The causes of blueberry fruit rejections

Ebony Faichney, Queensland Department of Agriculture and Fisheries

Effective disease management plays a crucial role for growers and supply chain partners in producing high-quality fruit. Blueberries are at heightened risk of disease development along the supply chain if disease conducive weather conditions are experienced at flowering, fruit set and development, or harvest.

To support the expanding north Queensland industry, staff from the Department of Agriculture and Fisheries (DAF) at Mareeba; Peter Trevorrow, Kathy Grice and Ebony Faichney, initiated a study of the prevalence of blueberry diseases on local farms and at the Brisbane markets. Diseased fruit from across Australia were returned to the Mareeba laboratory for identification.

The main disease issues found were post-harvest related, although some branch dieback and leaf spot issues were identified on-farm.

Post-harvest kits were supplied to supply chain partners at Brisbane markets for fruit to be returned to the Mareeba lab for identification

WHAT IS *BOTRYTIS*?

Spores of the *Botrytis* spp. fungus are produced during cool, wet conditions and are spread by wind and water splash. Flowers are very vulnerable to infection and the disease can result in blossom blight and abortion. Prunings can harbour *Botrytis* and are a source of disease in following seasons. It is rare for fruit to rot on the bush due to *Botrytis* infection, however post-harvest breakdown of fruit will occur along the supply chain.

Botrytis spp. (grey mould) and *Cladosporium* spp. were the most common moulds found on fruit post-harvest. These fungi were observed on fruit direct from farms and southern markets. It can be difficult to identify moulds visually and quality inspectors often misidentify them. Traceability back to the individual farm level was low, making it difficult to inform growers when their disease management strategies needed reviewing. To avoid this, some growers now use a fruit traceability system (barcoding) on every punnet.

WHAT IS *CLADOSPORIUM*?

Cladosporium spp. is a fungus present across all growing regions. It is unsightly, opportunistic and sometimes grows in association with sugary insect secretions (e.g. mealybug and scale) and dead or dying plant tissue. The spores are spread by wind. In this project, *Cladosporium* was identified on flower remnants (in-field) and berries (post-harvest), however their effect on fruit in the supply chain is still unknown.

Learning to manage disease on your farm year-round is very important. Naturally, there will always be a low level of disease present in a paddock at any given time.

Overuse of chemicals can promote resistance, so it is important to use them with care. Always follow label rates and application recommendations.

Protectant fungicides will have limited effect on reducing disease incidence if pressure is already high. Therefore, forward planning with a proactive strategy to managing disease year-round is crucial.

What can I do to protect my blueberries from post-harvest disease?

- Ensure accurate timing of fungicide application and always apply at label rates
- Plan ahead with a targeted spray program. Protectant products will have limited effect when disease is already established
- Control pests that may promote disease spread
- Regularly clean pruning equipment to prevent disease spread
- Remove pruning clippings from paddocks— these are potential sources of disease inoculum
- Minimise picking damage— small tears in skin can host infection
- Protected cropping systems provide shelter from weather conditions that may favour disease development
- Ensure good cool chain management to prevent disease development
- Always maintain good orchard biosecurity practices.
- Come clean, go clean!!

The Berry Plant Protection Guide provides good information on the cause, symptoms and management of several diseases of blueberry, raspberry and blackberry.

Download it for free from https://www.dpi.nsw.gov.au/agriculture/horticulture/berries

Queensland Government

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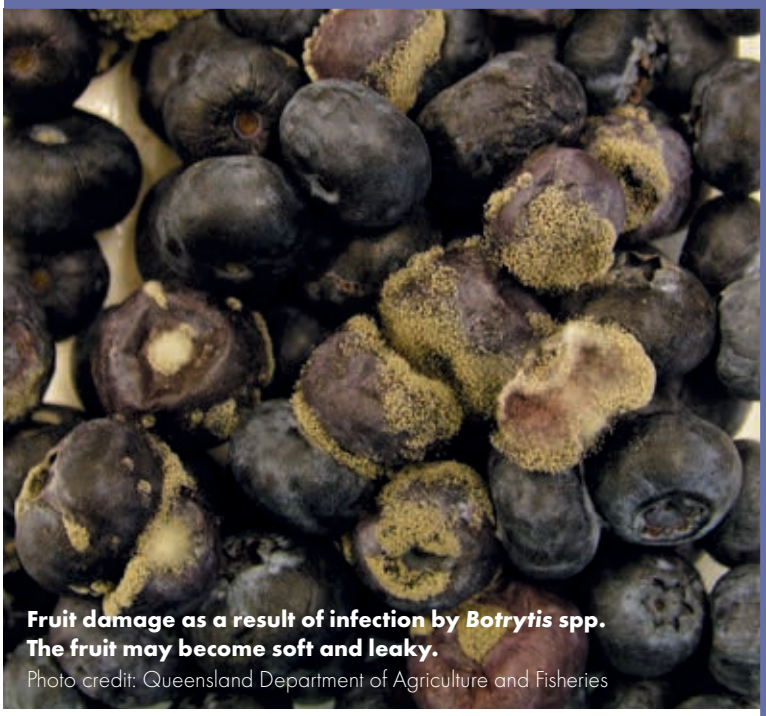

Fruit damage as a result of infection by *Botrytis* spp. The fruit may become soft and leaky.
Photo credit: Queensland Department of Agriculture and Fisheries

Blighted flowers caused by *Botrytis* cinerea
Photo credit: Queensland Department of Agriculture and Fisheries

DAF staff inspected storage facilities during their tour of Brisbane markets
Photo credit: Queensland Department of Agriculture and Fisheries