Managing Citrus Orchards when Excessive Rain and Waterlogging occurs

Presented by Wayne Mommsen

CRI Extension

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MANAGEMENT RECOMMENDATIONS FOLLOWING HEAVY RAIN IN NORTHERN CITRUS PRODUCTION REGIONS

Jan van Niekerk, Providence Moyo Coenraad Fraenkel, Pieter Raath, MC Pretorius, Elma Carstens and Aruna Manrakhan (CRI)

Volume 3 available on www.citrusres.com). These should be done at least once a week and in severe cases more often.

Treatment of hail damaged trees

1. Some orchards were also damaged by hail. Hail causes wounds on the trunk and branches which should be protected to prevent infection by wood decay

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Proper Drainage is IMPORTANT!

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Phytophthora root rot

* If conditions are suited to the Pathogen and infection occurs!
* Improve the conditions and a healthy tree will remain healthy!

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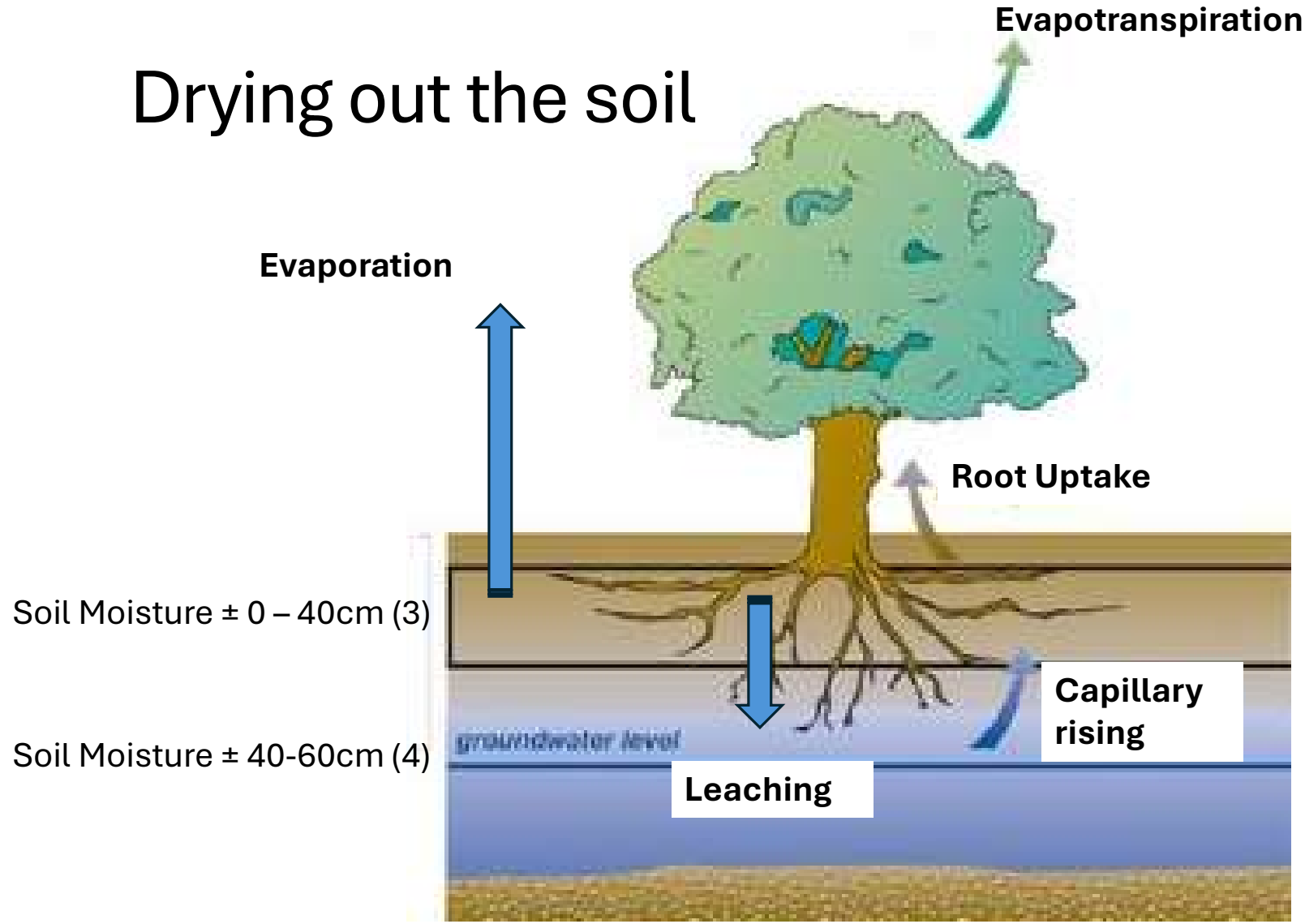
Phytophthora root rot management measures

