

BRANSTON



An effective and sustainable biocontrol solution
for the control of potato cyst nematode

ABIM Meeting Lucerne 2011

Presentation outline

Introduction to Branston Ltd



The PCN problem



A sustainable alternative



Results



Conclusions

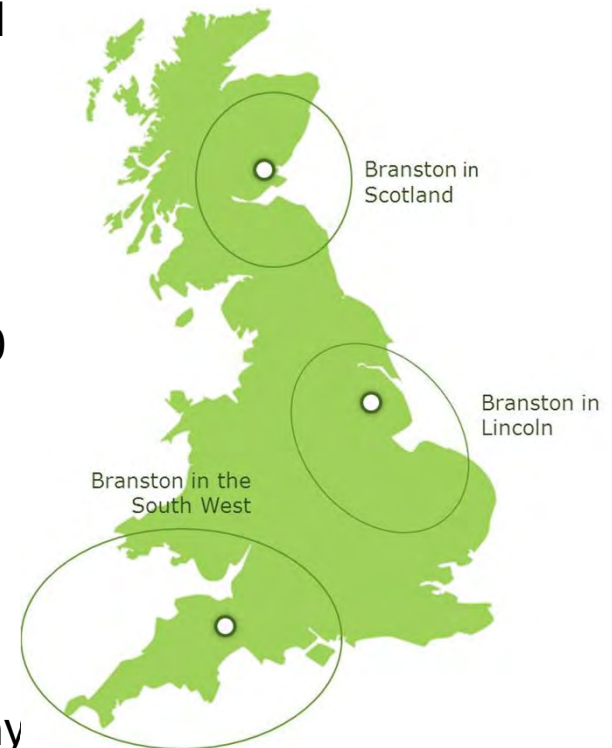


Contact

History of Branston Ltd

- 1968** A group of potato growers
- 1986** The first pre-packed potatoes were produced
- 1990** Started trading with Tesco
- 1997-2004** Business acquisitions
- 2009** Opened the Prepared foods factory

- We work with 255 growers, who grow 6,800 hectares
- We purchase 350,000 tonnes of potatoes a year
- We develop exclusive varieties
- We are an environmentally-friendly company and have won numerous awards for our work



The PCN problem

Nematodes comprise a large problem to potato growers (UK: £50m loss /year or 10,000 Ha, £380m in the EU and over £1.2b worldwide). Once hatched, they locate the plant root and graze around the clock in high numbers, resulting in plant impoverishment which dramatically reduces yield and quality.

Existing solutions: synthetic nematicides, biofumigants, solar heating, resistant varieties and robust crop rotations

Issues

- negative environmental impact
- low efficacy
- high-cost
- geographically specific
- strengthening PCN through survival of the fittest

A sustainable alternative

Foil-sis[®]

The specially bred crop acts as a completely risk free trap crop for PCN by triggering hatch in the soil but preventing completion of the pests' lifecycle, however long the crop is left in the ground.



A sustainable alternative

- Is non-tuber forming
- Is effective against both species of PCN
- Is fully resistance to PCN
- Is blight resistant
- Can be used at field-scale or patch applied for targeting PCN hotspots
- Can be topped for promotion of a second flush of growth and improved weed control
- Can also produce 10-12 t/ha DM of green manure
- Only requires 8-12 weeks of growth to be cost effective (but can be left for longer)
- Is most effective in mineral soils
- Can be applied with either a standard cereal or a precision drill

Foil-sis[®]



Agronomy of Foilsis

Foil-sis[®]

Seed bed

Moderate to deep tilth to encourage root growth.

A fine, moist seed bed is necessary for maximum germination.

Sowing

Drill at a depth of 1 cm and roll. Maintain soil moisture in early crop stages. Ideal soil temperature above 10°C. Foil-sis may take 12 -14 days to germinate and emerge. Target plant population is 30/m² (3-4kg/ha).

