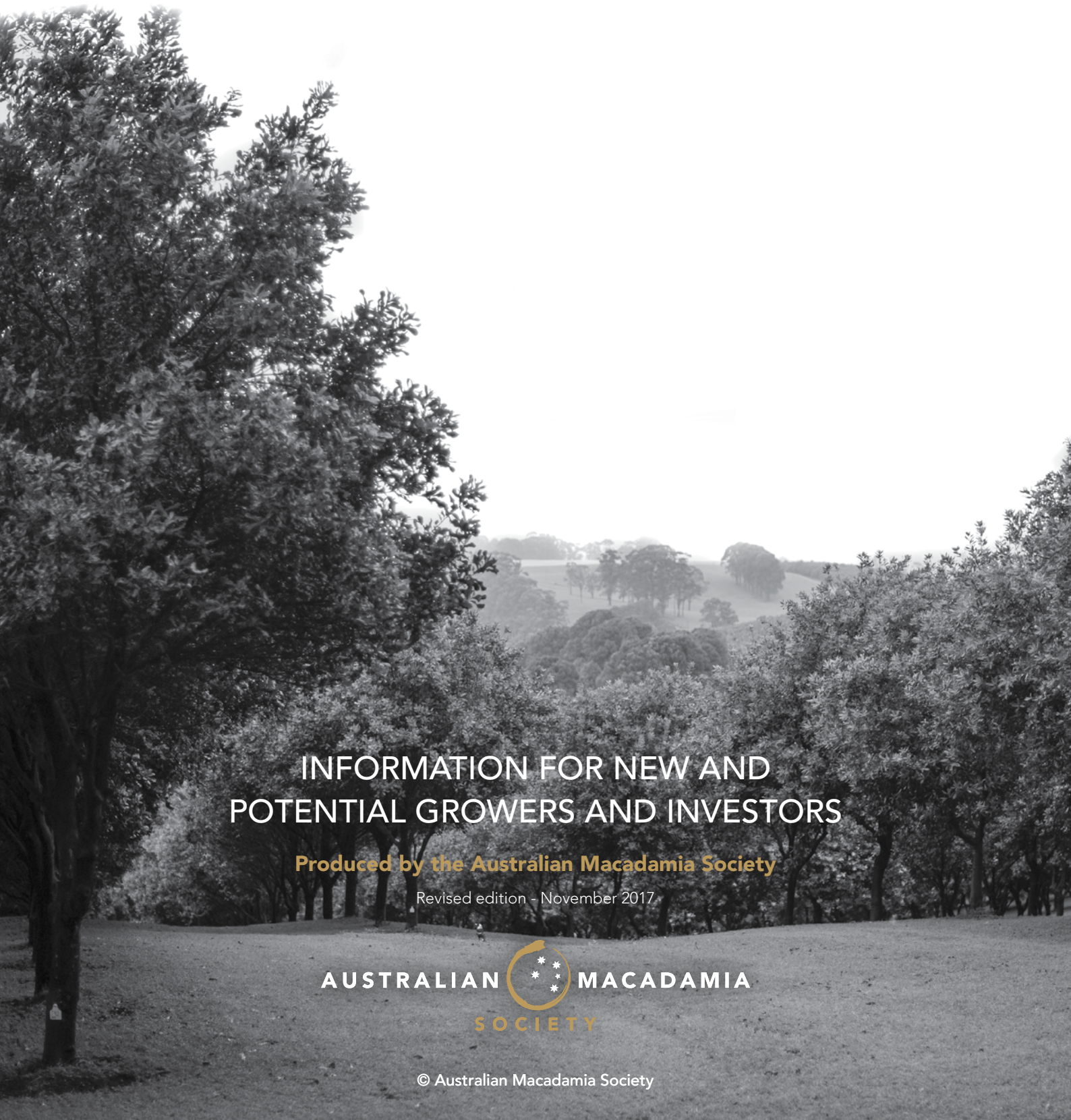
THE AUSTRALIAN MACADAMIA INDUSTRY



INFORMATION FOR NEW AND POTENTIAL GROWERS AND INVESTORS

Produced by the Australian Macadamia Society

Revised edition - November 2017

AUSTRALIAN MACADAMIA SOCIETY

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INTRODUCTION

The Australian macadamia industry is an exciting, proactive and open industry that continues to grow in size (tonnage and hectares) and value (farm gate price and capital value of orchards).

If you're considering becoming a macadamia grower, and/or investing in the industry, the Australian the Australian Macadamia Society (AMS) is here to help you.

We are the peak industry body of over 700 Australian members representing all facets of the macadamia industry in Australia.

We regularly get enquiries from people who are considering establishing or purchasing a macadamia orchard and need guidance or more information in making the decision.

This information booklet provides an outline on the current state of the industry, and includes insights into global markets, domestic production, statistics, trends and much more. Hopefully it will provide you with the answers to our most commonly asked questions, and help you understand the opportunities and challenges.

This booklet assumes a 'base level' of knowledge on the production aspects of the industry (bearing age and growing conditions for example). If you require additional 'base level' information please visit the Australian Macadamia Society website www.australianmacadamias.org and go to the About section (top left corner) where you'll find useful information about the AMS and the industry in general.

Please review the booklet, and then contact us to find out more about becoming an AMS member. Membership will give you access to a wide range of detailed resources, research, events and activities all aimed at helping to improve your bottom line.

