Evaluation of Sárpo potato varieties, 2004

Potato blight *Phytophora infestans* is a major limiting factor on potato production and is a particular problem for organic growers in Wales. The use of blight resistant varieties is an important strategy in the management of late blight. Hungarian Sárpo varieties appear to have greater late-blight resistance than any currently available to Welsh growers. In 2004, ADAS Pwllpeiran undertook field trials of 19 Sárpo varieties provided by the Sárvári Research Trust.

Objectives

- To examine the level of resistance to *Phytophthora infestans* in Sárpo potato cultivars
- To compare the level of resistance to *Phytophthora infestans* with commercially available cultivars in a high risk blight area
- To undertake potato variety trials, including assessment of yield, on an established certified organic holding
- To examine the vigour and growth of Sárpo cultivars under organic husbandry

Potato blight trials 2004 - key dates

Planting date	18th May 2004
Hand weeding	18th June 2004
Blight introduced	6th July 2004
Blight observed on site	14th July 2004
Haulm cut to ground level	16th September 2004
Harvesting date	2nd December 2004

Trial design

- Cultivars were arranged in a fully randomised complete block design with two replicates
- Plots two rows wide (1.5 m) and measuring 3.3 m in length

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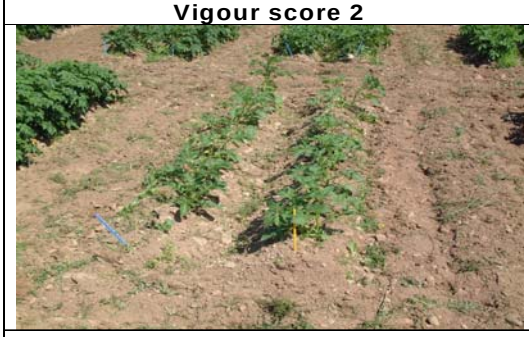
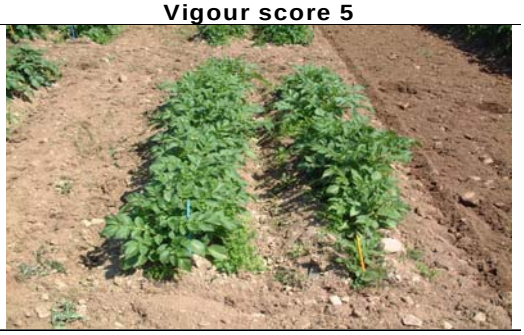
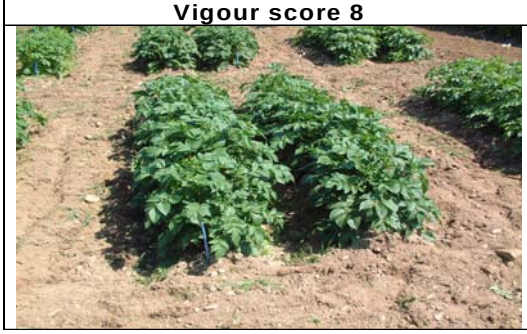
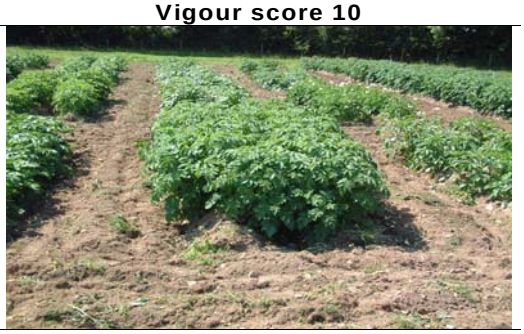
Assessment of canopy vigour

- Vigour was scored by assessing canopy cover over the whole plot, viewed from the centre of each plot

Vigour score 2	Vigour score 5
	
Vigour score 8	**Vigour score 10**
	

Foliar blight assessment

- Foliage blight was assessed regularly as a percentage of leaf area destroyed by blight
- Full Smith Periods and Near Misses were recorded for the site from Blight Watch

Statistical Analysis

- Foliar blight progress for each cultivar was represented by a sigmoidal disease progress curve & intensity of infection was measured by calculating the **A**rea **U**nder the **D**isease **P**rogress **C**urve (AUDPC) using numerical integration

Yield assessment

- Plots were harvested manually & yields were assessed for each plot
- All tubers >35 mm were included in the yield totals excluding rotted tubers

Conclusions

- Each Sárpo cultivar showed high blight resistance
- Blight resistance in Sárpo cultivars was greater than in commercially available cultivars in the trial
- There was a considerable range in yield between cultivars
- Yield differences for commercial cultivars was associated with susceptibility to foliar blight
- Yield differences in Sárpo cultivars was associated with vigour/weed competition rather than susceptibility to foliar blight

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