TIMELY *hints*

NOVEMBER 2020
STONE FRUIT PRODUCTION

SOIL

Mulching

- A mulch should be applied after your first full irrigation. A layer of decomposing straw or bark chips can be applied around the stem or on the entire "bankie". Mulching will control weed emergence, decrease re-compaction of the soil, moderate the soil temperature, increase water penetration, increase biological activity and help with preserving the soil's moisture content.
- Keep a hand-width space around the trunk of the tree to avoid the trunk making contact with wet mulch, this will reduce the risk of Phytophthora infection.
- If mulch availability is limiting (as it often is), prioritize as follows:
    - Water needs to get into the root zone so first apply on soils with a surface crust that impedes water penetration. Crusts form where clay is placed on the surface or where top soils are bleached (grey-white in colour).
    - Then treat soils with a very low water holding capacity such as very sandy soils with a coarse sand grade, soils with a large coarse fraction or orchards with a very shallow root depth. Applying a mulch here will reduce the speed of drying and thus give you a buffer against drying out.
- DO NOT apply a mulch if an orchard has high nematode counts. First treat the nematodes, then prioritize the orchard for mulch application. The active ingredients in many products react with organic material, reducing their efficacy.

Drainage

- Several drainage options can be considered.
    - A **cut-off** drain consists of a perforated pipe, which runs below the soil surface and removes subsurface water.
    - A **French drain** has a similar design to that of a cut-off drain, except that rocks are placed above the pipe up to the soil surface, instead of soil. This allows the drain to intercept both surface and subsurface water. On heavier soils where water infiltration is retarded and surface run-off occurs, a French drain design is more effective seeing that it can also intercept surface water.
    - An **open trench** can also be used and is typically a 1.2m deep open furrow which can serve to 1) intercept water before it enters a block from higher lying areas, or 2) be used to remove water that was collected by the other formal subsurface drains.
- Install drainage during the dry season and after soil preparation.
- Consult a soil scientist or irrigation specialist for a drainage design.

IRRIGATION

- Refer to the September *Timely Hints* for an irrigation monitoring strategy.
- Most cultivars have now progressed to the rapid fruit growth stage and soil moisture should thus be managed correctly. Only allow water extraction of 45% of readily available water so as to ensure that there is a buffer of soil moisture in case a pump breaks or there is a very warm day.
- This will mean that if you irrigate according to a roster (2 hours on Monday, Wednesday, and Saturday for example), consider shortening the waiting period as well as the irrigation length. Ultimately you may give the same volume of water but the level of stress due to drying out is reduced.
- Take care to not over-irrigate when making these adjustments.
- For further information on irrigation strategies see: http://www.hortgro-science.co.za/irrigation-seminar-summary-report/

NUTRITION

- Nutrition, after irrigation and pest management, is the most influential factor on fruit size and quality.
- Now is the time to adjust your fertilizer program to support the crop that has set. Redo your yield estimate and communicate this to your consultant/agent as to increase or decrease fertilizer and foliar feeds accordingly.
- Consider yield and vigour.
- Adequate potassium (K) supply is important for fruit size due to its role in water movement and turgor pressure in the plant. K is primarily applied as a foliar using:
    - Potassium Nitrate (KNO_3 390 formulation) at 1000g/100L water. Nitrate will also increase shoot growth.
    - Potassium Sulphate (K_2SO_4 429 formulation) at 920g/100L water. The sulphate formulation should be used if vigour is too high.
    - Apply 1 to 5 sprays from pip hardening, waiting 14 days between applications.
    - K fertilization can be done through many products, KCl being the primary source due to its availability and high K content of 50%.
- If vigour is lacking you may want to increase the N application through fertilizer or foliar application. Remember you need adequate new growth to ensure bearing positions for the following season.
    - Urea (LB) can be applied as a foliar at a rate of 500g/100L of water.
    - Apply 2 to 4 sprays where vigour is poor, waiting 7-10 days between applications.
    - Start application at 100% petal drop.
    - Do not apply if vigour is adequate to strong.

HARVESTING TIPS

Your exporter will be giving you guidelines as to the maturity standards that they require for export and the Department of Agriculture, Forestry, and Fisheries (DAFF) applies maturity standards for export which are monitored and verified by the Perishable Products Export Control Board (PPECB) who acts as an assignee for DAFF. The following are just some tips when it comes to harvesting:

Apricots

The most common maturity standard used for Apricots is the so called wring test that is when one cuts the apricot in half and wrings the two halves apart. The pit should be loose from the flesh. If it is loose then the apricot is mature enough to harvest. Exporters also have their own firmness guidelines which you must check and as well as checking with your exporter as to what flesh firmness they require. Especially for over maturity, firmness is critical. Soft apricots will be rejected.