1. Orchards that are still flooded must be drained as soon as possible to prevent conditions that promote the development of Phytophthora root rot.
2. Affected orchards should receive foliar or trunk paint applications of a phosphonate product at registered dosages as soon as possible.
3. **At least two, preferably three, applications must be done, 8 weeks apart**.
4. Foliar applications of phosphonates will also protect any early cultivars against Phytophthora brown rot on the fruit.
5. Carefully follow label recommendations for phosphonate applications.
6. Do not irrigate before soil moisture has returned to acceptable levels.
7. Avoid traffic in wet orchards to prevent soil compaction and root damage.

Drying out the soil



Soil Moisture Test (1 to 5)

Too Dry
If the soil crumbles apart when you open your fingers, it's too dry

1 - As in the picture above – Soil does not compact
2 – If the soil compacts and immediately crumbles

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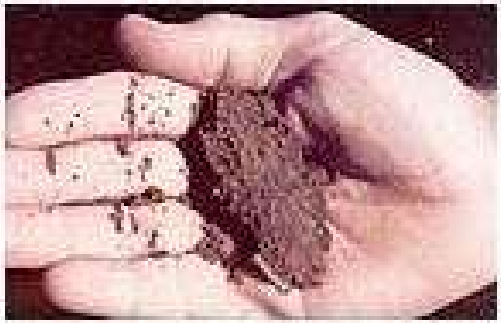
Soil Moisture Test (3 is ideal!)

Auger for Sandy soils

3		**Just Right** If the soil holds together without packing densely, it's just right. It means the soil is slightly moist, and forms a weak ball with rough surfaces, no water staining on fingers, and a few soil grains break away
4		**Too Wet** When it's too wet, it forms a ball with well-defined finger marks, light to heavy soil/water coating on fingers, ribbons between thumb and forefinger.

Auger for clay containing soils

Soil Moisture Test

5

Way Too Wet
When it's way too wet, it forms a soft ball, free water appears briefly on soil surface after squeezing or shaking, medium to heavy soil/water coating on fingers.

Phosphonate Products (Follow Label Instructions)

BRILLIANT SL

Reg. No.: L 7225 Act /Wet No. 36 of/van 1947

READ ATTACHED PACKAGED LEAFLET BEFORE USE
AND
KEEP OUT OF REACH OF CHILDREN AND ANIMALS

FRAC FUNGICIDE GROUP CODE:	33	FRAC SWAMDODERGROEP KODE:

CITRUS (Oranges & Lemons) *Phytophthora* Brown Rot of fruit:	666 mℓ **BRILLIANT SL**/100 ℓ water	Apply 2500 litre spray mixture per hectare for 4 meter tall trees and applying approximately 2,0 ℓ per tree. Apply as a light cover spray to the lower 1,5 metre canopy. Apply at intervals of 7 to14 days prior to harvest. Adjust spray volume for other tree sizes.

Poor quality in export fruit results!

