

## Controlling the cabbage whitefly in UK horticulture

Previously only a minor pest of brassica production, the cabbage whitefly, *Aleyrodes proletella*, has become of greater significance in Europe in recent decades. This sap-sucking insect causes damage by reducing growth and spoiling produce with its waxy deposits and sooty mould growth caused by excretions.

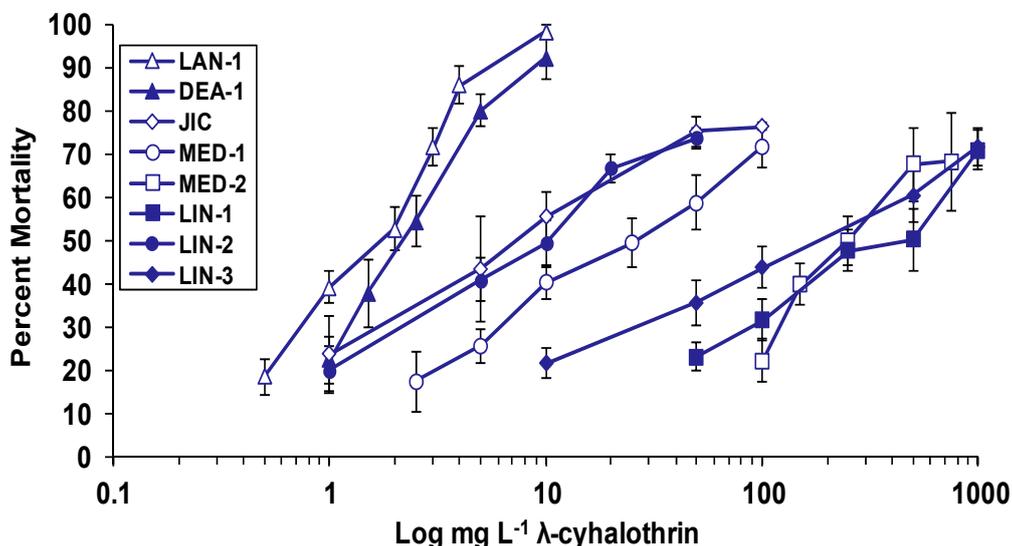


### Causes of outbreaks

Contributing factors are likely to have included loss of insecticides from the market, insecticide resistance, poor spray coverage, cultural intensification, loss of natural enemies, and climatic change. These factors may interact directly or indirectly, exacerbating the problem.

### Insecticide resistance

Research at NRI proved the existence of resistance to a range of synthetic pyrethroids in populations in the UK. This matched areas of extensive production in which severe outbreaks had occurred after 2000. No cross-resistance to systemic neonicotinoid insecticides was found, which thus far remain effective.



### Potential natural enemies

Field surveys were carried out on wild populations of *A. proletella* to identify native natural enemies. A number of specialist parasitoid species and a predatory beetle were found. One parasitoid and the beetle were tested for their potential to regulate whitefly numbers in trials at NRI. While both species had an impact, early releases of the parasitoid were highly effective over multiple whitefly generations.



### IPM Field Trials

Funded by the Agriculture and Horticulture Development Board, field trials are taking place to investigate the impacts of early parasitoid release, netting covers and systemic insecticides, both individually and in combination. The aim is to improve whitefly management and thus increase the marketable yield from kale crops.

In the future, additional IPM components may be explored such as cultivar resistance, selective insecticides and improved application technology. Increasing the range of insecticide options will enable rotations for insecticide resistance management. Monitoring will be key to effective deployment of augmentative biological control and to the development of action thresholds for spraying on different crops.



### Other research

Work is also taking place on the ecology and natural enemies of the related species *Aleyrodes lonicerae*, at present only an occasional minor pest of strawberries and ornamental horticulture.

Reference: Springate & Colvin (2012) Pest Management Science, 68 (2), 260-267.