When harvesting Apricots the following is recommended:

- Giving the pickers Cotton Gloves to pick. This is a good idea as will reduce incidents of nail injuries etc. greatly and psychologically also makes them realize it is a very sensitive fruit to handle.
- Injuries such as torn stems or stem causing injuries to the fruit are the biggest problem in apricots.
- Most injuries happen when the apricot is picked as it is lifted against the branch as one picks it. Give apricots a slight twist when harvesting but be careful not to injure the shoulders with this action.
- Once one has determined the colour of the fruit of the maturity that one wants to harvest, one aims to pick to that colour standard. Almost a green, lime, yellow colour, is normally the standard.

Apricots destined for the EU are required to complete a phytosanitary registration process and will be required to implement the Fruit Fly Management System in all registered orchards. Contact your exporter or HORTGRO for further information.

Dessert peaches

Remember to check with the exporter for the maturity standards they require. Peaches are harvested according to flesh firmness and correct firmness will determine the background colour that one needs to harvest at.

- Injuries are also a major problem and one must take the same care as one would with apricot harvesting and that one does not injure especially the shoulder of the fruit.
- Over mature fruit is a problem, so one needs to harvest dessert peaches at least three and sometimes four to five times.
- Some of the early dessert peaches, it is better to harvest into trays and always keep the tip of the peach upright.
- Spray ReTain (3-Buteoic Acid Hydrochloride) to delay harvest a little bit and give firmer fruit with less soft tips. This works very well for nectarines but also for some of the Peach Varieties. Discuss with your exporter and spray representative.
- Peaches destined for the EU are required to complete a phytosanitary registration process and will be required to implement the Peach and Nectarine FCM Management System in all registered orchards. Contact your exporter or HORTGRO for further information.

Dessert peaches destined for the EU are required to complete a phytosanitary registration process and will be required to implement the Peach and Nectarine FCM Management System as well as the Fruit Fly Management System in all registered orchards. Contact your exporter or HORTGRO for further information.

Nectarines

Nectarines are also picked on flesh firmness; you should check maturity standards with your exporter. Some of the new nectarine varieties that are full red are difficult to harvest as they

obtain the full red colour before they mature and one cannot just pick on colour. If there is a bit of background colour, that is useful to pick on but a tip that I have found that worked well over the years is that when the nectarine loses its glossy shine and gets a bit of a dull haze on the epidermis, is normally a sign of correct maturity. Again taking firmness tests and determining which fruit is mature and which fruit is not, can give one an indication of the colour standard one must pick to. Size does play a role in maturity, in that the larger fruit are more mature than the smaller fruit, especially for the first one or two picks.

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Yellow cling peaches

Probably the easiest to pick but that does not mean to say they can be handled roughly. Here it is really only colour that determines maturity and especially if one is picking for canning. The canners will determine maturity by colour, they don't want green fruit. South Africa's reputation as a supplier of top quality canned peaches is partly because of the very good yellow colour. This is why many buyers around the world prefer South African canned peaches - because of their excellent yellow colour standard.

Plums

Plum maturity is also determined by flesh firmness, as well as % TSS (Total Soluble Solids). Check with your exporter regarding the maturity standards that they require for their markets. Most plum varieties are picked out, using colour as the guide of what to pick and what to leave behind. A good rule of thumb is, the day you think you must start picking the plum variety, wait two days and then pick. Your first pick should be at least 20% of the crop, if you cannot take off 20% with the first pick then you are picking too early. The following guidelines are given:

- Varieties such as Laetitia: The first pick is almost always ¾ red fruit and redder. The next pick half red and redder fruit and the last pick is a strip pick. In other words for the 2nd and 3rd pick one has less red colour in the fruit. This rule of thumb generally works.
- Injuries are also a great problem in plums.
- Rub marks are also a big problem in plums. Some varieties are far more susceptible than others. Either pick plums into plastic bins or use plastic liners. The warmer the fruit, the more likely to incur rub marks. Try not to pick in the heat of the day.
- The size, especially with the first pick is an important maturity parameter, normally the larger fruit ripens first.
- For some of the yellow plums such as Songold, one can often get away with a single pick (strip pick). This can only be achieved if one had a very even blossom (Bud break).
- It is best to pick plums into plastic buckets (20 Litre) as the picking bags can cause too many rub marks and then to be transferred gently from the bucket to the picking bin.
- If one is transporting the fruit in bins to the pack shed it is very worthwhile, putting 150mm Polyethylene Sponge Mattress on top of the bin and tie it down tightly, to prevent fruit from moving up and down on the load bed of the lorry and causing rub marks.

