BIOCONTROL OF LEAFY SPURGE

LEAFY SPURGE HAWK MOTH

HYLES EUPHORBIAE


a.


b.


c.

LEAFY SPURGE (*EUPHORBIA ESULA*) PLANT GUIDE

Life Cycle	Root	Leaves	Stems	Flower	Seed/Fruit	Toxic
Perennial	Taproot and rhizomes brownish with pink buds	Alternate, narrow, 1 to 4 inches long; leaves contain a milky sap	Up to 3 feet tall; stems contain a milky sap	7 to 10 yellowish-green flowers in small clusters; the inconspicuous flower is surrounded by showy, heart-shaped yellow bracts	Oblong, grayish to purple, and borne in a three -celled fruit	Horses, cattle, humans

BIOCONTROL AGENT DESCRIPTION

- Larvae are up to 10cm long (4in) and they change color as they mature going from dark green, to brown and yellow striped, to green with white spots, to red, black, yellow, and white with a horn at the back end
- Larvae contain toxin which protects them from predators
- Adults have wingspans up to 5cm (2in) and are white, pink, and grayish-brown on the back with pink on the undersides (image **d.** on back)

BIOCONTROL AGENT IMPACT

- Larval feeding defoliates spurge, though this often does not kill the attacked plants

MONITORING

- During summer, inspect leafy spurge foliage for larvae
- The conspicuous coloration of larvae easily differentiates them from other species

LIFE CYCLE	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec
LEAFY SPURGE				Bolting		Flowering		Seeding				
LEAFY SPURGE HAWK MOTH						Adults						
						Eggs						
							Larvae					
					Pupae							
	Overwintering Pupae								Overwintering Pupae			

How to Use

- It is typically not necessary or recommended to collect and move these moths
- This moth has limited biocontrol impact alone, but may stress the weeds when in combination with other biocontrol agents
- Pupae are heavily preyed upon so sites with low populations of rodents, ants, etc., are preferred

Note

- Though moth densities may be locally high in some years, disease and predation typically prevent densities from developing to levels substantial enough to impact leafy spurge populations in most areas
- Even where high densities have resulted in total plant defoliation, impact has been insignificant as defoliation does not kill leafy spurge plants

In Montana

- These moths are widespread and larvae are visible in most leafy spurge infestations

Image Key

a. Leafy spurge infestation (Montana Biocontrol Coordination Project)

b. Leafy spurge hawk moth larva; intermediate larval stage (Montana Biocontrol Coordination Project)

c. Leafy spurge hawk moth larva; final larval stage (Montana Biocontrol Coordination Project)

d. Adult leafy spurge hawk moth (Whitney Cranshaw, Colorado State University, Bugwood.org)

e. Bolting leafy spurge visible in spring (Evelyn Neel, www.evelynneel.com)

f. Flowering leafy spurge seasonal changes; bolting in spring and early summer (left), mature flowers in summer (center), seeding in fall (right) (Evelyn Neel, www.evelynneel.com)

g. Leafy spurge hawk moth pupa (Whitney Cranshaw, Colorado State University, Bugwood.org)

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