Call us on FREECALL 1800 262 426 (Australia only) or 61 2 6622 4933 (international enquiries) or email office@macadamias.org.

The Australian Macadamia Society team

AUSTRALIAN MACADAMIA SOCIETY

IN A NUTSHELL

The macadamia industry has a strong export focus, with approximately 70% of production exported to the world market.

Since inception the macadamia industry has been very successful in developing new markets and 70% of macadamias produced in Australia are exported, with the farm gate value growing from around $10 million originally to around $280 million today. There are few, if any, other Australian horticulture industries that can boast the same level of export marketing achievement.

This positive position is a result of the leadership that was delivered by the AMS board in the early stages of the industry (1970's). Growers and the industry are continuing to benefit from that strategic leadership.

The Australian macadamia industry is the recognised global market leader and our industry marketing provides direction to all participants and has been the major factor driving global demand. Australia is responsible for more than 80% of all generic marketing in the world. The Australian macadamia marketing program seeks to influence our customers by providing them with the right information, engaging with them and encouraging them to amplify our consumer messaging. We currently invest in consumer campaigns in Australia, Germany, Japan, Korea, China and Taiwan and reach more than 125 million people annually.

The Australian industry is the leading supplier of macadamia kernel and the largest producer overall producing 30% of the world supply. South Africa, Kenya and Hawaii are currently the other major producers.

INDUSTRY POTENTIAL

Consumer demand exceeds supply
There is substantial international demand growth in all nut categories, with subsequent growth in the farm gate In shell (NIS) prices across all nut categories and uninterrupted price growth in macadamias over the past 5 years. Consumption is rising as a result of increased interest in healthy foods and an increase in awareness of the health benefits of eating tree nuts, as well as the versatility of nuts (sweet, savoury and snacks).

Asian market growth
The biggest growth in demand is coming from Asia, where consumers are adopting western foods and consumption patterns (snacking, eating on the go etc.). They are also moving from traditional snacks to new product forms including salted, roasted and flavoured nuts.

Strong supply growth potential
Macadamias currently represent less than 2% of the world trade in tree nuts. As awareness and production increases, the peak industry body - Australian Macadamia Society - predicts significant growth in the industry.

Unified and open industry culture
The industry has a strong representative body, the Australian Macadamia Society, which is driving further development. The AMS represents over 75% of growers and 85% of production and has membership along the value chain.

AUSTRALIAN MACADAMIA SOCIETY

IN A NUTSHELL

MARKETS: PRESENT AND FUTURE

- Macadamias are sold mainly as kernel, which is processed for snack food lines and as an ingredient in confectionery, cereals, ice-cream and bakery products.
- The macadamia nut is known as the 'world's finest nut' and is renowned for its versatility. You can find macadamias in up to 7 aisles of the supermarket.
- The Australian market consumes about 30% of total Australian production, more than 90% of which is sold as kernel.
- In the 12 months to June 2017 kernel sales were spread between Australia (32%), Asia (44%), the USA (8%) and Europe (16%). There is continued strong demand in Australia and Asia with trade interest and consumer awareness growing. Market development campaigns are underway in Japan, Korea, Taiwan and China.

  Consumption of macadamias in China continues to grow and already a vibrant kernel market is appearing.
- Purchase of macadamias in shell is increasing in China and this market is expected to grow significantly over the next five years.
- The promotion of health benefits is a driver of demand and, combined with new market penetration, is expected to underpin further industry growth.

COMPETITIVE ADVANTAGES

Consistent quality
Australian farms and processors have high product standards, with a demonstrated capacity to produce consistently superior quality kernel.

All processors are HACCP accredited and most have further quality management systems.

Food safety
Through the Australian Government's National Residue Survey the Australian macadamia industry can demonstrate 20 years of 100% compliance with all relevant standards. This is a record unmatched by any other horticultural product in Australia.

Strong levy-funded industry programs
There is strong financial commitment to domestic and export market development and farm research funded by a compulsory grower levy on production. The industry spends about $4 million annually on both marketing and research and development.

Native crop germplasm
Australia holds the only natural germplasm resources for macadamias, and has spent over $10 million over the last ten years on a comprehensive breeding program. Early indications are that yield increases of 30% are possible from new varieties and 4 new varieties will be released in the next 2 years.

AUSTRALIAN MACADAMIA SOCIETY

PRODUCTION REGIONS

Macadamias are predominantly grown along the eastern seaboard of New South Wales and Queensland, from Nambucca Heads in the south through to Mackay in the north.

There are approximately 750 macadamia growers in Australia. Production in 2017 was 46,000 tonnes of in shell (NIS) (at 10% moisture) from a production base of around 22,000 hectares.

The industry is still growing, with significant new plantings underway. It is estimated that by 2019 26,000 hectares will be planted with NIS production of around 55,000t.

Around one third of macadamia trees currently under cultivation are yet to reach full production.

