

**Title** Keeping the Scottish potato industry free from *Clavibacter michiganensis* subsp. *sepedonicus* (potato ring rot)

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### Abstract

*Clavibacter michiganensis* subsp. *sepedonicus* (Cms) is a major concern of seed potato producing countries. A multi-disciplinary approach is underway to evaluate risks from Cms to the Scottish potato industry, encompassing: Cms epidemiology under Scottish conditions, detection and current control measures and stakeholder involvement. Glasshouse trials were conducted to assess the top 10 Scottish seed cultivars' susceptibility to Cms. In 2006, 30-day-old plants were stem-inoculated with Cms cells. Foliar symptoms were unclear except in two cultivars; however, realtime PCR confirmed that all cultivars were infected, highlighting the difficulty in providing agronomists with definitive cultivar-specific symptoms and the necessity for post-harvest tuber testing. Effect of infection level on disease progression was studied in 2007 using daughter tubers confirmed to be disease-free or latently infected. Foliar symptoms expressed by the 10 cultivars, grown from infected daughter tubers, were categorised: symptomless (2), symptomatic (6) or symptoms masked (2). Improvement in Cms detection is also underway by development of a new monoclonal antibody. Additionally, weak points that may currently exist in current trading and agronomic practices have been assessed via a postal survey of 548 Scottish potato growers. Respondents (46%) were categorised into three business types: seed-only, seed and ware or ware-only. Results from the survey confirmed potential risks from: source of seed, inadequate on-farm hygiene and potential contact of seed and ware potatoes during storage and grading. Putting existing knowledge and experience in context coupled with finding practical solutions for the industry is essential if Scotland is to remain free of this disease.