TIMELY *hints*

AUGUST 2020
STONE FRUIT PRODUCTION

SOIL

General maintenance on your farm

- Clean drains of any debris or roots to ensure the drains are working optimally. Wet soils take longer to warm up (>13°C) and this will affect the bud break phase of trees in winter rainfall areas.
- Maintain roads and orchard floors in this period to facilitate tractor and spray cart movement.
- Maintain ridges to allow for an even surface. This will prevent puddling or run-off of irrigation water.
- Apply gypsum followed by mulch where ridge soil surfaces are prone to crusting. Gypsum will provide Ca to improve structure and mulch will provide the physical soil protection needed to prevent the "rain drop effect" that causes the crusting. Crusting can often be identified where significant moss is present on the ridge for most of the season, not only in winter.

Last application of lime

- Lime should not be applied much later than the beginning of August.
- Lime has a very low solubility (approximately 2%) and needs ample time (May to September) and water (rain in winter rainfall areas and irrigation in summer rainfall areas) in order to react in the soil and rectify pH within the root zone (Gypsum is more readily dissolved).

Applying too much lime or applying lime too late may increase adverse interactions between elements. Elements that are negatively affected by very high Calcium (Ca) concentration and pH are Zinc (Zn), Boron (B), Manganese (Mn), Magnesium (Mg), Iron (Fe), Potassium (K), Phosphorus (P). Therefore, stick to your advisor's recommendations.

IRRIGATION

Install irrigation for new developments

- If you have not done so already, install new irrigation systems for new developments, even if only mainlines and sub-mains.
- Do not wait until it is time to plant.

Ensure irrigation probes are appropriately placed and correctly installed

- Evaluate each soil moisture probe with regards to:
    - Data quality in the previous season: do you see clear trends?
    - Placement relative to the tree (in root zone?) and emitter (in wetted zone?)
    - Is the probe still in working condition?
- Decide whether any probes need to be repaired, moved, or reinstalled.
- Install any new soil moisture probes. Probes need to be representative of:
    - The largest soil body in the orchard.
    - Primary cultivar in the orchard.
    - Typical trees in the orchard (not a small sickly area or a small vigorous area)

Do not wait until October to do this as probes need to settle before proper function should they need repair or replacement. The probe suppliers are also very busy as the season starts so do all maintenance before the bottleneck.

Probes are a vital part of effective water management and it is recommended that you familiarise yourself with the hardware and software and costs (capital and time) of various offerings. BUT please make sure that you are informed when making your decision to use, or not use, soil moisture probes.

Prepare irrigation system

- Do as much maintenance on the system as possible before the onset of the irrigation season as to avoid mishaps in critical periods.

NUTRITION

Order your fertiliser

- Do a stocktake of available fertiliser. Clean the storeroom. Your new fertiliser will arrive soon.
- Order all fertilisers and foliar sprays if you have not done so already.
- For early cultivars, the first nutrition can be applied at petal drop. Should you use a fertigation system, yet rain continues, it is proposed to convert to a granular source during the wet spring.

REST BREAKING OF PLUMS

This is one of the most critical actions on any stone fruit farm. The aim must be to get the tree to break rest uniformly and as condensed as possible. In South Africa, we never have enough winter chilling for most of our pome fruit varieties and at least half of the stone fruit varieties, so rest breaking is critical.

- All peaches, nectarines, apricots, and plums should be divided into high chilling, medium chilling, or low chilling requirement cultivars and the choice of product must be made according to the chilling requirement of that specific cultivar. You should also take the number of cold units recorded for the year and the delayed foliation history of the orchard [into account].
    - High chilling requirement cultivars such as Gaviota and Southern Belle:
        - Dormex 0.5 Litres per 100 Litres Water plus
        - Bud break (or similar product) 2-4 Litres per 100 Litres Water.
    - Medium Chilling Requirement Cultivars such as Songold and Laetitia:
        - 4 Litres Bud Break (or similar product) per 100 Litres water, or Dormex 0.5 Litres plus 2 Litres Bud Break per 100 Litres water.
    - Low Chilling Requirement Cultivars:
    - 3 Litres Bud Break per 100 Litres water.

On some of the Low Chilling Requirement Cultivars, no rest breaking product is required. This is only applicable in areas with sufficient chill units to satisfy the requirements of cultivars.

- The following should be noted:
    - Rest breaking products to be sprayed at 70-90% of high-volume requirement (minimum of 1000 Litres per hectare). Droplets 150 to 250 Micron will give best results.
    - It is important that you should experience some kind of bud swell before spraying but you do not want to spray later than the bud break stage.
    - With Dormex the pH of Spray Water is important, must be below 7.0 pH.

- Damage is sometimes experienced, to avoid damage, it is essential to get thorough continuous agitation of the spray mixture in the tank.
- Damage can also occur under the following conditions:
  - Stress Conditions caused by too wet or too dry soil or young unripe wood which normally occurs where growth continued until late Autumn/Winter.
  - When applying oil, best results are achieved if one has two to three days of warm weather after the oil spray so that the buds can sweat a bit under the film of oil.