Production is centred in the following major regions:

Region	State	Percentage of industry production
Bundaberg	QLD	41%
Gympie	QLD	7%
Glass House Mountains	QLD	6%
Northern Rivers *(Lismore, Byron Bay & Ballina local government areas)*	NSW	40%
Nambucca	NSW	5%
Tropical QLD/ Margaret River	QLD /WA	1%

BREAKDOWN BY REGION

- **The Northern Rivers** is the largest single planted area, with almost 500 growers producing from approximately 9,700 hectares. This region has a larger number of small orchards, with an average orchard size of approximately 15 hectares.
- **Bundaberg** is the second largest planted area (and also the fastest growing) with over 55 growers producing from approximately 7,800 hectares. Bundaberg has a smaller number of large orchards, with an average orchard size over 100 hectares.
- The **Nambucca, Gympie and Glass House Mountains** regions each have some large orchards, but are predominantly made up smaller-sized orchards.
- The **Emerald** region is an emerging region with a small number of medium to large-sized orchards.
- There are a small number of plantings in the **Margaret River** region (WA).

PRODUCTION REGIONS

NORTHERN RIVERS

GLASS HOUSE MOUNTAINS

BUNDABERG

AUSTRALIAN MACADAMIA SOCIETY

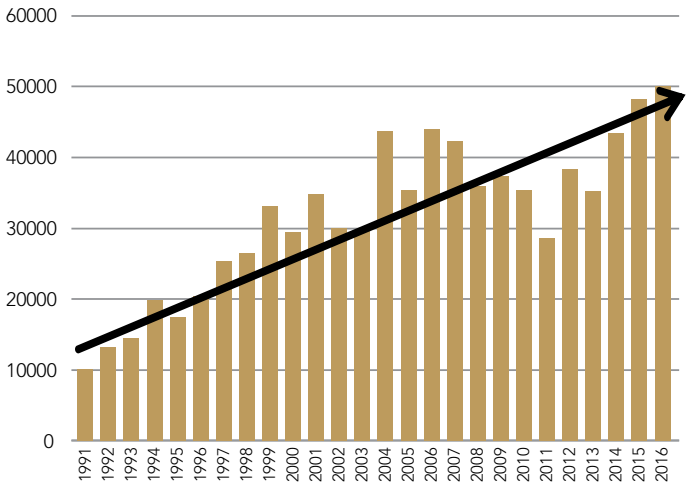
INDUSTRY PRODUCTION

The Australian macadamia industry is a relatively young horticultural industry.

Production is discussed in terms of In shell (NIS) per hectare.

The industry has a proven track record of production growth (see graph below), although there have been fluctuations in recent times (2008-2011). This fluctuation was primarily driven by poor weather conditions and a lack of understanding on emerging pests and orchard management issues. The industry now has an improved understanding on the key issues that were reducing production, and has developed a range of methods to manage them and increase production. This is evident in recent industry production figures (2012-2016).

Australian Macadamia Industry Crop (10%)



INDUSTRY AVERAGE PRODUCTION

The industry average production is obtained by dividing the annual production by the annual hectares of bearing age (>5 years). The amount of hectares that are of bearing age is growing annually, as new plantings reach bearing age each year.

The total bearing hectares has a wide range of tree ages, with some at the immature stage and others at full maturity. It is important to keep in mind that the average industry production is not a clear indication of an individual orchard's production potential – it is simply an industry measurement for comparison. It is important to acquire orchard-specific data, such as that obtained from the industry benchmarking program, prior to purchasing an orchard.

Industry average production 2010-2016

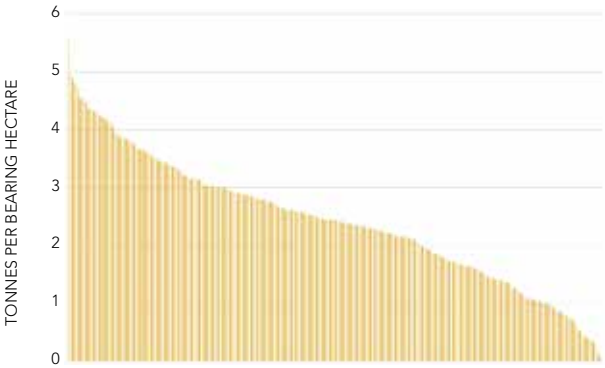
Year	Hectares of bearing age (rounded to nearest 500)	Industry production (NIS)	Industry average production
2010	14,000	35,500	2.5t NIS /ha
2011	15,000	28,500	1.9t NIS /ha
2012	15,500	38,500	2.5t NIS /ha
2013	15,000	35,200	2.3t NIS /ha
2014	15,500	43,600	2.8t NIS/ha
2015	16,000	48,300	3t NIS/ha
2016	16,500	52,000	3.2t NIS/ha
5-year industry average			2.8t NIS/ha

The industry average production has been as high as 3.8t/ha (2004), 3.6t/ha (2006) and 3.2t/ha (2016). There is substantial variation in the per hectare production across the industry.

INDUSTRY PRODUCTION

The graph below illustrates the variation in production per hectare across the orchards in the benchmarking program. The highest production is over 5.5t, and the lowest is less than 1t NIS/ha. The top 25% of the industry averages over 4.5t NIS/ha, however the bottom 25% average around 1.2t NIS/ha. This variation occurs due to a range of issues such as: regional weather conditions, orchard health, tree age, timing of management operations, size of orchard and tree variety.

Average nut-in-shell productivity per hectare
Benchmark sample 2009-2016



For the purposes of economical analysis, it is recommended that the 5-year industry average of 2.8t NIS/ha be utilised, with an understanding that, with good management, an orchard has strong potential to exceed that level of production.

ABOUT THE INDUSTRY BENCHMARKING PROGRAM

The industry has a **benchmarking program** that provides all participating growers with an orchard-specific breakdown of production compared to regional, state and national production. Over 250 orchards are currently involved in the benchmarking program, which has been operating since 2011. If you are looking to purchase an existing orchard, the AMS recommends you ask the orchard owner for a copy of their benchmarking report.

