

Managing avocado orchards affected by wet weather

Inundated fields

Avocado trees are sensitive to inundation, and if flooded for about 48 hours will die from lack of oxygen to the roots.

As soon as safe to do so, inspect the orchard and mark (e.g. with coloured pegs) areas that are affected by poor drainage. If possible, take immediate steps to improve the drainage of these areas so that the water can get away, e.g. dig drains to let water get away quicker.

In the longer term decide whether you can significantly improve drainage for the affected trees (e.g. mounding, improved surface drainage, installation of subsurface drainage). If not then remove avocado trees from the area and use it for some other purpose. Building better mounds for future tree rows may help in marginal areas as long as they are orientated to allow the water to get away and not dam it up.

Phytophthora root rot

Avocados are very susceptible to Phytophthora root rot which thrives in saturated, cool soils. After several days of cool, cloudy weather the ability of avocado trees to resist the disease is even lower because they haven't been able to photosynthesize adequately to build up reserves of carbohydrate to fight against the disease and grow new feeder roots.

Phosphorous acid application

The timing of phosphorous acid applications must coincide with when root growth is taking place (phosphorous acid will go to the parts of the tree that are growing at the time of application) and this occurs in autumn after the summer leaf flush has hardened, and again in spring when the spring leaf flush has hardened.

Applications in mid-summer for example will result in most of the chemical ending up in the new summer leaf flush and not in the roots where you want it.

Research and observations have indicated that the end of autumn/start of winter is the best time to apply phosphorous acid because this is when root growth is strongest.

Phosphorous acid can be applied by injection or foliar spray but only use the foliar method if the trees have a full and healthy canopy of leaves (this is needed to permit sufficient uptake of the chemical).

In other cases use the trunk injection method, the only exception being if the trees are too young to inject in which case use enough foliar spray volume to thoroughly wet the bark as well as the leaf canopy.

Metalaxyl (e.g. Ridomil®) application

Metalaxyl directly kills Phytophthora in the soil once its spores start germinating and invading roots.

The timing of applications isn't as critical as it is for phosphorous acid so it can be applied under the tree canopy at any time, however, growers should be aware that metalaxyl is easily leached beyond the root zone by heavy rain.

This chemical is expensive so do your sums on the cost/benefit before committing yourself. It is more commonly used on young trees.

Consider treating the worst affected areas. Also bear in mind that each subsequent application is less effective as micro-organisms that degrade it build up in the soil.

Anthrachnose on the fruit

After a lengthy period of rainy weather sprays against anthracnose disease are likely to be behind schedule.

Registered strobilurins, e.g. Amistar®, have some reach-back effect and can be applied 3 times per season (the restriction in the number of applications is part of the anti-resistance protocol) so it would be a good strategy to get a spray of this fungicide on as soon as conditions allow it following an extended wet spell.

Leached nutrients

Three of the important nutrients for avocados are prone to leaching from the soil and as a result of the high rainfall are likely to be low, these are:

- nitrogen
- potassium
- boron

Growers need to adjust their fertiliser applications to make up for expected shortfalls, typically rates are raised by up to 20% above normal but be very careful with boron (especially on light sandy soils) not to overdo the rates since this element can easily reach toxic levels.

Under conditions of extended heavy rain, fertiliser rates are best split into frequent applications of small amounts, this means that the amount that can potentially be lost with each rainfall event will be lower and the levels will be topped up sooner with the next application.

More information

The on-line 'Best Practice Resource' hosted by Avocados Australia Ltd.

<http://bestpractice.avocado.org.au/>

The poster 'Manage Phytophthora root rot', available from Simon Newett, Department of Agriculture and Fisheries, and from Avocados Australia Ltd.

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For essential information on important diseases affecting fruit crops grown across Australia, pick up a copy of Diseases of fruit crops in Australia, available for purchase from CSIRO at www.publish.csiro.au

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