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Natural predators are key to beat crop pests

Australian vegetable growers have teamed up with researchers under a Hort Innovation funded project to find more natural and sustainable ways to manage damaging pests in their fields.

Their aim is to grow cleaner and greener crops; with consumer preferences, changes in maximum residue limits in export markets, the reduced availability of insecticide products (as a result of registration restrictions), and pests becoming chemically resistant - all drivers for the change.

Hort Innovation Research and Development Manager Ashley Zamek said beneficial bugs may play a key role in the solution.

“Chemical use in agriculture is unavoidable, but for some time now there has been mounting pressure to reduce reliance on the spraying of insecticides to control vegetable pests,” she said.

“This research project looks at how we can support beneficial insect populations in vegetable crops through approaches that will complement traditional farming by developing methods that are simple to implement, compatible with mainstream farming operations and can help drive down costs.”

Ms Zamek said preliminary results found that “beneficial bugs” such as ladybeetles and predatory mites, which fed on many insect types and were commonly found in vegetable crops, had the potential to counter damaging pest populations.

“The research team found that beneficial insects were more abundant in organically grown crops than in conventional crops where synthetic insecticides had been used. The research also found that the number of beneficial insects present was heavily influenced by surrounding vegetation,” she said.

“Compared with densities in field centres (taken to serve as a ‘baseline’), beneficial insects were more common in the margins of these crops if adjacent to shelterbelts. These results are similar to those found overseas where farmers have now implemented companion planting with profitable results.

“Results have indicated that this enhancement of beneficial insects actually helps to control pest populations, demonstrating the potential benefits of promoting biodiversity in crops.

“This project will ensure there are viable options for Australian growers to implement this work for our environment that does not affect the productivity of the crop.”

The next phase of this research will trial the best way to integrate companion plant resources to promote beneficial insects for sweet corn and brassica crops as case studies.

Growers are being encouraged to get involved. If you are a vegetable grower and you would like to get involved in this project, contact the project lead, Professor Geoff Gurr at ggurr@csu.edu.au or 02 6365 7551.

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