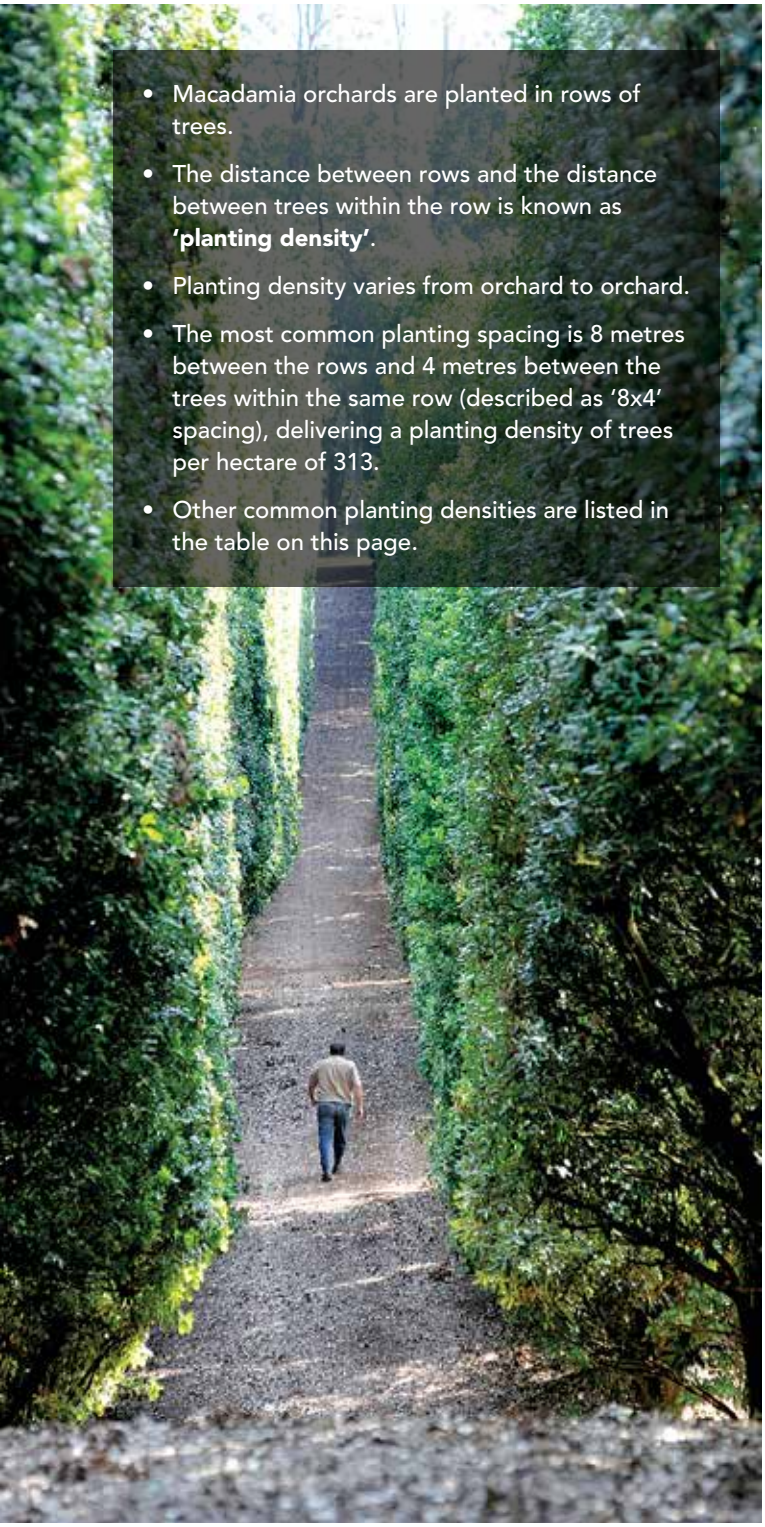
MORE INFORMATION

For further information on how to improve production of NIS per hectare, we recommend you join the Australian Macadamia Society (AMS), attend an AMS New Grower Workshop and the variety of industry meetings on offer (e.g. AMS MacGroups & Field Trips).

Call the AMS on 1800 262 426 for more information or visit www.australian-macadamias.org/industry.

AUSTRALIAN MACADAMIA SOCIETY

INDUSTRY TREE SPACING (DENSITY)



- Macadamia orchards are planted in rows of trees.
- The distance between rows and the distance between trees within the row is known as **'planting density'**.
- Planting density varies from orchard to orchard.
- The most common planting spacing is 8 metres between the rows and 4 metres between the trees within the same row (described as '8x4' spacing), delivering a planting density of trees per hectare of 313.
- Other common planting densities are listed in the table on this page.