Nutrition

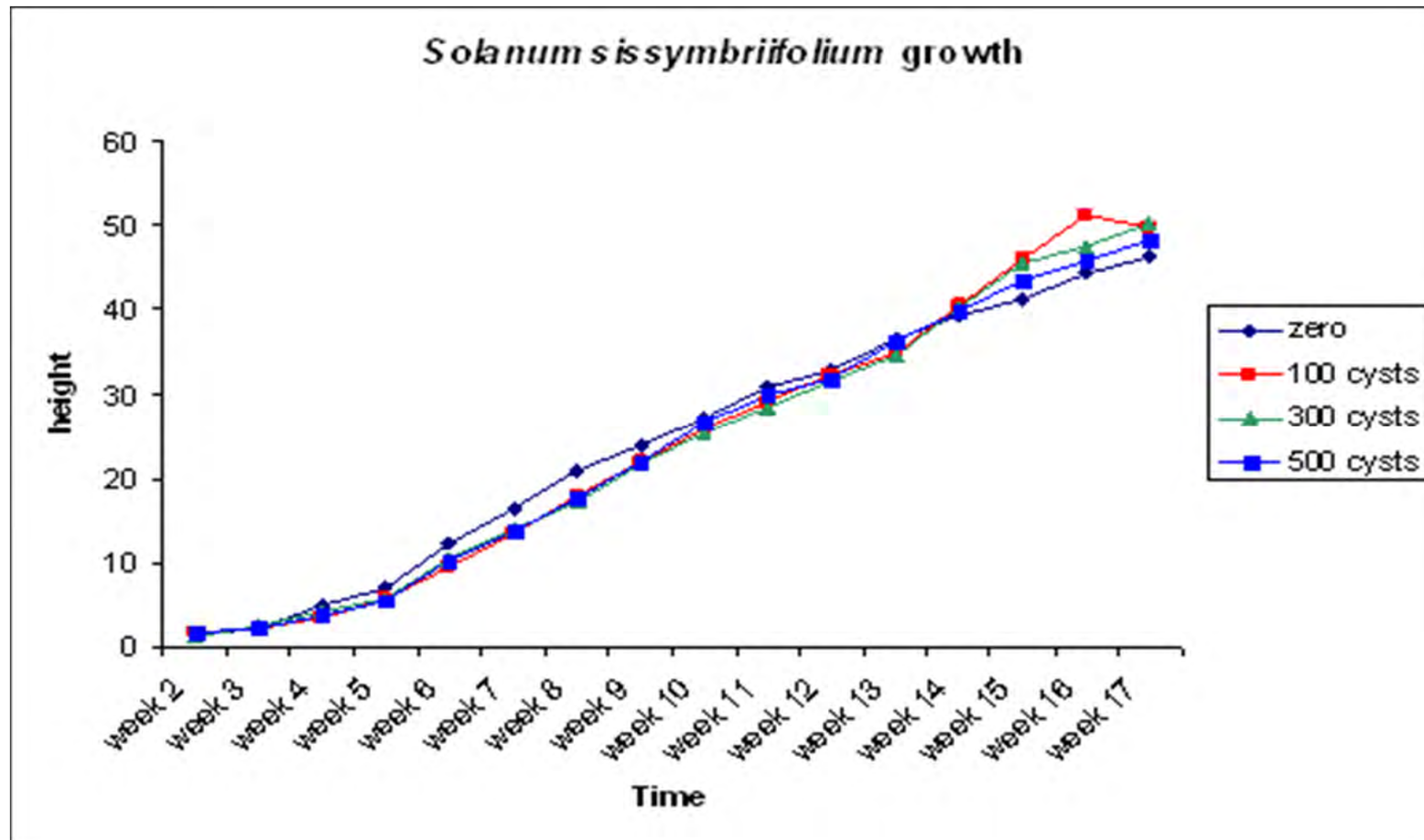
Foil-sis requires at least 50kg of readily accessible nitrogen to boost early growth.

Weed control

Foil-sis is slow to develop and is not competitive in its early growth (6-8 weeks). Once established it is very competitive and in the right conditions it achieves over two metres in height after 14-16 weeks.



