

Fifteen years' experience with soil diagnostic testing for *Spongospora subterranea* in Scotland, and its contribution to reducing powdery scab in potato crops

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The Scottish Agricultural College developed a soil test for *Spongospora subterranea* (Ss), as described by Brierley *et al.* (2008)^a, and launched in 2009/10. A history of high incidence of powdery scab in potato crops indicated that seed and ware potato growers would both use the test, but seed potato producers have been the prime users mainly to assess Ss soil infestations on rented land. The test uses a single soil sample per field, made up of 100 10 g core samples from a representative 4 ha block in the assessed field. The test results categorise risk of powdery scab as 'low' (Ss undetected), 'medium' (trace to 9.9 sporosori g⁻¹ soil), or 'high' (≥ 10 sporosori g⁻¹). There have been more fields in the low risk category and fewer fields with high risk than was expected. Feedback on the test indicates that growers find the results are meaningful, and reflect subsequent levels of powdery scab in a field. Many growers submit samples annually. Powdery scab has declined as a problem in potato production in Scotland since the test was introduced, which could be due to climate change (consistent warm and dry spring conditions), and use of potato cultivars with reduced powdery scab susceptibility. However, the soil test has provided increased confidence to grow susceptible varieties in low risk fields, and decision support for necessity for fluazinam soil incorporation. Availability of off-label fluazinam soil treatments has probably been the most important factor in the reduction of powdery scab over the last 15 years. Whether this pesticide will continue to be approved for use in the United Kingdom is uncertain.

^a. Brierley, J. *et al.* (June 2008). Improving decision making for the management of potato diseases using realtime diagnostics. Potato Council Project Report 2008/6