Planting densities

High density	>350 trees per hectare
Medium density	250 to 350 trees per hectare
Low density	< 250 trees per hectare

Row distance	Within row tree distance	Density per hectare	Classification
5	2	1000	High density
5	3	667	High density
6	3	556	High density
6	4	417	High density
7	3	476	High density
7	4	357	High density
7	5	286	Medium density
8	3	417	High density
8	4	313	Medium density
8	5	250	Medium density
9	3	370	High density
9	4	278	Medium density
9	5	222	Low density
10	3	333	Medium density
10	4	250	Medium density
10	5	200	Low density
10	6	167	Low density
10	10	100	Low density
12	3	278	Medium density
12	4	208	Low density
14	3	238	Low density
14	4	179	Low density
14	5	143	Low density
16	3	208	Low density
16	4	156	Low density
16	5	125	Low density

INDUSTRY TREE SPACING (DENSITY)

- **The main reasons for the difference in planting density is due to (but not limited to):**
  - Orchard site issues
  - Soil type (poorer soil may enable higher density planting, with richer soil likely to deliver larger trees hence a wider spacing is often utilised)
  - Varieties (some varieties grow quicker and/or larger than others)
  - Region (warmer regions often lead to larger trees)
  - Slope (steep slopes often lead to wider spacings)
  - Machinery width.

- **High production can be achieved across all planting densities, provided the correct management systems are applied.** There is a vast range of pro's and con's for the different densities, however outlined below is a simplistic way of looking at planting density. There is a move to lower densities in new plantings as the industry develops a better understanding of managing tree vigour.

- **General rules for planting density**
  - *Higher density orchards*
    - deliver an earlier yield return (as there are more trees per hectare when they are young, 3kg per tree over 476 [7x3] trees delivers 1.4t NIS/ha compared to 3kg per tree over 250 trees [10x4] delivers nearly half that at 750kg/ha),
    - but will also deliver an earlier canopy crowding issue (resulting in a need to undertake canopy management operations).
  - *Lower density orchards*
    - take longer to deliver the early yield (as there are less trees per hectare, only an issue when trees are young and canopy is under developed),
    - but will have a longer period where there is minimal to no need for canopy management operations to combat canopy crowding.
  - *Medium density orchards*
    - were designed to be a happy medium.

The most important factor to remember is that the common denominators are hectares and canopy volume. <u>The number of trees is irrelevant in the grand scheme of production.</u>

- **It is well understood from historical research that the ideal canopy volume per hectare is approximately 43,500m³.** More or less volume will deliver reduced yields (*based on historical industry canopy management research data).

- The lesser amount of canopy is often a result of young trees, hence the historical move to a higher density to speed up the process to reach peak canopy volume in a shorter period of time.

- **The main issue with higher density and medium density orchards as they get older is excess canopy volume,** as excess canopy volume often also leads to reduced production. A balance can be struck with good management practices to **maintain** an ideal canopy volume per hectare over time with a combination of integrated orchard management practices.

- **The key focus for macadamia producers is to reach 43,500m3 of canopy as quickly as possible** (to enable early yield) and then maintain that volume for as long as possible (often through a range of canopy management operations to combat orchard crowding).

Do not let the number of trees on an orchard be the main attraction.
Your focus should be on:
- production
- the total number of hectares under production, and
- the total canopy volume per hectare.

The integrated orchard management practice guide provides further information and advice. Visit the Australian Macadamia Society website to view and downland. Details below.

MORE INFORMATION

Further detailed information is available in the Resources and Research section of the Australian Macadamia Society website www.australian-macadamias.org/industry. Join the AMS today.

Call the AMS on 1800 262 426 for a membership pack.

AUSTRALIAN MACADAMIA SOCIETY

FARM GATE PRICES

The vast majority of Australian macadamia growers sell In shell (NIS) to processors. The NIS has a measurable amount of kernel contained within it, with the main driver for difference being varietal.

- **The amount of kernel contained in the NIS is referred to as Total Kernel Recovery (TKR), and is reported as a percentage.**
  For example, a 10g NIS with a 3.3g kernel inside it is referred to as having a 33% TKR.
- **The Total Kernel Recovery is further broken down into either:**
  - premium kernel recovery (PKR)
  - commercial kernel recovery (CKR) or
  - reject kernel recovery (RKR).
- **Growers are paid for premium and commercial kernel but not for reject kernel.**
  Consequently, premium kernel and commercial kernel are often grouped together as **Saleable Kernel Recovery** (SKR). Industry data suggests an average breakdown of 97% SKR and 3% RKR. Using the example outlined above, the 10g NIS with a 33% TKR is further broken down to become 32.01% SKR and 0.99% RKR @ 10% moisture.
- **Generally, the higher the SKR and the lower the RKR, the higher the price the grower receives.**
  However, to provide a base point for pricing, the processors have traditionally offered prices to growers based on a nominal quality assessment, most commonly 33% SKR and 2% RKR @ 10% moisture.
- **Tree variety is the main driver affecting TKR, so it's important to understand the varieties on your orchard.**
  The difference is substantial, with some varieties ranging from 28% TKR through to 45% TKR. It is important to factor in that each variety has a predisposed TKR limit, with on-farm management having a minimal affect on TKR.
- **However, on-farm management does have a major affect on RKR.** This is because the main causes for RKR are management-related issues such as insect pest damage (spray coverage and timing) and harvesting and drying damage (harvesting regularity and drying facilities). Improved management practices can drastically reduce RKR. The first step to improve/reduce RKR for growers is to engage a professional pest consultant.

