

AUTUMN NUTRITION AND IRRIGATION

WITH SPECIFIC REFERENCE TO STONE FRUIT IN TIMES OF WATER SHORTAGE

The aim of autumn nutrition is to achieve storage of the very necessary carbohydrates (starch) and nutritional elements in the fine roots of the tree, and also in the permanent roots, the wood and bark, for use during the leafless stage, as well as for bloom, flowering and set during the first weeks of development in the spring. For this, root growth, green leaves and sunlight are required. According to the research of Dr Piet Stassen, almost 70% of the reserves are stored in the roots.

Therefore, retain the leaves for as long as possible and avoid die-back of the roots. Also bear in mind that bud differentiation is sensitive to drought tension until mid-March.

Foliar nutrition

- Protect the leaves against insects such as red mite and diseases such as brown rust.
- Spray urea foliar nutrition at 1.0 kg/100 L to ensure that the leaves remain green and active. The dosage may be increased to 1.5 kg/100 L in March. Use your leaf analyses to determine whether boron must be added to the urea and study leaf analyses of the previous year (if not yet done) to determine which orchards must receive boron together with the urea.
- Follow up the urea spray, 7–14 days later, with more urea or, in cases where there are potassium shortages, with potassium nitrate at 1.0 kg/100 L. It is possible that in certain cases further potassium applications will be required. Discontinue applications in cases where the tree has lost less than 25% of the original leaf canopy.
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- Apply the autumn copper sprays at 75% leaf fall.

Application of fertilizer

- Use your leaf analyses to determine which elements and what quantities must be applied. Generally, only nitrogen should be applied, but sometimes potassium is also required to supplement the reserves. Phosphate is seldom required, but it may be required in a few orchards.
- The potassium and phosphate can be applied and washed into the soil directly after the harvest is complete. Potassium is vitally important for control of the stomata and the uptake of water, as well as the translocation of reserves.
- Nitrogen (N) can also be added before the optimal time of mid-March, but only to cultivars that will not regrow. Should regrowth take place, then the N, and not the reserves, is used for growth. To avoid regrowth, rather divide the N-fertilization into batches. Remember that new root growth is necessary to store the reserves and that the peak root growth is during February.
- Do not over-fertilize, as it increases the electrical conductivity (EC) of the soil water solution, leading to a reduction in water uptake and usage.

Irrigation

- Do everything possible to save water. Pay attention to leaking pipes, taps and dams.
- It is never too late to mulch orchards.
- Ensure that each microjet sprayer or dripper functions correctly.
- Irrigate orchards at night, for better effectivity. Alternate orchards so that the emitters can be checked during the day.
- Identify wetter areas on the farm that may receive less water and, for example, also the southern slopes where trees experience less stress.
- It is an ideal time to change microjet orchards over to drip irrigation.
- Limit the wetted surface when water becomes critically scarce. The easiest and

cheapest way is to place a plastic sleeve over the microjet sprayer so that it is changed to a large effective dripper. Any technique may be used to apply the water to a smaller area. The rotating wheel of the sprayer may be removed and the water will also fall around the upright. Do ensure that all trees receive water.

- Irrigate to full root depth rather than only regular surface wetting. Each time irrigation is applied, the surface water evaporates very quickly.
- Use all boreholes. Mix brack water with cleaner water to maximise the volume of water. Try to keep the EC of the water as low as possible for best water usage by the trees—in many brackish cases, not > 2.0 mS/cm.
- Consider installing a reverse osmosis (RO) system to purify the brack water. The product is clean potable water. It can be re-mixed to create a greater volume of water with a reasonable EC value—this then makes the system more economical.
- Install pipelines to relocate water from one source to another so that the total volume of water can be used more effectively.
- Now is the time to remove orchards that under-perform. Also remove unnecessary windbreaks that receive irrigation.
- Keep cover crops short. No weeds are tolerated in the root zone.
- Carry out watershoot management and retain only the effective leaves.
- Be careful not to drastically stress cultivars that are sensitive to bacterial kanker.
- Confirm the nematode status of orchards. Nematodes limit nutrition and water uptake. Where serious infections occur, these must be controlled.

May the sorely needed rains come in time.

Tienie du Preez

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HERFSVOEDING EN BESPROEING

MET SPESIFIEKE VERWYSING NA STEENVRUGTE IN TYE VAN WATER TEKORTE

Herfsvoeding het ten doel om broodnodige koolhidrate (stysel) en voedings elemente in die boom se fyn wortels, maar ook in ander wortels, hout en bas te stoor vir gebruik gedurende die blaarlose stadium asook vir bot, blom, set en die eerste paar weke se ontwikkeling in die lente. Hiervoor is wortelgroei, groen blare, water en sonlig nodig.