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Postharvest disease management measures

1. In flooded and waterlogged orchards, low-hanging fruit pose a risk of postharvest diseases.
2. These fruit could be mechanically damaged due to debris floating in the water or mud splashing onto the fruit surfaces.
3. Damage to the fruit can lead them to drop, become rotten and provide inoculum of postharvest pathogens.
4. Fallen/muddy fruit can also be infected with various postharvest pathogens as well as insect pests.
5. It is therefore important to skirt trees and remove damaged and muddy fruit from trees and the orchard floor. Follow stringent orchard sanitation practices as per CRI guidelines (consult detailed guidelines on orchard sanitation practices under False Codling Moth, Integrated Pest and Disease Management Guidelines, Volume 3 available on www.citrusres.com). These should be done at least once a week and in severe cases more often.

Hail damage

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Treatment of hail damaged trees

1. Some orchards were also damaged by hail. Hail causes wounds on the trunk and branches which should be protected to prevent infection by wood decay pathogens.
2. Standard copper or mancozeb spray applications at registered dosages can be applied to damaged trees. These sprays will help to protect wounds on the trunks and branches. Applications should be done as full cover sprays. One spray will be sufficient.
3. In severe cases, trees are bare, with no foliage. The branches of these trees should be protected against sunburn. Apply a mixture of 5L water + 1-2L white PVC paint to the top surfaces of branches.
4. Where trees have shown severe leaf drop due to stress conditions (hail or waterlogging) branches should not be cut back if they are still flexible. Flexible shoots will reshoot in a month or two and might still be ready to bear fruit next season. Focus on removing shoots that have died.

Fruit and foliar Disease

CRI-Phytrisk
https://www.cri-phytrisk.co.za

CRI-Phytrisk: Home

CRI-PhytRisk model output powered by iLeaf data is only available for registered iLeaf users accessing **CRI-PhytRisk** from the iLeaf website. Follow the ...

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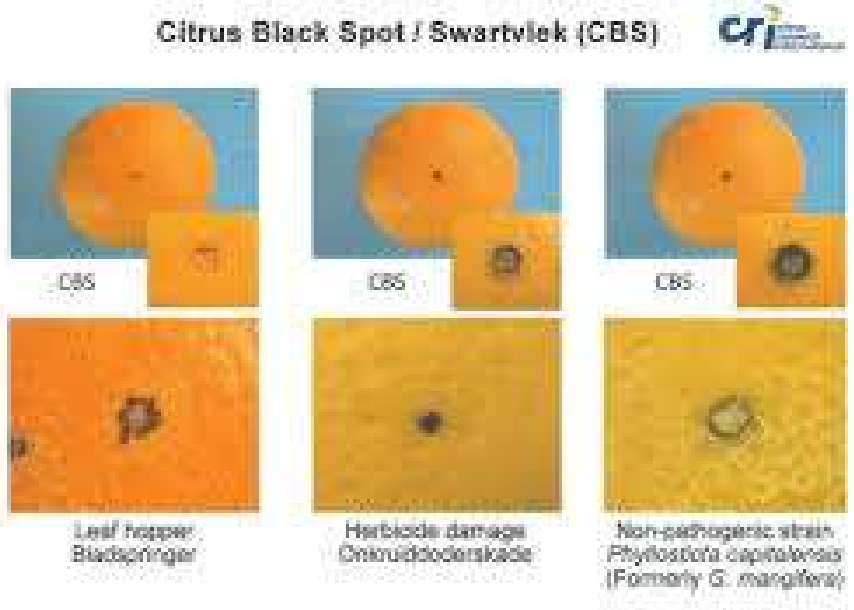
Fruit and foliar pathogen management measures

1. Management of fruit and foliar pathogens such as Citrus Black Spot (CBS) and Alternaria Brown Spot (ABS) will be impacted due to limited access to orchards.
2. **It is therefore important that an orchard-by-orchard CBS risk assessment in terms of fruit protection is done for orchards registered for export to the European Union.**
3. Review the spray programme to identify any gaps.
4. **If gaps are identified, consult CBS ascospore data (QMS, Lowveld-Agrochem or CRI PhytRisk) to determine the CBS risk involved with these gaps in the spray programme (see Cutting Edge 423, July 2025).**
5. **It is recommended to withdraw orchards with a high CBS risk from export to the EU.**
6. Increase preharvest scouting frequency for early CBS symptom detection on fruit.
7. **It is important to continue with CBS and ABS fruit protection programmes as soon as possible.**
8. **Even in cases where no fruit remain in orchards or an orchard has been withdrawn from export to the EU, CBS inoculum build-up must be prevented. At least, apply contact fungicides until the end of the recommended fruit protection period.**



