Managing pineapple farms during wet weather

Inundated fields

Pineapples need good drainage, so the first and most important step is to ensure the drainage is as good as it can be.

Following significant rain, inspect the farm when safe to do so and mark the areas (e.g. with coloured pegs) 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 the drainage of the affected areas (e.g. re-shape the layout of the field, improve surface drainage, and install subsurface drainage). If not then consider using the area for some other purpose e.g. it might be an ideal spot for a silt trap.

Phytophthora root rot, heart rot and green fruit rot

Pineapples are very susceptible to Phytophthora root rot which thrives in saturated, cool soils.

After several days of cool, cloudy weather the ability of pineapples 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.

Rain splash in muddy conditions is likely to increase the occurrence of Phytophthora heart rot in the warmer growing regions.

Green fruit rot usually occurs in lodged fruit in contact with or close to the soil. Losses generally follow heavy rain (spores are splashed onto lodged fruit) and can be quite severe. Initially there are no external symptoms then a water-soaked rot develops.

Reject fruit that is clearly lodged and mud splashed in the field and in addition for fresh fruit check fruit very carefully on the packing line and discard those affected.

Phosphorous acid application

Current registration is for a spray over planting material (e.g. tops, slips, suckers) 2 weeks prior to fruit being harvested, follow label rates. If the application has been effective the levels can remain sufficiently high to keep Phytophthora root rot at bay for several months. Note that, because of their smaller size and therefore lower carbohydrate reserves, crowns are more susceptible to Phytophthora root rot than slips or suckers.

Metalaxyl (e.g. Ridomil®) application

Metalaxyl directly kills Phytophthora once its spores start germinating and invading roots. It must be applied in sufficient spray volumes (or rain) to take it to the root zone in the soil where it is needed.

However, growers should be aware that Metalaxyl is easily leached past the root zone by heavy rain. Treatment can be repeated at four to eight week intervals, use the shorter interval during periods of wet weather and do not apply less than four weeks before harvest. Follow label rates.

Base (butt) rot in planting material

This disease (caused by the fungus Thielaviopsis paradoxa) thrives in warm, wet weather and enters the planting material through the broken end. Planting material should have been cured in the sun after separation from the fruit or plant. If curing is not done, and/or if separation from the fruit or plant takes place during wet weather the material should immediately be treated with the currently registered fungicide, propiconazole (e.g. Tilt®). The planting team needs to inspect the material prior to planting and discard any that are already affected.

Water blister in harvested fruit

Water blister is caused by the same fungus as butt rot and also thrives in warm, wet weather. It is a major post-harvest disease and causes a soft, watery rot of the fruit flesh. Eventually the skin, flesh and core disintegrate and the juice leaks through the shell. The fungus enters the fruit rapidly, mainly through broken fruit stalks, cracks in the shell and even bruised areas.

The chances of water blister occurring are much higher when fruit is harvested in the rain. The disease usually takes 4 or 5 days to develop so may not be an issue for processed fruit but can be a serious problem for fresh fruit.

The disease is best managed by:

- treating the fruit with a registered fungicide (Prochloraz e.g. Sportak®) as soon as possible, at least within five hours of harvest but preferably sooner in wet conditions.
- handling fruit carefully to avoid scuffs, cuts and bruising
- rejecting sunburnt and damaged fruit
- hygiene - keeping the packing shed and its equipment clean, removing rejected fruit and pineapple trash daily. Treating the shed weekly with a recommended disinfectant.

Fruit should not be packed when wet, if necessary use powerful fans to dry fruit prior to packing.

Nutrient leaching

Two important nutrients, namely nitrogen and potassium, are prone to leaching from the soil and as a result of the high rainfall are likely to be low. This will affect young plants more because they rely on nutrients from the soil whereas older plants will generally be receiving regular foliar nutrient sprays.

For younger plants that aren’t large enough to be receiving foliar nutrient sprays growers need to adjust their fertiliser applications to make up for expected shortfalls, typically rates are raised by up to 20% above normal. Frequent applications of small amounts are best because then 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.

Frequent applications of foliar nutrient sprays are the most appropriate way of feeding pineapple plants that have reached canopy closure especially given the likelihood of continued heavy rain.

Routine spray applications

Although it is more difficult to conduct field operations in wet weather it is important, using common sense and reason, given trafficability and downpours, to try and stick as closely as possible to spray schedules of nutrients and pesticides, especially metalaxyl applications for Phytophthora. Naturally given the circumstances some sprays are likely to be missed.

Weed control

Not surprisingly weeds are harder to keep under control in extended wet weather. This is not because the chemical itself is less effective but because the pre-emergent herbicides have being leached away by the rain from the surface layer where they are designed to work, or this surface layer itself has been washed away. When weather and trafficability allow herbicides need to be reapplied. Refer to chapter 13 in the 'Pineapple best practice manual' for details on these follow-up sprays.

For more details on all these items please refer to the relevant chapters in the 'Pineapple best practice manual'.

More information

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