Improving the economic viability of organic apple production

Organic production systems for UK conditions are needed if UK growers are to capture a bigger slice of the increasing home market for organic apples

The challenge

Whilst overall consumption of apples in the UK has remained static, there has been a strong demand for organic apples over recent years. This demand is expected to continue to rise, yet over 90% of current supplies are imported.

The lack of UK producers reflects the difficulty of growing apples organically in the UK. Under our climatic conditions a wide range of pests and diseases cause huge losses in yield, quality and appearance. The problem is made worse by the fact that many of the varieties popular in the UK show little resistance to these pest and disease attacks.

The absence of satisfactory organic controls and protocols means organic apple production in the UK in the medium and long-term is usually uneconomic. The development of organic systems would enable UK growers to compete more effectively with imports and supply a far greater share of this increasing market.

Research aims

To develop organic systems that will enable the problems of pests and diseases in organic apple production in the UK to be overcome. The target is that fruit quality, in terms of appearance and eating characteristics, should be at least equal to conventionally produced apples. Coupled with this, the systems developed must be both sustainable and environmentally sensitive.

Research methods

Using the expertise of the research partners in the project, HRI East Malling and the Henry Doubleday Research Association, a prototype Integrated Pest and Disease Management (IPDM) programme for organic apple production in the UK will be developed. The programme will be evaluated in two large-scale field experiments on growers' holdings, one an established orchard converted to organic production, the other a newly established orchard where varieties and planting pattern can be selected specifically for organic production.

Key components of the IPDM programme will be

Capped blossoms caused by apple blossom weevil

"The development of an Integrated Pest and Disease Management programme will transform the prospects for UK organic apple production"

Adrian Barlow
consultant

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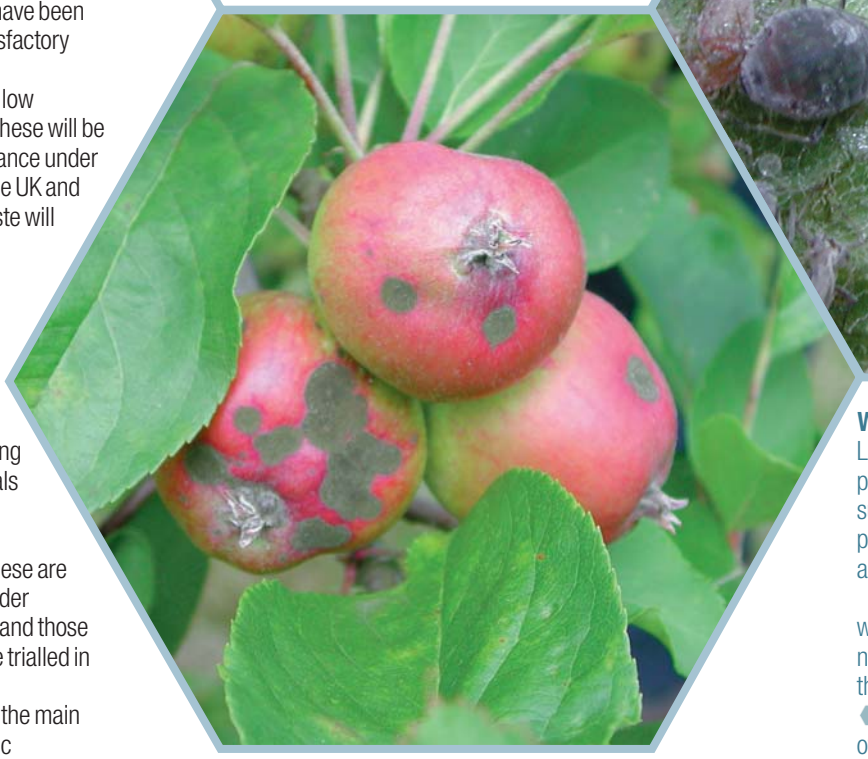
the identification of varieties with low susceptibility to diseases and the development of new and organically acceptable pest and disease control methods.

More than 100 apple varieties from around the world have been identified that have satisfactory eating and processing characteristics but with low disease susceptibility. These will be tested for their performance under organic production in the UK and their fruit quality and taste will be assessed by the fruit technologists from supermarket and marketing organisation partners in the project.

For scab and mildew control, a worldwide search is being done for control materials not currently used or registered for organic production in the UK. These are being tested, initially under glasshouse conditions, and those showing promise will be trialled in field experiments.

For rosy apple aphid, the main aphid problem in organic production, a range of organically acceptable foliar spray treatments are being investigated including biocontrol agents and some new botanical insecticides supplied by the Royal Botanical Gardens, Kew.



Rosy apple aphid (right) and apple scab are major pest and disease problems to be tackled in an integrated programme of control

Benefits to the industry

Greatly improved knowledge of the treatments, materials and most suitable varieties for organic production will transform the prospects for organic apple production in the UK, enabling UK growers to supply an increasing proportion of the home market. Conventional apple growers will also benefit from the methods that will enable them to reduce their dependence on broad spectrum pesticides.

"The exploitability of a number of natural enemies of important apple pests has received scant attention until now"

Jerry Cross
HRI East Malling

What is HortLink?

LINK is the UK Government's principal mechanism for supporting collaborative research partnership between UK industry and the research base.

The HortLink programme was launched in 1996 and has now been extended. The aims of the extended programme are:

- To improve the sustainability of the horticultural industry.
- To improve knowledge and understanding of processes and factors which determine the performance of the horticultural industry.
- To enable access by the horticultural industry to innovative ideas and technology by involving a wide range of research institutes and university departments.
- To promote wider awareness of the benefits of advanced horticultural techniques/ methods, especially to SMEs.

Further information from the programme co-ordinator.
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LINK
COLLABORATIVE RESEARCH

Project details
Varieties and integrated pest and disease management for organic apple productions

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