FARM GATE PRICES

HISTORICAL NUT IN SHELL FARM GATE PRICES

Year	NIS Farm Gate Price in $AU *(per kg NIS @33% SKR)*	Historical Average Annual Exchange rate *($AU to $US)*	NIS Farm Gate Price in $US *(per kg NIS @33% SKR)*
1996	$3.05	$0.78	$2.39
1997	$2.70	$0.74	$2.01
1998	$2.45	$0.63	$1.54
1999	$2.25	$0.65	$1.45
2000	$2.12	$0.58	$1.23
2001	$2.45	$0.52	$1.27
2002	$2.75	$0.54	$1.50
2003	$3.20	$0.65	$2.10
2004	$3.45	$0.74	$2.54
2005	$3.60	$0.76	$2.74
2006	$2.60	$0.75	$1.96
2007	$1.50	$0.84	$1.26
2008	$1.65	$0.85	$1.41
2009	$1.90	$0.79	$1.51
2010	$2.65	$0.92	$2.44
2011	$2.90	$1.03	$3.00
2012	$3.05	$1.04	$3.16
2013	$3.14	$0.97	$3.05
2014	$3.76	$0.90	$3.38
2015	$5.02	$0.79	$3.97
2016	$5.45	$0.75	$4.09

	$AU	**$US**
5 year average NIS price	$4.08	$3.53
7 year average NIS price	$3.91	$3.45
10 year average NIS price	$3.59	$3.16
20 year average NIS price	$2.93	$2.28

**Note: As over 70% of the Australian macadamia industry is exported, it is important for growers to be aware of the price in both $AU and $US as most nuts are traded internationally under $US. The table below highlights the previous 20 year average annual prices in both $AU and $US, illustrating the effect that the exchange rate can have on farm gate prices (with specific reference to 2012 to 2016)*

The average price is not a concrete indication on the future price, as international demand for the nut sector continues to climb and there is some potential for future price growth across all nut categories. However, prices of all agricultural products fluctuate, often wildly, due to a mix of climate, exchange rates and many other factors. It is always best to budget conservatively.

MORE INFORMATION

For more information on the industry's marketing program, and the outlook on future NIS prices, join the Australian Macadamia Society and attend our industry meetings, where you'll get to meet our industry experts.

Call the AMS on 1800 262 426 for a membership pack.

AUSTRALIAN MACADAMIA SOCIETY

GROSS INCOME

From the information outlined above on industry average production per hectare and industry average price per kg of NIS it is possible to develop an industry average gross income per hectare (Industry average production x industry average price = industry average gross income).

Industry average gross income calculations

- Industry average production (5-year average) = 2.7 t NIS/ha (2,700kg/ha)
  **Assumption made that the NIS is the industry average of 33% SKR.*
- Industry average NIS price (conservative 10 year average) = $3.55/kg NIS
- Industry average gross income = $9,585/ha.

The top 25% of the industry are producing a great amount of production per hectare, with the benchmarking data indicating an average of 4t NIS/ha. To provide an indication of how important production is to driving returns within the macadamia industry an analysis on the gross income for an orchard producing 4t NIS/ha has been completed below.

Gross income calculations for orchard producing 4t NIS/ha

- Top 25% industry average production = 4t NIS/ha (4000kg/ha)
  **Assumption made that the NIS is the industry average 33% SKR*
- Industry average NIS price (conservative 10 year average) = $3.55/kg NIS
- Industry average gross income $14,200/ha

It is evident that the gross income has increased dramatically with the increased production per hectare. This is in line with all of the industries economic analysis research undertaken to date, as the key recommendation has been that production is the main driver to increasing profitability. And further, it has been identified that timeliness of operations has the greatest impact on improving productivity. Doing the right operation at the right time. Timeliness has a greater positive impact than blindly increasing inputs. This is a very important factor to keep in mind prior to purchasing an orchard.

MORE INFORMATION

For further information on the industries gross income averages we recommend you join the AMS, talk with the Macadamia Industry Productivity Development Manager (MIPDM) and invest in attending an AMS new grower workshop.

INDUSTRY AVERAGE COSTS OF PRODUCTION

The industry has extensive data and understanding on industry average production costs. This includes all production aspects such as:

- labour
- contractors
- harvesting
- fertilising
- crop protection
- canopy management
- orchard floor management, and
- sorting shed management.

The Queensland Department of Agriculture & Fisheries (QDAF) collected cost of production data from a sub-sample of benchmark participants from 2013-2016. Analysis of these data provides insight into seasonal orchard expenditure and profitability, as well as a breakdown of expenditure. The table on the next page shows the top five heads of expenditure per hectare from 2013-2016 and compares these with the same expenditure costs in 2016. All remaining costs have been combined as 'other' in the chart.

GROSS INCOME

Average costs of production

Production cost	2016	Average 2013-16
Crop nutrition	$941	$841
Employment	$2,006	$1,555
R & M plant	$761	$699
Crop protection	$452	$427
Fuel & oil	$346	$421
Other	$2,064	$2,038
TOTAL	$6,570	$5,981

**Important note: These are production costs, and do NOT include any capital costs associated with the purchase of the property or the servicing of capital finance.*

**Note: This information is generic in nature to provide basic economic information. The information is not guaranteeing that increasing production is as simple as increasing input costs. Many other factors are at play including: timing of applications, weather conditions, varieties and the health of the orchard). There is strong agreement across the industry that reducing input costs will likely have a detrimental effect on production. Consequently, maintaining or increasing an investment into production costs with the assistance of a suitably qualified consultant has strong potential to increase production. This is particularly true for orchards that are run down, and/or have a poor orchard health starting point. Cost data is collected and categorised according to a standard chart of accounts that allows comparison of costs across a range of farms and management systems.*

*Note: Cost data is collected and categorised according to a standard chart of accounts that allows comparison of costs across a range of farms and management systems.