A good norm for picking productivity is that a picker in a nine hour picking day should be able to pick 450kgs of plums per day. That is 50kgs per hour. If you are doing a strip pick then the rate should be at least 75kgs per hour.

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PEST AND DISEASE CONTROL

- The latest flowering cultivars of all stone fruit are well past set and approaching the final thinning date. On the other hand, the earliest cultivars have been harvested and the season is well under way.
- In preparation of the crop for marketing, one must be very aware of complying with the required withholding periods to prevent chemical residues being detected on the fruit destined for both the export and domestic markets. Your exporter may have more stringent requirements than the industry standard to be able to access their markets of choice. Please ensure you know where your fruit is to be marketed to be able to comply with your exporter's needs. The international market is constantly evolving, with products locally approved for the export market, being prohibited for use on products destined for the UK, by some of the importers.
- Thorough scouting and monitoring must be done to be aware of the pest status, especially for fruit fly on all stone fruit and FCM for the peaches and nectarines, for access to the EU market.
- **Fruit Fly – All Stone Fruit.** Spray Devipan @ 100ml/hl with a 14 day safety window, when the pest is noticed. Note that Devipan, being an organophosphate, is not allowed by many of the discerning markets, on their produce.
- The September Timely Hints depicting the control strategies for powdery mildew, thrips, OFM, fruit weevil, brown rust, freckle and gum spot, should be considered as well as the scale, fruit fly and post harvest decay procedures, as mentioned in the October Timely Hints. These control strategies should be applied to the cultivars as and when needed and applicable. In addition to them, the following could require additional control inputs:
- **False Codling Moth (FCM)—All Stone Fruit.** FCM is mainly a problem of stone fruit cultivars that mature after mid-December. Mating Disruption is a most efficient control measure for FCM. With the stringent legislation on EU market access, specifically for peaches and nectarines, cultivars from high pressure areas being harvested from late January onwards, should preferably be covered with a MD product. Isomate FCM @

600 Disruptors/Ha, giving 5-6 months of pheromone disruption, should be hung from early November to give the required cover on the later cultivars. Disruptors must be hung within the top 0,75m of the trees on the south-eastern side, keeping the dispensers out of the afternoon sun. Alternatively, Checkmate FCM-F, needs to be applied 21-28 daily (based on heat), using 110ml/Ha applied as a bait application into the tops of the trees, in 50 L water/Ha.

- Where MD is applied, it is important to monitor for FCM activity both outside the orchard and above the dispenser height in the orchard. The trap needs to be fixed to a wire attachment on a reed and positioned high up in the tree, pushing it above the pheromone dispensing height, but allowing it to be readily accessed for monitoring purposes.
- The FCM Virus Cryptex is registered on all stone fruit. This should be applied 10-14 days after a peak moth catch in the traps, at a rate of 60ml/Ha and be repeated 14 days thereafter at 35ml/Ha, until the moth infestation is under control. These virus applications should be applied in the later afternoon or evening (owing to their UV sensitivity), to assist in the viral load to suppress the FCM activity. All the FCM remedies, including the virus, are very Ph sensitive, and need to be maintained in the 5-8 range, for optimum efficacy.
- In addition to the sprays listed in the table, there are a range of pyrethroids registered for FCM control on stone fruit. One must however, be cautious of using too many pyrethroids, as they have a very detrimental effect on predators, which can result in problems controlling red spider. Pyrethroid use is not considered good IPM strategy.

Product	Safety (Days)	Number of Sprays	Peaches	Nectarines	Plums	Apricots
Altacor 10g OR Coragen 17.5ml	14	2	√	√	√	
Exirel 50ml	7	2	√	√	√	

Marskman 60ml	7	2	√	√	√	√
Ampligo 350ml/Ha	28	3	√	√	√ (14)	√
Calypso 15ml	60	3	√	√		
Delegate 20g	7	4 Including Tracer	√	√	√	√
Steward 20g	28	2	√	√	√	
Warlock 80ml	21	4	√	√	√	√

- Fruit Damage Assessments. Must be done in accordance with Hortgro's FF and P/N FMS Management Systems, 6 and 4 weeks before expected harvest and within 10 days of harvest, by inspecting 10 fruit per tree on the marked 25 trees/2Ha block.

TIMELY HINTS CONTRIBUTORS

Soil, Irrigation, and Nutrition	**Thinning and Newly planted trees**	**Pest and Disease control**
Mico Stander	Peter Dall	Andrew Hacking
Soil scientist	Technical consultant	Technical consultant
Agrimotion	Peter Dall Consultancy	Ad Lucem Agricultural Services
021 851 1051	028 272 9671	021 880 1905