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Bugs don’t get recognition they deserve

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Hector Carcamo, Agriculture Canada insect pest management researcher, explores a canola research plot in search of insects, beneficial and otherwise, during a crop walk event held in Lethbridge Aug. 7. | Barb Glen photo

Hector Carcamo once kept a carabid beetle as a pet.

Ground beetles and spiders are among the Agriculture Canada entomologist’s favourite insects as many of them do battle against pests that damage crops.

Those battles aren’t pretty. Beneficial insects bore holes into the eggs or bodies of insects and lie in wait to attack or become parasites that eventually kill their hosts.

The results favour farmers and Carcamo wants producers to appreciate that fact.

“Every field will have (carabid beetles) and we often don’t realize that they’re kind of working for us in the background, providing a great service for you eating cutworms, eating the lygus bugs that are washed down by rain. (They’re) doing all this great

work for you and all without any cost to us," Carcamo said during an Farming Smarter crop walk in Lethbridge Aug. 7.

"They never send you a bill in the mail for services provided. The least we can do is kind of be kind to them and if possible only spray your fields if you really have to spray. That's the No. 1 thing we can do to protect beneficial insects like carabid beetles and spiders, is to follow the economic thresholds and if possible maybe tolerate a little bit more feeding."

There are about 300 different species of carabid beetles in Alberta, ranging in size from two to 25 millimetres long.

"It's good to have this diversity because then you will have some that will feed on eggs.… There are some that actually have the common name of caterpillar hunter," he said.

Carabids are only one example of beneficial insects, Carcamo and fellow entomologist Vincent Hervet told field day participants.

Among the most successful ones is Tetrastichus julis, a parasitic wasp that has been put to work against cereal leaf beetle for several years in the prairie provinces and British Columbia.

Hervet showed samples of beneficial spiders, many of which will hunt on the ground and climb plants to feed on insects.

Many will attack and eat insects larger than themselves.

"All spiders really do have poison, but they're actually too smart to waste it on us," said Carcamo. "The vast majority of spiders are safe and helpful and beneficial."

The well-known daddy long legs, also called the harvestman, has no venom and is adept at climbing to find insect prey.

Hervet also discussed beneficial predatory bugs with sucking mouth parts that attack pests like lygus, which also have sucking mouth parts.

The aptly named ambush bug will hide in vegetation and wait for prey, while the pirate bug and damsel bug are other beneficials that fight the nasties.

“Size doesn’t matter for beneficial insects and this is true because even the smallest ones will be able to kill them right in the egg before they can do any damage at all,” said Hervet.

Syrphid flies, also called flower flies, are good pollinators as adults. Their larvae are predatory.

Hervet said there are many species of predatory flies, some of them voracious attackers of bugs considered to be pests. Their fairly long, spiny legs distinguish them from other flies.

Among his list of parasitoids are flies, beetles and wasps. Among the latter, only females have a stinger, similar in that respect to bees.

“Inside of the stinger, there are two tubes. One is for laying eggs and the other one is for venom injection,” said Hervet. The wasp first injects venom and then inserts eggs. Those hatch and the larva feed on the blood of the host insect.

“It doesn’t really damage the insect until it’s big enough and when it’s big enough, it doesn’t need the host anymore to live. So then it will eat the whole host.”

Wasps are distinguishable from flies because they have four wings instead of two.