Results from field testing

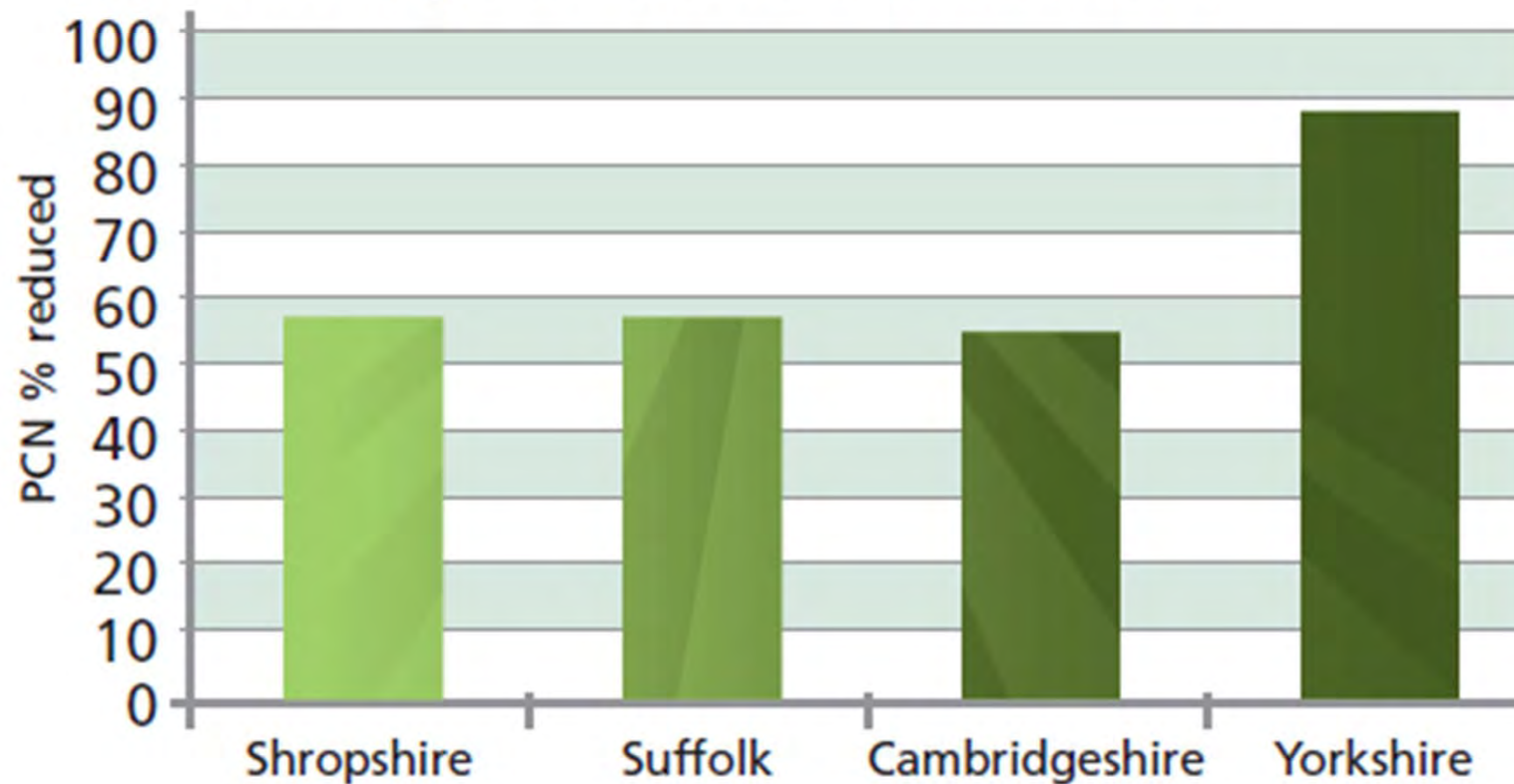


Height of *S. sisymbriifolium* plants grown under different densities of *Globodera pallida*

