A New Threat to Potato – “Dickeya solani”

A new bacterial pathogen, “Dickeya solani”, has emerged as a major threat to potato production in Europe and Israel. This leaflet provides an update on recent developments, including new statutory measures to tackle this threat, and warns potato growers, packers and processors to take precautions and be vigilant.

This new pathogen causes blackleg-like symptoms, leaf wilts and tuber soft rots. It has yet to be formally named but the name “Dickeya solani” has been proposed. It is a close relative of Dickeya dianthicola, previously known as Erwinia chrysanthemi, which has caused problems sporadically in potato crops across Europe since the 1970s and in England and Wales since 1990. In recent years the new, more aggressive species has established itself in a number of European countries (Belgium, Finland, France, Poland, the Netherlands and Spain) and Israel. It was first confirmed on a potato crop in England and Wales in 2007 and found in 2009 in two Scottish ware crops, grown from non-Scottish seed. As yet “Dickeya solani” has never been found on Scottish seed potatoes nor potatoes grown in Scotland from Scottish-origin seed.

It is evident from the experience of other European countries that the new species is more aggressive than other Dickeya species and Pectobacterium atrosepticum, previously Erwinia carotovora subsp. atroseptica, the usual cause of potato blackleg in Northern Europe. Observations from other European countries indicate that, once established, “Dickeya solani” will rapidly displace other species and take over as the principal cause of wilting and blackleg-like symptoms in potato crops. Production losses in Dutch seed potatoes reached €25M in 2007 due to downgrading and rejection of over 20% of stocks during certification, almost entirely due to this new pathogen.
Symptoms caused by “Dickeya solani” on the growing plant closely resemble blackleg in many cases. Wilting can be rapid with black soft rotting extending internally up the vascular system of the stem from the infected seed tuber.

Symptoms may vary depending on variety and in some, wilting can occur with no obvious sign of blackleg. High incidences of wilting (as much as 20%) have been observed in England as a result of planting Dickeya-infected seed in the warm early season conditions of 2007 and 2009.

“Dickeya solani” is adapted to warmer temperatures but can cause disease under Scottish conditions. Since it appears to be more aggressive at higher temperatures there are implications for seed exports from Scotland to warmer countries.

What to look for
Control measures

It is clear that "Dickeya solani" poses a significant threat to Scottish potatoes, both seed and ware. A recent Scottish Government consultation showed strong support from the industry for measures to tackle this new pathogen in order to maintain Scotland’s high health status. A **zero tolerance for all Dickeya species** is therefore being introduced in the Scottish Seed Potato Classification Scheme (SPCS), from 2010 onwards. Strengthened plant health measures will also enable inspectors to take action to protect both seed and ware crops from Dickeya infection.

RPID inspectors will take stem samples from plants exhibiting blackleg symptoms during growing crop inspections, which will be sent to SASA to determine whether they are infected with Dickeya species. Crops found to be infected with Dickeya will not be allowed to be used as seed. They may only be sold as ware for immediate consumption or processing, and conditions will be imposed to prevent any contamination of other crops. Non-Scottish seed potatoes entering Scotland will also be tested for Dickeya, as well as tubers selected for the annual survey for brown rot and ring rot.

**Continued vigilance from the Scottish potato industry is also required, in addition to these official measures, to maintain Scotland’s high plant health status.** The Scottish Government would encourage all involved in the industry to comply with the statutory plant health controls and good practice set out below, to protect their own business and prevent this new pathogen taking hold in Scotland. If you require any clarification or further information please contact your local RPID Area Office.

- Consider where you source your seed and potatoes from;
- Notify the Scottish Government of any non-Scottish seed potatoes you bring into Scotland, for planting, packing or retail (as required by the Plant Health (Scotland) Order 2005, amended in 2008). Depending on risk, these will normally be sampled and tested for Dickeya species as well as brown rot and ring rot;
- Apply strict separation of seed and ware potatoes (as required by Regulation 6 of the Seed Potato (Scotland) Regulations 2000);
- Take care with the disposal of soil and waste, especially if you handle foreign ware;
- Be vigilant for symptoms in the crop and arrange a diagnostic test if you suspect Dickeya;
- Contact your local RPID Area Office if you have a suspected or confirmed case.