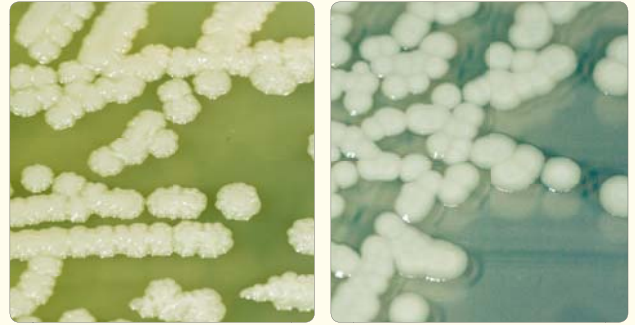


BACTERIAL STORAGE ROTS IN ONIONS CAUSED BY *BURKHOLDERIA GLADIOLI* PV. *ALLIICOLA*

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Background

- A range of bacteria have been reported to cause storage rots in onions.
- In the UK the most common cause seems to be *Burkholderia gladioli* pv. *alliicola* (*Bga* formerly called *Pseudomonas gladioli* pv. *alliicola*).
- First reported from the USA in the 1940s, for many years this bacterium was considered to non-indigenous and only found in imported bulbs.
- In the 1980s it began to be found with increasing frequency.
- Levels of affected bulbs of up to 40% of bulbs have been recorded.



Most isolates of *Bga* from the UK produce wrinkled colonies on agar (left), in contrast to the smooth colonies of the type strain from the USA (right).

Sets more at risk ?

- Crops grown from sets may be more at risk:

Bacterial rots in stored onions in 1992 (from Davies *et al.* 1996)

	% Samples	% Bulbs affected	% Samples with <i>Bga</i>
Sets (9)	56	1-13	44
Drilled (9)	67	1-2	0
Modules (4)	75	2-5	0

- Greatest risk may be in heat-treated sets:

Bacterial rots in stored onions grown from sets at two sites in 2012 (from Roberts & Clarkson 2013, HDC FV 392)

	% Site 1	% Site 2
Heat-treated (10)	22-35	3-14
Not heat-treated (2)	8-9	1-14

Symptoms can be variable

- Traditionally the disease caused by *Bga* is called 'slippery skin' but symptoms can vary: from rots of individual scales to a mushy rot of the whole bulb.



Sometimes the rot only affects individual scales.



Mushy rot of the entire bulb developing downwards from the neck

Laboratory testing

- Visual appearance of sets is a poor indicator of their health status.
- Laboratory testing has shown that the pathogen can be present in sets at the time of planting.



Bulk extracts are prepared.



Extracts are diluted and plated on selective agar media.



Testing pathogenicity on onion discs. Yellowish-brown discs have been inoculated with *Bga*.

- The most effective means of control is likely to be to plant pathogen-free sets, although more information is needed to set health standards for an effective testing program.