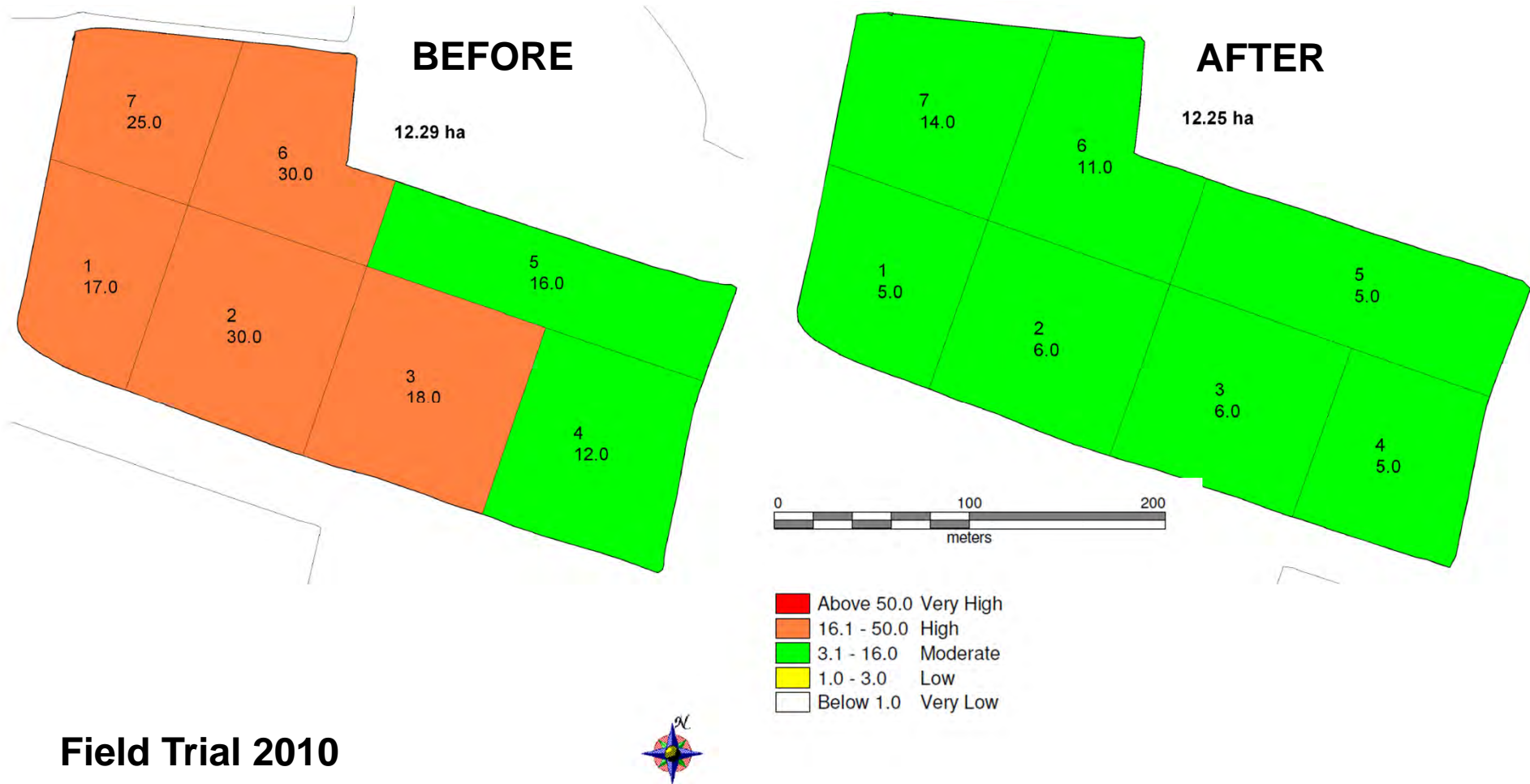
Results from field testing

Solanum sisymbriifolium sites 2005

Percentage reduction of variable PCN



Results from field testing



Field Trial 2010

Conclusion

- Legislation pressure to reduce agrochemical inputs
- Available land for cultivating potatoes
- Foil-sis is a valid sustainable alternative to nematicides
- It has been used successfully for reducing PCN population
- It is important to understand the agronomy for achieving the maximum potential
- Not always the best option in a crop rotation

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