Cherry rot – what are we finding in Tasmanian and NSW orchards?

Rot of sweet cherry fruit is the major disease issue for most growers in Australia. Crop loss from rot disease can occur at any time from pre-harvest through to market. *Brown rot (Monilinia sp.)* is widely assumed to be the main cause of fruit rot. However, this study reports the dominance of the two pathogens grey mould (*Botrytis cinerea*) and *Alternaria* spp. as the causal agents of sweet cherry rot in these regions. Disease incidence was generally very low and being well managed.

Assessment of cherry rot at harvest

We assessed rot incidence in commercial orchards over the past 2 seasons. In all cases, usual management practice (including fungicides) applied to the rows surveyed.

Tasmania – mainly *Botrytis cinerea* (grey mould) detected

Site	Year	Variety	% Cracking	% Rot	Causal pathogens	
Sth Tas 1	2013-14	Sweetheart	4.8	0.04	B. cinerea	100%
Sth Tas 2		Simone	2.2	0.02	B. cinerea	100%
		Lapins	2.7	0.1	B. cinerea	72%
Sth Tas 3	2014-15	Lapins	9.1	1.2	B. cinerea	55%
Sth Tas 4		Lapins	8.2	0.8	B. cinerea	74%

NSW – mainly *Alternaria alternata* detected

Site	Year	Variety	% cracking	% rot	Causal pathogens	
Orange 1	2013-14	Vans	1.2	0.2	A. alternata	66%
		Sweetheart	1.1	0	-	
Orange 2		Lapins	0.2	0	-	
		Sweetheart	1.4	0	-	
Young 1		Lapins	0	0	-	
		Vans	0	0	-	
Young 2		Lapins	0	0.2	A. alternata	17%
		Sweetheart	0	3.0	A. alternata	60%
Orange 1	2014-15	Van	5.5	0.4	A. alternata	56%
		Sweetheart	11.2	0.1	A. alternata	100%
Orange 2		Lapins	14.4	0.5	A. alternata	100%
		Sweetheart	4.0	0.1	A. alternata	50%
Young 1		Lapins	1.8	0.07	A. alternata	72%
		Vans	NA	0.1	A. alternata	97%
Young 2		Lapins	0.3	0.7	A. alternata	72%
		Sweetheart	0.6	6.1	A. alternata	70%

Left: typical symptoms of fruit infected with *Botrytis*

Right: typical symptoms of fruit infected with *Alternaria*

TIA is a joint venture between the University of Tasmania and the Tasmanian Government

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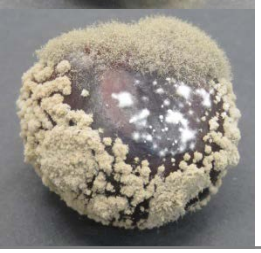
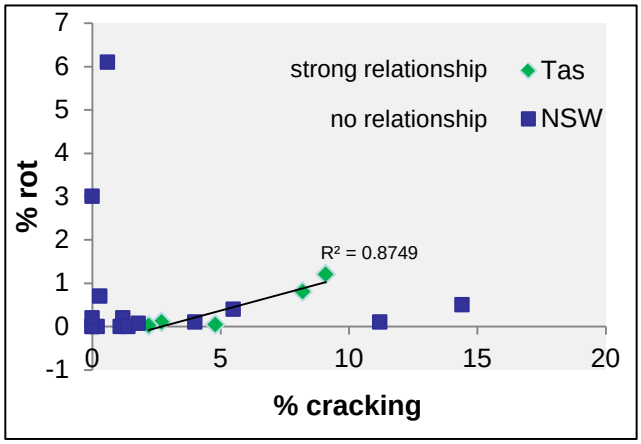


Is there a relationship between rot and cracking?

We found a strong relationship between rot and cracking incidence at harvest for the Tasmanian orchards surveyed, but not the NSW orchards.

This could be because *Botrytis cinerea* is a successful wound pathogen, so can easily infect cracked fruit.

Most rot pathogens infect either at the flowering stage or as fruit develop, so management needs to occur throughout the season. Infection usually results in "latent" infection which does not show as rot until the fruit mature.

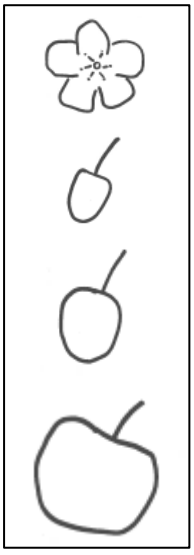


What else is the project doing to help growers?

Identification guide
A photo guide to help you quickly and accurately identify causal pathogens is being developed.

Tools to help predict the amount of rot
A tool to help predict the amount of rot likely at harvest time is being developed and tested. By incubating otherwise healthy looking flowers and fruit at various stages of development we can assess latent infection. We are developing a video and guide to a protocol growers can use to work out how much latent infection is present in samples from their own orchards.

Tools to help growers estimate infection risk during the season
We are examining how weather conditions influence infection risk for the key rot pathogens. If the results show clear relationships, we can develop a preliminary model to test in the future.



When does the most infection occur?

At what point can we predict harvest rot levels?

Take home messages

- The dominant pathogen detected in Tasmanian orchards was *Botrytis cinerea,* (grey mould) with incidence closely related to cracking
- The dominant pathogen in NSW was *Alternaria alternata*
- *Monilinia spp.* (brown rot) was rarely detected – maybe they are present but being well managed (do not assume you can stop managing for them!)
- Rot levels in orchards surveyed were reasonably low in past 2 seasons

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Horticulture Innovation Australia