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Biocontrol of canola cutworms



KEY PRACTICE: The key to minimizing damage from cutworms is early detection through frequent field scouting. Proper identification of cutworm species can be important in the protection of beneficial insects and implementation of other biocontrols.

PROJECT TITLE, LEAD RESEARCHER: “Biocontrol of canola cutworms: Identification and attraction of parasitoids,” 2012-15, Barbara Sharanowski, University of Manitoba

GROWER ORGANIZATION FUNDER: ACPC

Insecticide application is the most common control option for cutworms in canola but it is very difficult to manage. Effective timing of these treatments varies between cutworm species based on life cycle and their subterranean and nocturnal habits. This study looked at parasitoids as the most effective biocontrol option for cutworms affecting canola.

The objectives of this three-year study were: to develop an understanding of the species involved; learn which species of cutworm each parasitoid would attack; and determine whether these parasitoids effectively reduce cutworm damage.

Cutworm samples were collected from Manitoba farm fields from May to July in 2012, 2013 and 2014. Research collaborators in Alberta provided additional reared parasitoids and their host cutworms. Results showed a reduction in parasitized cutworms in Manitoba for 2013 and 2014 compared to 2012. Numbers in Alberta were lower in 2012 and 2014 compared to 2013.

A total of 16 different species of hymenopteran parasitoids were found attacking Prairie cutworms, several of which were new host identifications.

A user-friendly online identification key to all 16 species, complete with high-resolution images, will be published by the end of 2015.

Dual-choice tests were conducted to determine the effectiveness of various cover crops to attract beneficial parasitoids based on the flower colour and flower odour preferences of both fed and starved parasitic wasps. In these tests, yellow flowers proved much more attractive than white or green and starved wasps clearly favoured floral odours from canola and mustard over camelina and buckwheat.

The tested cover crops also added the nutritional resources necessary to maximize the parasitoid’s ability to lay eggs. However, all the benefits provided by these cover crops may still not be enough to reduce cutworm populations below economic levels due to relatively low rates of parasitism. Despite aiding

continued on page 27