AVERAGE IRRIGATION COSTS

The additional costs associated with irrigation are estimated at $2000/ha for establishment, but can vary greatly depending on site, region and access to irrigation water. Plus an additional $500/ha for annual running and maintenance costs, that again can vary greatly. While these costs seem to be substantial, they equate to less than an additional 1 tonne of NIS to cover the cost of establishing irrigation over the life of the orchard (based on a 10-year average price of $3.55) and an additional 200kg of NIS per hectare to cover the annual running and maintenance costs of the irrigation. Irrigation has proven to deliver yield increases, particularly in dry seasons and should be considered prior to purchase.

Many regions, such as Bundaberg and Emerald, require irrigation to produce a macadamia crop annually. While in other regions, such as Nambucca and the Northern Rivers of NSW, irrigation is not necessarily required every year but it is more of a benefit in the dry years (which can be 3 out of every 5 years). The main point of difference across the regions is the amount of annual rainfall on average. Bundaberg, for example, has approximately 600mm of rainfall per year, compared to the Northern Rivers of NSW that has over 1800mm/year.

A major benefit with the use of irrigation is the ability to influence the **timing of when water is applied** to the orchard, compared to rain being out of growers hands. This is a crucial point in horticultural production, as the amount of water and the timing of the water are equally important. The timing is important to enable the growers to compensate for high use periods (such as flowering) and high water loss (evapotranspiration) periods from the tree. Without irrigation, the dryland growers are at the mercy of the weather. With irrigation, growers have added costs but also an added opportunity to increase yields. For further information on this issue, become an AMS member and access further detailed information on irrigation and production costs.

It is important to note that average costs of production did not vary greatly, no more than 30% on average across the different sizes and regions. However there was an indication that orchards that had a higher investment into their production costs were more likely to achieve a higher production of NIS per hectare. It was a disproportional relationship, in that a 30% increase in production costs (from $5,850/ha to $7,605/ha, a difference of $1,755/ha) had a high potential to deliver a 60% increase in production (2.4t NIS/ha to 4t NIS /ha). Effectively this means that the extra investment of $1,755 (30% increased production cost investment) had a high likelihood of delivering an additional $4400 (1.6t NIS/ha @ $2.75/kg NIS).

MORE INFORMATION

For further information on the industry's average production costs and their relationship to production, join the AMS, talk with the Macadamia Industry Productivity Development Manager (MIPDM) and attend an AMS New Grower Workshop. Call the AMS on 1800 262 426.

AUSTRALIAN MACADAMIA SOCIETY

LEVY PROGRAM

An industry levy is collected from all Australian macadamia growers in order to raise the necessary funding for research and industry development and marketing – projects which are essential for ensuring the macadamia industry remains a strong and successful industry now and into the future.

The levy has arguably been the single most important driver of the growth of the Australian macadamia industry. Unlike many other new rural industries that emerged around the 1980's, the macadamia industry understood the need to invest in its development and future.

The industry is now worth $286.5 million (farmgate), $321 million (ex-factory) and $576 million (retail). It is Australia's second largest horticultural export. There would not be a grower or other participant in the Australian industry who has not benefited - and continues to benefit - from research, marketing and industry development made possible by the levy.

The levy is mandatory and is paid through processors and the Australian Government to Horticulture Innovation Australia (HIA), an all-of-horticulture, grower-owned company that administers the expenditure of levies.

Current projects being funded by the levy include the breeding program, research into reducing chemicals and improving sustainability, and innovative marketing development.

Successful projects funded by the levy

The levy has been responsible for the following success stories:

- Improved control and treatment of husk spot and lace bug
- Mactrix is one of the most successful biological controls in Australian horticulture, and has allowed the macadamia industry to have one of the highest rates of adoption of Integrated Pest Management.
- IOM (Integrated Orchard Management); Canopy Management, Orchard Floor Management and Drainage Management working together in an integrated manner to drive production, minimise erosion, improve machinery access and improve light into the orchard.
- ION (Integrated Orchard Nutrition); working with up to date and professional ION consultants and focusing on the 3 key pillars of a macadamia nutrition program, organic matter, soil moisture and nutrient balance and availability (pH).
- Integrated Pest and Disease Management (IPDM); the R&D program invests in engaging qualified and experienced researchers to undertake detailed and macadamia specific IPDM research with a key focus of providing improved practices to assist growers increase both production and profitability.
- Publications, grower meetings and conferences that have spread the message and led to wider adoption of the very latest best practice methods
- Macadamias were one of the first industries to commit to regular residue testing through the National Residue Service and a special purpose levy. This program has shown the industry has a record of 20 consecutive years of 100% compliance with all relevant residue standards and many years of no recorded residues. This is a record the Australian Government calls "exemplary" and is unique across the global nut sector. It is one of the reasons that Australian kernel attracts a premium of up to 15% in global markets.

RESEARCH & DEVELOPMENT PROGRAM

The Australian macadamia industry's research & development (R&D) program is guided by the Macadamia Industry Productivity Development Manager (MIPDM) who is employed by the AMS and levy funded.

The AMS MIPDM manages industry engagement with the R&D program through input from growers, consultants and processors.

LEVY PROGRAM

The strategic goal of the R&D program is to increase industry average production from 2.4t/ha NIS to 4t/ha NIS.