If one can ensure good rest breaking, this will make farming for the rest of the year a lot easier, especially for thinning and harvesting. The more condensed and uniform the bloom, the better.

There are other rest breaking products, but out of personal experience, Dormex and Oil provide the best results. After the oil, if one wants to give the trees a boost, you can spray a week later with:

- 1 to 1,5 kg of Potassium Nitrate plus
- 6 ml Biowet per 100 Litres water

- Very good results have been achieved where one sprays peaches and apricots with rest breaking sprays, normally oil at between 2 to 4 Litres per 100 Litres water is sufficient for most peaches, nectarines, and apricots.

POLLINATION

All peaches and nectarines are self-fertile and do not require cross-pollinators. Most apricots are self-fertile and don't need pollinators but we have seen the advantage of placing bees into apricot orchards to distribute the pollen in the flower. We have definitely seen higher yields where bees have been put into apricot orchards.

For 80% of plum varieties, cross-pollination is critical. The industry norm is to have at least 11% of a cross pollinator variety in an orchard, often 20% is more desirable and having two cross pollinating varieties in an orchard is also very advantageous as one year the one may be a little bit out of sync with the main variety and the other year the other variety is more in sync. For varieties that are difficult to pollinate like Songold, at least 25% cross-pollinators in the orchard are recommended.

- Cross-pollination is the biggest reason for not achieving the desired yields in a plum orchard. Where you have adequate cross-pollination and good bee hive activity, you can

almost be assured of a good yield. This is one production input that you must not skimp on.

- For plums, you will require 3-6 bee hives per hectare from 20% blossom to 50% petal drop. More and more consultants in the field are saying that for difficult to pollinate varieties, we should be aiming for up to 12 hives per hectare. This seems very high but if it assures a good cross pollination, it is worth it.
- The advantage of rest breaking sprays in an orchard especially at high rates, [is that] it synchronises the pollinators much better with the main variety.
- Bee hives must not be put on the damp ground. They should be placed on crates, motor car tyres, or something that will take them off the damp ground. Also, they should ideally face east to catch the early morning sun. You should ensure that you do not apply chemicals that irritate or kill the bees.
- Local knowledge as to what the best pollinators are for the various varieties is your best source of information to determine which pollinators to use for which varieties.
- Spray practices during pollination

Whether a crop needs honeybees for pollination or not, and whether commercial beehives are hired or the producer takes his chances on natural pollinators, and even if the producer does not want pollination producing unwanted pips in certain crops, most flowers will be visited by both unwanted and beneficial insects - mostly in daytime, and whether you want to believe it or not - honeybees are insects as well!

Honeybees collecting nectar and/or pollen will and/or can be affected by all Chemicals - be it a fungicide, insecticide, herbicide, foliar feed, additive, or even just plain water, sprayed from the ground or from the air or sometimes fed through irrigation water into the root zone, applied both before and/or during flowering, with the effect either immediately or through delayed action, manifesting through disruption and/or repellence and/or poisoning.

And as proper pollination (or the lack thereof) does cost money, it will pay off to adhere to the following:

- Think about, plan and execute all chemical applications on all crops with care;
- Refrain from spraying during bloom if at all possible—all crops;
- Flowering weeds are highly attractive to bees—choose the method and timing of control with care;
- If spraying is needed during bloom, do so in the evening after the bees have stopped foraging;
- If using bees for pollination, plan for it beforehand, and place the hives appropriately;
- Do not spray within 2 to 4 full days of introducing the bees at around 15% bloom;
- Take care with snail pellets during and after rain and irrigation—contaminated pools are a serious risk to bees' drinking water.

