Luperina passer

Darksided

Cutworms in the Peace River Region

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Apamea amputatrix

Apamea devastator

Introduction

Cutworms feed on a large variety of crops, including canola, fescue and timothy. Well-researched economic thresholds exist for only a small number of species of cutworms. Most thresholds for cutworms in field crops are nominal.

Early spring monitoring is advised for cutworm management yet larval instar stage and larval species identification is difficult to accurately assess for most prairie species. Improved diagnostic tools are needed to accurately assess cutworm stage and species. Their development hinges on the collection, rearing, and curation of field-collected specimens capable of yielding accurate location, host-plant relationship, parasitoid, and genetic information required for future in-field larval identification of the many species within this complex of agricultural pests.

Objectives

To determine the species, larval instar stage and density of cutworms causing damage in commercial fields.

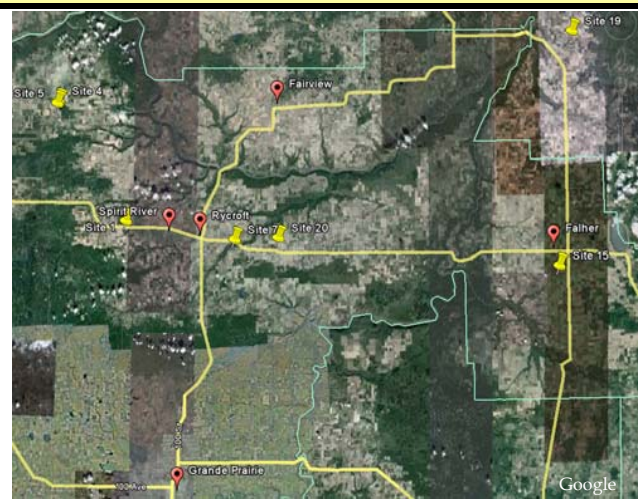

Fig. 1. Cutworm larval collection sites in 2011 (yellow pegs above).

Pupa Larva Egg Adult

Common name	Species	Larval feeding	WINTER Oct-Mar	SPRING Apr	May	SUMMER Jun	Jul	Aug	FALL Sep	Oct
Redbacked	*Euxoa ochragaster* (Gn.)	Above-ground								
Darksided	*Euxoa messoria* (Haw.)	Above-ground								
Army	Euxoa auxiliaris	Above-ground								
DIngy	*Feltia jaculifera* (Gn.)	Above-ground								
Dingy	*Feltia herilis* (Grt.)	Above-ground								
Dingy	*Feltia subgothica* (Haw.)	Above-ground								
Pale western	*Agrotis orthogonia* Morrison	Subterranean								
Dusky	*Agrotis venerabilis* Wlk.	Above-ground								
Glassy	*Apamea devastator* (Brace)	Subterranean								
Yellow-headed	Apamea amputatrix	Above-ground								
Yellow-headed	*Apamea inficita*	Above-ground								
Yellow-headed	*Apamea cogitata*	Above-ground								
Armyworm	*Pseudaletia unipuncta* (Haw.)	Above-ground								
Clover	*Discestra trifolii* (Hufn.)	Above-ground								
Bronze	*Nephelodes minians* Gn.	Above-ground								
Spotted	*Xestia adela* Franc.	Above-ground								
Bertha armyworm	*Mamestra configurata*	Above-ground								
Bristly	*Lacinipolia renigera* (Steph.)	Above-ground								

Methods

Damaged commercial fields of timothy and creeping red fescue were selected for sampling since they exhibited symptoms including:

- •bare areas,
- •desiccated or brown patches,
- •leaf feeding, or
- •clipped stems in timothy or creeping red fescue.

Lepidopteran larvae were collected by manually searching damaged plant crowns and surrounding soil. Larvae were individually reared at 21°C in 29.5 mL plastic cups lined with filter paper provided with cutworm media twice weekly until pupation. Emerging adults were preserved for species confirmation.

Summary

Cutworms, sod webworms, and wireworms were collected (N=118) in 2011. Rearing continues in the lab with pupation, adult emergence plus parasitoid emergence occurring daily. Preliminary rearing data indicated a mortality rate of 44.9%, parasitism rate of 15.3% while 40.7% of the collected larvae were healthy.

Fig. 2. Creeping red fescue field (an 8 yr-old stand) near Silver Valley AB in 2011.

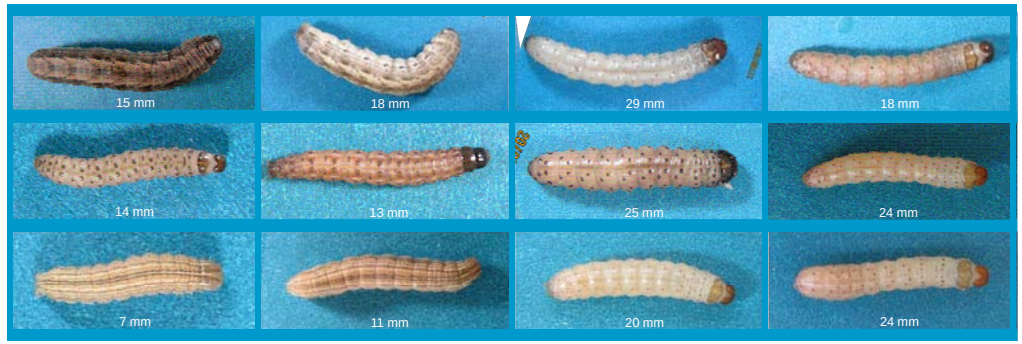

Fig. 3. Larvae collected in 2011 for rearing and to confirm species identification plus parasitism rates.

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References (1) Ayre and Lamb. 1990. Can. Ent. 122: 1059-1070. (2) Byers pers. Comm. 2000 . (3) Hill, Byers, Schaalje. 1992. J. Econ.Entomol. 85: 1387-1392. (4) Turnock, Timlick, Palaniswamy. 1993. Agriculture, Ecosystems and Environment. 45: 213-227. (5) Alberta Agriculture and Rural Development website at: http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/