RELU: Biological alternatives to chemical pesticides in the food chain

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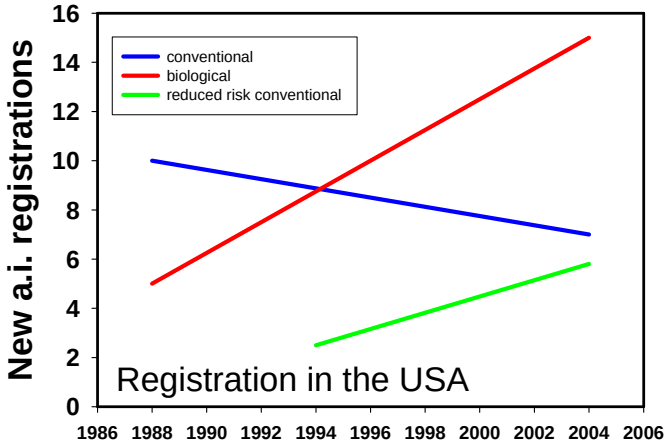
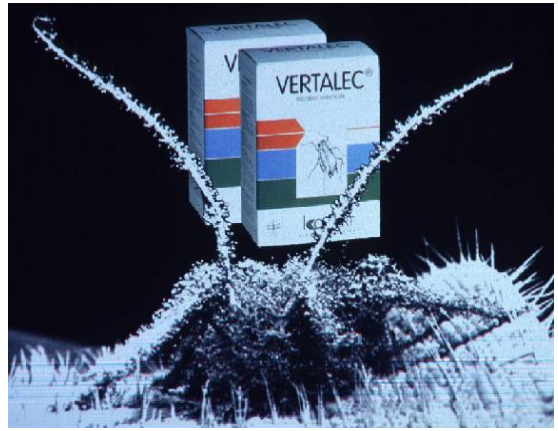
Biopesticides: regulatory sustainability. Why aren't products reaching the market in the UK?

Main aims:

- Assess limitations of chemical pesticide regulatory system for biopesticides.
- Identify processes that may sustain regulatory innovation.
- Compare public policies on pesticide reduction.

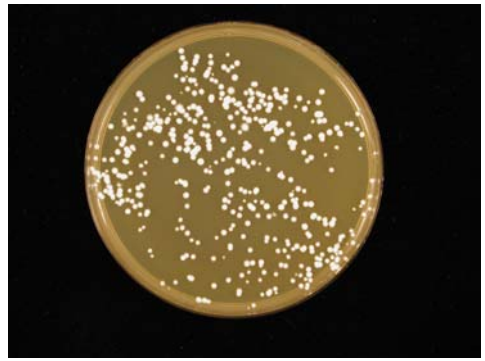




Biopesticides: environmental sustainability. Improving knowledge of the ecology of fungal biopesticides.

Main aims:

- Understand the effect of habitat type (e.g, woodland v. arable) on biodiversity of natural populations of insect pathogenic fungi.
- Fungal life history: how do insect pathogenic fungi survive in soils?
- Impact of spraying on indigenous fungal populations



Chemical pesticides

- Consumer and retailer resistance – although no real evidence of significant impacts on human and animal health in the food chain
- Shift from politics of production to collective consumption
- Concerns may deter fruit and vegetable consumption

Problems for growers

- New chemistry expensive to develop
- As existing products are withdrawn, resistance problems increase
- Consumer could face higher prices and/or lower quality

Biopesticides

- Micro-organisms that kill insects and mites
- Naturally widespread, little or no toxic residue, safe to wildlife (but possible impact on beneficials)
- Highly specific, so niche market

Lack of success

- Have been around commercially for 20+ years but very small share of market
- One explanation is market failure hypothesis (Imperial at Wye based project)
- Regulatory failure hypothesis – not an attack on regulators, but systemic problems of regulation/regulatory state

Benefits for the rural economy

- Biopesticides are usually produced by SMEs
- Plants and research facilities are not large
- One of biggest in UK is around 70, more typical size might be 15
- But high quality jobs with local multiplier effects

Benefits for growers/farmers

- Survey evidence shows strong public demand for food that is free of pesticide residues
- Retailers are imposing requirements in terms of not using existing pesticides that go beyond what regulators require
- Number of chemical actives likely to reduce because of EU legislation

Niche markets for local products

- Public willingness to buy local food with identified producer – although many decisions still based on price
- Public interest in reducing food miles – although this is a more complex subject than is generally allowed, but perceptions are important

Some challenges (1)

- Public have a very positive perception of organic products
- There is very little public understanding of Integrated Crop Management/Integrated Pest Management and its environmental benefits

Some challenges (2)

- ‘If you talk to an audience about ICM, will switch off immediately’ – quality assurance manager, major retail chain
- ‘Have to look at different language on biopesticides. The consumers, as soon as you say pesticides, all are as bad as DDT’ - retailer

Some challenges (3)

- Issues about efficacy. Grower may need to use more products and results not as good as with tried and tested chemical products
- Most extensively used in controlled glasshouse environments, need to develop in broad acre crops

Some positives

- UK regulatory regime seen as more flexible and efficient than elsewhere in Europe
- Pesticides Safety Directorate has just launched new Biopesticides Scheme
- Creates a window of opportunity

A vision for the West Midlands

- Regional facilities developing and producing biopesticides
- Growers making more extensive use of them
- Promoting regional foods that are produced in this environmentally friendly way

Visit our website

- http://www2.warwick.ac.uk/fac/soc/pais/biopesticides/
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