Altenaria Brown spot (ABS)

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Leaf litter removal

- We rely on Fruit Protection Measures
- Innoculum control can improve control by removing the leaves and branches (spores) from the orchard

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Nutrition and irrigation (Monitoring)

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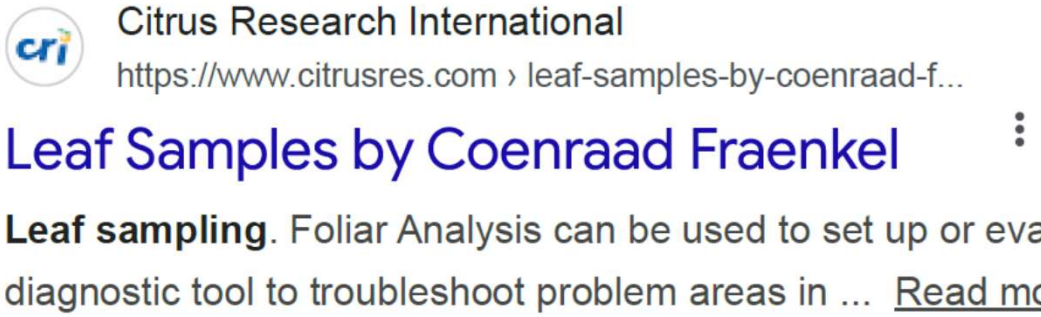
https://www.citrusres.com › profile-pits-a-guide-for-citr...

Profile Pits: A Guide for Citrus Orchard Soil and Root Health ...

In this educational video, **Coenraad Fraenkel – CRI Extension Officer for the Western and Northern Cape** – explains the importance of profile pits in citrus ...

Nutrition and irrigation measures

1. The focus for the rest of the season should be on the protection and recovery of the root system. Since the feeder roots might have died back due to the waterlogged conditions, the uptake of elements from the soil might be far less than normal.
2. Make profile pits in severely affected orchards, to inspect the root system. If it was affected, allow the soil in the root zone to dry out. Reduce irrigation to 50% of the normal application by use "C" clips to clip half of the drippers or reduce the applications to half the quantity on microjet irrigation. Once the soil moisture in the root zone is around 3 out of 5 (field observations) normal irrigation can commence but do not over-irrigate. Continue with regular field observations to verify accuracy of irrigation.
3. Conduct orchard inspections to identify trees that are severely affected. Consider stripping fruit from those trees and focus on the recovery of each tree, starting with reduced irrigation and root health.
4. It is almost time to take leaf samples (Feb – end March), so, before overreacting in terms of the amount of nutrition that should be applied, verify requirements through leaf and soil analyses.
5. Where deficiencies are evident from the analysis increase the amount of nutrition applied through foliar applications for the rest of the season. Uptake from the soil might be severely reduced. Inspect the roots before the onset of the next season.
6. In the following season a large number of flowers can be expected due to the stress experienced. This will deplete the tree reserves. It is therefore important to support the trees in the period directly after flowering to reduce fruit drop. This can be done by a combination of soil and foliar nutrition from bud swell to flowering.
7. On certain varieties where GA_3 is used to enhance fruit set, note that two or three GA_3 applications for fruit set next season might aggravate the depletion of tree reserves through the flowers. The best option might be to assess the flowering quality next season and select one strong generation of flowers rather than try to set all generations of flowers on a tree that might not yet be in optimal condition.



- Important not to over – react !
- Too much water or too much Fertiliser at the wrong time is going to do more harm!

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- For more information contact your Extension Members

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Thank You!

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