

Managing capsicum, chilli, eggfruit and tomato crops during wet weather

Prolonged wet weather can have serious adverse affects on Solanaceae family crops including capsicum, chilli, eggfruit and tomatoes. Issues occur with:

- Harvesting
- Postharvest shelf life
- Pest and disease management
- Nutrition
- Physiological disorders

These crops grow best on well drained soils, preferably with good all weather access. In wet weather make a note of wet areas in your fields with a view to drainage and/or levelling before planting your next crop.

Harvesting

Take added care when harvesting fruit in wet conditions as the skin cells will be very turgid (swollen) with excess water and easily damaged. If possible allow the fruit to dry before picking. Wash out containers used to hold fruit to reduce skin damage which will be hard to see in the shed, but will dry and become unsightly in the market chain.

Postharvest hygiene

Recycled wash water can quickly become contaminated with breakdown organisms which are then spread to other fruit, particularly if they have been damaged during harvest.

Treating fruit with a postharvest sanitiser will reduce the risk of breakdown in the market or retail outlets. There is a range of sanitisers registered for postharvest application on vegetables, including Nylate, Hypochlor, Active 8, Adoxysan and Tsunami on Farm. Two products containing guazatine are registered on tomatoes to control several postharvest fungi

It is also important to ensure that harvesting and grading equipment, storage bins and cool rooms are kept clean and sanitised to reduce the spread of bacteria and fungal spores.

Fruit infections that occur in the shed will probably go unnoticed until they are already in the market chain where they can have a detrimental effect on the reputation of your product.

Pest and disease management

If possible apply pest and disease management strategies before expected rainfall and again as soon as possible after excessive rainfall events.

Heavy rainfall and inundation can leach chemicals applied to manage soil borne pests out of the root zone. The main soil borne problems are caused by nematodes.

Bacterial diseases and many fungal diseases are worse in wet conditions. For bacterial diseases in the field, only copper based products are registered, they are protectants and only protect the parts of the plant they are applied to, so thorough coverage is essential. Leaves and fruit of capsicums and tomatoes are readily infected by bacterial diseases and severe yellowing and leaf drop can occur in capsicums and chillies.

Crop hygiene is important to reduce or prevent disease spread. Physical contact of equipment and people can transfer diseases through a crop, particularly bacterial and fungal leaf diseases. Risk of transfer of bacteria is greater if the crop is wet. Similarly, transfer of soilborne diseases will occur in mud attached to equipment or shoes.

To reduce these risks, ensure equipment is cleaned if moving between an affected crop and other crops or properties. Removal and destruction of old crops prevents build-up of disease inoculum thus helping to protect subsequent crops.

Movement of surface water across blocks, farms or districts increases the risk of movement of soilborne diseases (e.g. Fusarium). If you know of previously affected areas on your property, be aware that any areas downstream may now also be affected.

If you are direct seeding, damp or water-soaked areas will be more prone to damping off diseases such as pythium and rhizoctonia. If possible avoid these areas or wait until they are drier.

There is a wide range of products registered to control fungal diseases in these crops. Some are protectants requiring thorough plant coverage, others are eradicants that can kill the disease.

Thorough plant coverage with eradicants will also improve their effectiveness, however their use should be limited to prevent disease resistance occurring. Alternate the chemical groups you use and check the label to see the maximum number of applications recommended per crop. A complete list of pesticides with registrations or permits is available on the APVMA website at www.apvma.gov.au

Monitor for pests and spray as required, fruit fly may become more active in humid conditions.

Nutrition

Heavy rains will rapidly leach nitrogen, potassium and some trace elements out the root zone. Waterlogged roots are not very efficient at taking up nutrients, so a foliar application is a quicker way of replacing nutrients in the plants until the root system is fully functional.

Nitrogen can be applied as urea, calcium nitrate or potassium nitrate which also applies potassium. There are several soluble products which will supply a range of major nutrients and trace elements in one spray. Whilst these products often do not apply much of any individual nutrient they are useful for 'kick starting' a waterlogged crop.

When the soil has dried out enough to require irrigation, a range of soluble products can be applied through the drip irrigation system. Split fertiliser applications to apply small amounts at a time.

Irrigation

Waterlogging can result in the death of plant roots making it difficult for the plant to recover. When the soil starts to dry out, it may be necessary to make frequent, light irrigations until the plant has re-established its root system

Physiological disorders

Wet weather can cause fruit to split or develop fine cracking in the skin. These blemishes look worse as they dry out and also allow the entry of diseases e.g. bacterial and fungal rots, and insects e.g. fruit fly and Atherigona flies.

Preparing land for new crops

It is important to plan cropping on your farm well ahead of planting. Planting seedlings or seed into soil containing high quantities of decomposing organic matter will result in heavy losses from damping-off diseases including Fusarium, Pythium, Phytophthora and Rhizoctonia. These diseases flourish in wet soil and are spread in soil, water and on contaminated equipment and plants. Land preparation should start 4 – 6 weeks before planting. Some things to consider when planning your planting schedule include:

- Plant crops that will be ready for harvest in the wetter months on higher, dryer ground, not in low areas.
- Deep rip to break hard pans and allow better drainage through the soil profile.
- Plant on well-formed hills that will help drain water away.
- If you are using plastic mulch, prepare some early blocks before the wet season.
- By marking wet areas during wet conditions you can level blocks to remove low spots.
- Ensure adequate drainage, try to prevent run-off water getting into your crop, and plant so that water flows out of the crop without leaving the ends of rows and headlands wet.
- Try to ensure all weather access to your crop, e.g. use permanent, well-formed headlands.

More information

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

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