Pistachio Growers' Association

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PISTACHIO SEASONAL REMINDERS

SUMMER & PRE-HARVEST

2017/2018

Welcome to 2018! Hopefully, you all had a break during the Festive period and are refreshed and ready for the upcoming harvest period.

We are now in the nut fill period of the pistachio production cycle which is a critical phase when the kernel grows and causes the shell to split. Key orchard management issues at this time are irrigation and nutrition. This is also the time to prepare the orchard for harvest, take leaf analysis samples and bud young trees.

MANAGEMENT DURING NUT FILL

As discussed above, the nut fill period is a critical phase of the pistachio production cycle. Key management issues during this period include:

- **Kernel development**. During the nut fill period, the kernel within fruit start to grow and fill the shell. Having a good understanding of kernel development and nut fill is important when considering fertiliser applications etc.

  ***Bottom line**: Develop a good understanding of kernel development during the nut fill period by cutting open developing fruit. For example, Photos 1 & 2 show pistachio fruit at about 25% nut fill and 100% nut fill respectively.*

Photo 1: Approx. 25% nut fill

Photo 2: 100% nut fill

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- **Irrigation**. Pistachio trees are sensitive to water stress during the nut fill period (from late December to harvest). Shell splitting is particularly sensitive with water stressed trees having reduced kernel growth, fewer properly split nuts and more narrow or non-split nuts resulting in lower returns to growers.

  ***Bottom line**: Pay particular attention to irrigation during the nut fill period up to harvest to avoid water stress, maximise kernel growth and hence the percentage of nuts that split properly.*

- **Nutrition**. Studies have shown that almost all current season potassium uptake by a pistachio tree occurs during the nut fill period. They also take up considerable amounts of nitrogen at this time.

  ***Bottom line**: Ensure trees are well supplied with potassium fertiliser during the nut fill period. The rates applied should be matched to expected yields. Nitrogen fertiliser applications are also important for kernel growth but care is needed to avoid stimulating vegetative vigour. Again, the rates applied should be matched to expected yields.*

- **Disease management**. Most growers have been applying fungicides during the growing season. However, continued monitoring is important to avoid disease outbreaks. With harvest approaching, care is needed to observe withholding periods.

  ***Bottom line**: Keep a look out for disease symptoms. Pay particular attention to and observe withholding periods.*

HARVEST PREPARATION

Issues to consider when preparing for harvest include:

- **Orchard preparation**. Remove low lying and/or fallen limbs that may interfere with tree access for the shaker and/or receiver. Prepare the orchard floor by mowing weeds, filling holes etc.

  ***Bottom line**: Ensure access for the shaker and receiver to maximise removal and catch of fruit.*

- **Harvest machinery**. It is important that harvest machinery is in good working order prior to the harvest period commencing and plenty of spare parts are available as breakdowns do occur.

  ***Bottom line**: Ensure harvest machinery is in good working order. Review spare parts on hand and order additional spare parts if required.*

- **Understanding fruit maturity**. For most efficient use of harvest machinery, it is important to be able to determine when pistachio fruit are mature and ready for harvest. This occurs when the fruit changes colour and separates cleanly from the tree with a gentle shake. At full maturity, the hull also separates cleanly from the shell – otherwise known as hull-slip (Photo 3).

  Note that pistachio fruit do not mature/ripen evenly throughout the tree meaning there will be mature and immature fruit present (Photo 4). After the first shake, growers allow the remaining fruit to ripen further and then reshake the trees.

Photo 3: Hull slip in pistachio.

Photo 4: Pistachio ready to be harvested. Note presence of mature and immature fruit.

***Bottom line**: Growers should assess fruit maturity carefully to determine when enough fruit is fully mature and ready to harvest. Late harvest increases the risk of nut damage and reduced value through fungal infection, increased shell staining and adhered hull.*

- **Contract harvesting**. Many smaller growers use a contract harvester. For those growers, work closely with your contract harvester to ensure trees are harvested at the optimum time.

  ***Bottom line**: Maintain regular contact with your harvest contractor aiming to harvest trees at the optimum time.*

- **Transport**. With pistachio, shell staining increases with increased temperature and storage time. Therefore, it is critical to ensure fruit is delivered to the factory as soon as possible (preferably within 24 hours) following harvest.

  ***Bottom line**: Discuss your requirements with your transport contractor stressing the need for fruit to be delivered to the processor as soon as possible following harvest. Be sure to inform your transport contractor of traffic requirements at the processor.*

- **Processing**. All growers have been sent the '*Pre-crop circular for the 2018 pistachio season*' from the Australian Pioneer Pistachio Company (APPC) which outlines the services provided by APPC along with details/policies regarding scheduling deliveries to the processor, delivery of in-hull pistachios, aflatoxins and foreign matter. Growers need to complete and return the circular by 22nd January 2018.

  ***Bottom line**: With only one major pistachio processor in Australia, it is critical that growers liaise closely with the processor to develop a schedule which best fits your needs and the needs of all growers. Of most importance is keeping the processor informed of deliveries especially if there are unexpected delays. For more details, contact Ray Harris (Operations Manager – Pistachios) on 0427 400 640*

LEAF ANALYSIS

For pistachio, conventional leaf analysis is conducted in the month prior to harvest. The plant part sampled is a single leaflet from 1 of the 2 subterminal leaflets (not a terminal or end leaflet) from a fully expanded leaf in the middle of non-bearing shoots (Photo 5) located about 1.5 – 2m above the ground.

Photo 5: Pistachio leaf sampling. Arrow shows correct leaflet to sample.

Research conducted in California recommends collecting 8 leaflets from 18 trees to represent a planting/block allowing 30m between trees sampled.

For more information on leaf analysis, contact Ben Thomas Consulting on 0417 143 797 or benthomasconsulting@bigpond.com

BUDDING YOUNG TREES

Rootstocks planted in spring 2017 should now be ready for budding. Budding can continue as long as there is sap flow and the bark on the rootstock 'slips' allowing insertion of the bud. Note that when trees are budded later in the season, it is possible that the new bud will remain dormant. Do not try to force growth from such buds as the young growth will then be susceptible to frost damage in late autumn and winter. These dormant buds generally survive and start growing in the following spring.

Some other considerations regarding budding of young pistachio trees are:

- *Do I use a contractor to bud the trees?* Contractors, whilst more expensive, typically provide some guarantee of success. If you are not confident budding trees, consider using a contractor.
- *Where do I source budwood?* At this stage, the Australian pistachio industry does not have a budwood depository. Instead, budwood is sourced from existing orchards.
- *Can smaller trees be budded?* Smaller trees can be budded but, generally speaking, rootstocks with diameters of at least 1cm will take a bud better and push the bud harder than smaller trees.
- *How many male trees should I have?* Pistachio trees are dioecious meaning they have separate male and female trees with the female trees bearing the fruit. Pistachio trees are also wind pollinated and there needs to be sufficient male trees to produce enough pollen to fertilise the female trees. Traditionally, about 8-10% of the trees in an orchard were male but more recent plantings have seen fewer male trees planted (4%) which appear to yield as well as older plantings.
- *Which male trees should I have?* There are 3 types of male pistachio trees used in Australia which vary in flowering time – early, mid and late. I recommend including male trees of each type in a planting.
- *What planting pattern do I adopt?* Most growers opt for a rectangular planting pattern meaning there are male trees evenly spaced in a grid pattern.

For more details or to discuss any of the issues raised in this seasonal reminder, contact Ben Thomas on 0417 143 797 or benthomasconsulting@bigpond.com