PEST AND DISEASE CONTROL

- **Bacterial diseases & gumspot—All stone fruit**. Spray at **first signs of bud movement** Copper Oxychloride @ 350g/hl. Last copper spray for the season whilst fruit is on trees.
- **Scales and mealy bug—All stone fruit.** At **first signs of bud movement**, apply 2nd (final) 100ml/hl Dursban plus 500 ml/hl mineral oil for scale control. Where rest breaking sprays are applied to apricots and plums, rather apply this treatment with the heavier oil spray, effectively negating the 500ml/hl mineral oil requirement. If no rest breaking sprays are applied, add this spray to the copper.
- **Aphids—Peaches, nectarines and plums**. Spray Closer @ 5ml/hl at the first signs of infestation and follow up later if required. Safety window = 14 days.
- **Late Scale - All Stone Fruit.** Spray Movento @ 40ml/hl from 100% petal drop onwards, at first crawler movement for scale. Repeat 4 weeks later if needed. Safety window = 14 days.
- **Leaf curl—Peaches and nectarines.** Spray Thiram @ 150g/hl **5 to 7 days after copper** and **repeat every 4 to 7 days** (based on how wet trees are—dew and rain) before and after rain. Last spray at Full Bloom.
- **Blossom blight (*Monolinia laxa* brown rot)—All stone fruit.** Spray Chronos @ 27 ml/hl **weekly from 1 week after the copper till full bloom** on apricots and plums. In the case of peaches and nectarines add Chronos to the 30% blossom Thiram spray.
- **Powdery mildew—Peaches, nectarines, and apricots.** From **10% balloon on**, apply 60 ml/hl Nimrod @ 10-14 day intervals till 90% petal drop. Apply wettable sulphur @ 300 g/hl from 90% petal drop onwards at 10-14 day intervals, till 35 days before expected harvest, if required. This wettable sulphur will also control brown rust. Nimrod has a 28-day safety window and sulphur has a 0-day safety window, but BEWARE of visible spray residues.
- **Powdery Mildew—Apricots.** From **10% balloon on**, apply 1L/Ha Ortiva **OR** 55ml/hl Obstructo (1-day safety window) @ 10-14 day intervals, applying no more than 2 sequential sprays and 3 sprays in total, till 90% petal drop.
- From a resistance point of view, one should alternate 300g/hl wettable sulphur with these Ortiva / Obstructo sprays. Wettable sulphur is registered for brown rust control and as such will assist in controlling mildew. In addition to these sprays, apply wettable sulphur @ 300g/hl from 90% petal drop onwards at 10-14 day intervals, till 35 days before expected harvest, if required.
- **Blossom complex pests (Bollworm, Antestia, Fruit Nibbler, Green Peach Aphid)—Nectarines, Peaches and Plums:** Spray Klartan @ 30 ml/hl @ 10–30% flower (before bees are put into orchards), as and where required. Do not spray after 90% petal drop. Safety window = 60 days. Klartan is “safe” for bees.

- **Blossom complex pests (Bollworm, Antestia, Fruit Nibbler)—Apricots.** Spray Delegate @ 12g/hl. This dose will control thrips. A 20g/hl dose is registered for FCM. Safety window = 7 days.
- **Blossom Complex Pests (Green Peach Aphid)—Apricots.** Spray Aphox @ 50g/hl when pest first noticed. Safety window = 21 days.
- **Thrips—Nectarines and plums.** Apply 15 ml/hl Tracer @ 10% balloon and repeat 7-10 days later if needed. If bollworm is a problem, the Tracer can be sprayed at 20 ml/hl to cover for both thrips and bollworm. Safety window = 21 days on peaches and plums, 7 days on nectarines.
- **Oriental fruit moth (OFM)—Peaches and nectarines.** Where required, hang traps (1 trap/2 Ha) early August at the latest.
- **False codling moth (FCM)—All stone fruit.** Where required, hang traps (1 trap/2 Ha) early August at the latest.
- **Fruit Fly – All Stone Fruit.** Hang 1 trap/2 Ha to monitor fruit fly. These traps must be installed from petal drop onwards in all blocks to monitor the fruit fly activity, given the quarantine status of FFly for the European market, effective 1 Sept. 2019.
- **Brown rust, freckle, gum spot—All stone fruit.** Spray 200g/hl Captab at 75% petal drop and repeat 14 daily for 2-3 sprays, if needed (wet conditions). Safety window = 35 days on stone fruit. **OR**
- **Brown rust, freckle, gum spot—All stone fruit.** Spray 150 g/hl Dithane at 75% petal drop and repeat 14 daily for 2 to 3 sprays, if needed (wet conditions). Safety window = 63 days on peaches, 42 days on apricots and nectarines and 35 days on plums. Dithane's safety window may well change during the coming marketing season, which could result in fruit destined for the discerning German Supermarkets, not being permitted, where MRL's of 0,01 (level of detection) exist. Check with your exporter as to where your product is destined.
- **Fruit weevil (snout beetle)—Nectarines.** Stem bands are the best form of weevil control and should be placed around tree trunks before the trees start to bloom. You need to ensure that there are no "ladders" of pruning shoots or weeds, allowing weevils to access the trees above the stem bands. For chemical control, spray 40 ml/hl Steward once weevils are caught in the monitor bands or @ 75% petal drop. Safety window = 28 days.
- **Fruit weevil (snout beetle)—Apricots.** If needed, stem bands as for nectarines above, would be the best form of control. Here too, they must be applied before the trees start to bloom and ensure there are no "ladders" of pruning shoots or weeds for the weevils' access into the trees. Chemically speaking, apply 500ml/hl Xterminator if required.
- **Crown gall—All stone fruit.** All new trees' roots should be dipped in RAS 84, before planting. One packet treats 50 trees. *Agrobacterium radiobacter, a biological treatment is only preventative and not curative.*

TIMELY HINTS CONTRIBUTORS

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HORTGRO Stone

Growing Fruit IQ

home of the south african stone fruit producer