The MIPDM works with Horticulture Innovation Australia, researchers, growers, consultants and processors to initiate needed research projects, study tours and various extension platforms across all major growing regions.

The R&D program has a proactive focus to deliver valuable information to growers that will increase grower production, profitability and sustainability.

A wealth of information is available to AMS members and levy payers through AMS and industry publications, regional grower meetings and various study tours.

MARKETING PROGRAM

The Australian macadamia industry's marketing program is coordinated by the Marketing Development Manager (MDM) in consultation with industry marketers and processors to ensure the program is closely aligned with the commercial sector. The MDM is employed by the AMS and levy funded.

Over the last five years the Australian macadamia industry marketing has evolved considerably from a generic marketing program that was historically based on short-term promotional sales tactics to a successful long-term strategic program, designed to protect and build the value of the industry and maximise long-term returns for all growers and industry stakeholders.

The overarching aim of the program is to optimise the value of the Australian macadamia industry across the supply chain and directly influence productivity and farm gate profitability.

The program has delivered excellent value, with success proven on key metrics and most strategic targets and KPIs exceeded. Farmgate value of the industry has more than doubled since 2010, while grower profitability has risen threefold. Wholesale and retail value have also grown significantly.

Of the 70% of production that is exported, the majority attracts a price premium over other origins, signalling a high level of global competitiveness. New investment has grown substantially, and the industry is expected to grow by approximately 15,000 ha by 2022, providing long term industry growth prospects and making the industry more sustainable by providing customers with greater surety of supply.

Additional information on the Australian Macadamias marketing program can be delivered to AMS members and levy payers on request.

IMPORTANT FINAL NOTE

It is important to note that all of the information presented in this booklet is based on a per hectare basis, **NOT a per tree basis.**

As outlined earlier, planting density differs across the industry for a range of unique reasons. Consequently it is important for all industry discussions to be based on a common unit of measurement – **per hectare.**

Orchards are not sold or valued on a per tree basis. They are sold and valued on a **per hectare basis.**

The true value of the orchards is aligned to the production achieved per hectare. A higher per hectare producing orchard is of higher value because it offers an increased return on investment track record, or in some cases the potential for an increased return on investment (new varieties or young trees for example). Newsagents are not sold on the number of magazine and newspaper stands they have. Newsagents are a business and are sold on the production and return on investment potential.

Whether you are entering the industry on a lifestyle basis or to generate a full income, macadamia orchards are a business and should be discussed and valued accordingly.

MORE INFORMATION

For further information on any of these issues, we recommend you become an AMS member and access further detailed information. The Australian macadamia industry is an open, proactive and cohesive industry focussed on long term profitability and sustainability.

AUSTRALIAN MACADAMIA SOCIETY

NEXT STEPS

Join the Australian Macadamia Society today

This booklet provides a brief overview of some of the key aspects of the Australian macadamia industry.

However please keep in mind - this is just a snapshot of the information available to Australian macadamia growers. Detailed information across all aspects of macadamia production and marketing is available to Australian Macadamia Society members and levy payers.

To help make an informed decision prior to purchasing an orchard, we strongly recommend you join the Australian Macadamia Society.

The AMS exists to provide you with the support you need to help you and your business thrive.

We are an organisation set up solely for the benefit of our members and completely focussed on delivering a better bottom line for macadamia growers. We are regarded as one of Australia's strongest horticulture industry organisations - a reputation earned over 40 years through sound leadership and planning. Our management of the national R&D and marketing programs has helped

the Australian macadamia industry achieve a world-leadership position and deliver real benefits to growers and industry.

AMS membership gets you 4 AMS News Bulletins (the official industry magazine containing the very latest research, technical and market information and analysis) delivered to your door per year, together with loads of other benefits including WFI rebates, invites to key industry and grower networking events (eg AMS MacGroups and Field Trips), support and assistance on the issues that are affecting you on-farm (eg disaster relief, rezoning) and advice and technical expertise from AMS staff. You also get discounts to industry events like the AMS conference and save 20% on all AMS resources (eg the Grower Handbook).

Become an AMS member today and take your place within this world leading industry.

To become an AMS member, or to receive a membership pack, please contact the AMS office on 1800 262 426.

AUSTRALIAN MACADAMIA SOCIETY

NEXT STEPS

Attend an AMS New Grower Workshop

From time to time the AMS holds New Grower Workshops where you can meet other new growers, see our best orchards up close and talk to experts from the Australian Macadamia Society. Workshops are held when there is sufficient interest registered for the event so if you would like to learn more about the macadamia industry please contact the AMS office on 1800 262 426 to register your interest.

Register today to attend an AMS New Grower Workshop. For dates and details, please contact the AMS office on 1800 262 426.

Get the latest news and events

Keep your finger on the pulse by signing up to receive the AMS e-newsletter and visiting the AMS website www.australianmacadmias.org

The e-newsletter and website will give you all the latest industry news, fact sheets, contacts, research and development & marketing updates, upcoming events and workshops and training and funding opportunities.

Sign up to the e-newsletter for free via the front page of the AMS website www.australianmacadmias.org.

AUSTRALIAN MACADAMIA SOCIETY

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T 1800 262 426 / +61 2 6622 4933
F 61 2 6622 4932
113 Dawson Street Lismore NSW 2480 Australia
www.australianmacadamias.org