



Common scab

Investment: £500K over 8 years. Return: £2.2M p.a.

Challenge

A main driver for irrigation of potatoes is the need to meet quality standards for common scab, particularly for the pre-packed market. Even minor scab lesions can drastically reduce the value of crops. Despite significant research into control of common scab, surveys conducted by MAFF between 1993-98 showed this disease to affect an average of 87% of potato crops assessed. (Tompkins and Clayton, 2003)

Cost to Industry

Improved scab control practices will assist growers in reaching contracted quality targets. According to the BPC Research and Development Strategy document published in January 1999, considerable wastage due to common scab is estimated at around 120 000 t (around 2% of the total crop), costing around £6M per annum, with a potential saving of £3M per annum. Inadequate soil wetting following irrigation causes the majority of these losses.

The cost of tuber greening to the industry was calculated to be £9M. Reducing the loss from 3% to 1% of the total crop would result in a saving of £6M. A significant proportion of these losses to greening are caused by erosion of ridges by irrigation during periods when soil exposure is high during scab control.

Potato Council Response

PCL commissioned research including the integration of precision irrigation and non-water based measures to suppress common scab of potato at a cost of £480K¹ over 3 years and also published a guide 'Managing the Risk of Common Scab' (£6 000) to promote efficient use of irrigation and reduce losses. The guide is promoted at all 6 Regional technical days, workshops, via electronic mail outs (Grower gateway and tubertalk) and on the PCL website.

The guide shows that an estimated 20 mm of irrigation could be saved by more effective scheduling during the season, 14 mm of which could be saved by more carefully targeted application of water during the common scab control period. E.g. Samples that are grown for packing but fail to make quality standards set by packers reduce income dramatically but costs are still incurred



in growing the crops. Saving 14 mm of irrigation (one application) = £74/ha/25 mm x (14/25)^{0.5} (ratio of costs for amounts <25 mm) x 39 700 ha = £2.2M saving*.

Results from the study have promoted efficient production of high quality potatoes with reduced wastage and reduced demand for water use: 126 000 ha x 50 % area irrigated x 14 mm saving = 8.8M m³. Non-water based methods for control of common scab also allow for a reduction in water abstraction and lead to less leaching of nutrients (nitrates, phosphates etc) into watercourses.

A key environmental objective identified in the BPC R&D strategy was to increase efficiency of environmentally sustainable production of ware and seed tubers by optimising their irrigation and identifying alternatives for scab control. Results from this research showed that efficient production of high quality potatoes with reduced wastage and reduced demand for water use was achievable.

¹ research investment

2004	literature review	£28 000
2006-2009	common scab control	£135 000
2009-2010	irrigation and suppressive soils	£33 000
2011-2014	common scab control (ii)	£267 700

Chris Steele
KT Executive

* Integration of precision irrigation and non-water based measures to suppress common scab of potato 2009