Volgens Dr Piet Stassen se navorsing word amper 70% van die reserwes in die wortels gestoor.

Behou dus die blare so lank as moontlik en voorkom terugsterwing van wortels. Neem ook in ag dat blom differensiasie sensitief is vir droogte spanning tot middel-Maart.

Blaarvoeding

- Beskerm die blare teen insekte soos rooispinnekop en siektes soos bruinroes.
- Spuit ureum blaarvoeding teen 1.0 kg/100 liter om die blare groen en aktief te hou. In Maart kan die dosis na 1.5kg/100 L verhoog word. Gebruik u blaarontledings om te bepaal of boor by die ureum gevoeg moet word en indien nog nie beskikbaar nie, bestudeer die vorige jaar se blaarontleding om te bepaal watter boorde saam met die ureum ook boor moet kry.
- Volg die ureum spuit 7-14 dae later op met nog ureum of waar kalium tekorte voorkom, dan met kaliumnitraat teen 1.0 kg/100 liter. Dit mag wees dat meer kalium toedienings in sekere gevalle nodig is. Staak bespuitings indien die boom minder as 25% van die oorspronklike blaardak verloor het.
- Dien die herfs koper spuite toe by 75% blaarval.



Kunsmis toediening

- Gebruik u blaarontledings om te bepaal watter elemente en hoeveelhede toegedien moet word. Meestal behoort slegs stikstof toegedien te word, maar soms is kalium ook nodig om die reserwes aan te vul. Fosfaat word selde benodig, maar kan in enkele boorde benodig word.
- Die kalium en fosfaat kan dadelik na die oes toegedien en ingewas word. Kalium is uiters noodsaaklik vir beheer van huidmondjies en opname van water asook translokasie van reserwes.

- Stikstof (N) kan ook voor die optimale tyd van middel-Maart toegedien word, maar slegs by kultivars wat nie sal hergroei nie. Indien hergroei plaasvind word die N vir groei aangewend en nie reserwes nie. Deel die N-bemesting dan liever in paaielemente op om hergroei te voorkom. Onthou dat nuwe wortelgroei nodig is om reserwes in te stoor en die piek wortelgroei periode is gedurende Februarie.
- Moenie oorbemes nie siende dit die elektriese geleiding van die wateroplossing in die grond verhoog en derhalwe wateropname en benutting verlaag.

Besproeiing

- Doen alles moontlik om water te spaar. Gee aandag aan lekkende pype, krane en damme.
- Dit is nooit te laat om 'n deklaag toe te dien nie.
- Maak seker elke spuit of drupper funksioneer korrek.
- Besproei boorde in die nag vir beter effektiwiteit. Alterneer boorde sodat die spuite in die dag nagegaan kan word.
- Identifiseer natter areas op die plaas wat minder water kan kry en byvoorbeeld ook

suidelike hange waar die bome minder stres ervaar.

- Dit is 'n ideale tyd om mikro-na drupbesproeiing om te skakel.
- Beperk die benatte oppervlakte as water kritiek min word. Maklikste en goedkoopste is om 'n plastiek kous oor die mikrosput te sit en dit sodoende in 'n groot effektiewe drupper te verander. Verskeie tegnieke kan gebruik word om die water op 'n kleiner area aan te wend. Die roterende wieletjie van die spuit kan verwyder word en die water sal dan ook rondom die pen val. Sorg net dat alle bome water kry.
- Besproei tot volle wortel diepte eerder as gereelde oppervlakkige benatting. Elke keer as besproei word, verdamp die oppervlak water baie vinnig.
- Benut alle boorgate. Meng brak water met skoner water om die volume water te maksimeer. Probeer die EC van die water so laag as moontlik hou vir beste benutting deur die bome - in meeste brak gevalle nie meer as 2.0 mS/cm nie.
- Oorweeg dit om 'n tru-osmose sisteem te installeer om brak water te suiwer. Die produk is skoon drinkwater wat dan weer vermeng kan word om 'n groter volume water teen billike EC te verkry om die suiwing meer ekonomies te maak
- Installeer pyplyne om water van een na 'n ander bron te skuif sodat die totale water meer effektief benut kan word.
- Dit is die regte tyd om boorde wat onder die rooi lyn presteer uit te kap. Verwyder ook onnodige windbreke wat besproei word.
- Hou dekgewasse kort. Geen kompeterende onkruid word in die wortelsone verdra nie.
- Bestuur waterlote om sodoende net die effektiewe blare te behou.
- Wees versigtig om kultivars wat gevoelig is vir bakteriese kanker té drasties te stres.
- Maak seker van die nematode status van boorde. Aalwurms beperk voeding en water opname. Beheer waar erge infeksie voorkom.

Mag die broodnodige reën betyds kom.

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