

# Crop protection

## New generation of controls for vegetables

Numerous crop protection products once widely used by vegetable growers have been lost from the market – and many more are predicted to follow suit over the next decade – as a consequence of European approvals reviews and new legislation. The resulting crop protection gaps threaten the profitability of some crops – such as carrots and lettuce – and will dent the economics of many others.

Despite work by HDC to secure a range of 'off-label' approvals (now known as Extensions of Authorisation for Minor Uses or EAMUs) to maintain a range of active ingredients for the vegetable industry, it is essential that sustainable long-term crop protection measures are also developed.

### The project

This Defra Horticulture LINK project (known as SCEPTRE) is assessing new chemistry, biopesticides and novel technologies and developing new integrated pest management programmes for sustainable pest, disease and weed control in a range of edible crops.

For field vegetables, the disease work is focusing on downy mildew, powdery mildew, ringspot and alternaria in brassicas; rust in leeks; and botrytis in lettuce. The pest work is focusing on aphids in brassicas, lettuce and carrot; cabbage root fly, whitefly and caterpillar in brassicas; and thrips in alliums.

There will also be a programme working on IPM in brassicas, lettuce and carrot.

In weed control, herbicide residue studies have been undertaken on a range of crops



A trial last year looked at the crop safety of a potential new vegetable herbicide



Fungicides and biofungicides have been screened for control of dark leaf spot on young brassica plants



Diamond-back moth caterpillar: the chemical insecticides tested reduced numbers

and the project will also investigate herbicides for control of broadleaf weeds across various vegetable crops, and some alternative non-chemical control methods.

The field vegetable work is being conducted by ADAS (diseases and weeds), Warwick Crop Centre (pests) and the Allium & Brassica Centre (weeds).

### Progress

The first experiments were undertaken in 2011 and included:

- A trial of fungicides and biofungicides to control dark leaf spot on young brassica plants

- A trial of fungicides and biofungicides to control downy mildew on brassica seedlings

- A screening trial to identify novel insecticides against caterpillars on Brussels sprout

- A screening trial of novel insecticides for aphids on Brussels sprout

- An evaluation of conventional and biological pre-transplant drench insecticides to control the larvae of cabbage root fly on cauliflower

- A comparison of conventional and biological insecticides for the control of currant-lettuce aphid on lettuce

- A screening trial of novel conventional and biological

insecticides to control thrips on leek

- A screening trial of novel conventional and biological insecticides for the control of willow-carrot aphid on carrot

- Evaluation of a herbicide for crop safety and weed control on 14 crops

- Residue studies on two herbicides to obtain data to support new applications for EAMUs on products where satisfactory effectiveness and phytotoxicity data is already available.

- *The summary results from these experiments are available to download from the SCEPTRE web pages ([www.hdc.org.uk/sceptre](http://www.hdc.org.uk/sceptre))*

*[hdc.org.uk/sceptre](http://hdc.org.uk/sceptre) by following the link from the HDC website home page. You will also find other information about SCEPTRE including the latest presentations made at grower conferences.*

### PROJECT PROFILES



**CP 77**  
**Sustainable crop and environment protection –**

**targeted research for edibles SCEPTRE (Defra Horticulture LINK HL 01109)**

**Term:** October 2010 to September 2014

**Project co-ordinator:** Tim O'Neill, ADAS (pictured)

**Industry leader:** David Piccaver

**Industry representatives:** Harriet Duncalfe and John Sedgwick

**Location:** various research and commercial sites

“ Given the continual loss of pesticide active ingredients for our industry, it was essential for HDC to collaborate in this research to identify alternatives for the most pressing pests, diseases and weeds. Although in its infancy, this Horticulture LINK project is likely to provide growers with welcome alternatives ”

**John Sedgwick, Stewarts of Tayside**