

## Leafy Spurge Flea Beetles, *Aphthona* spp., Quick Presence/Absence/Abundance Guide

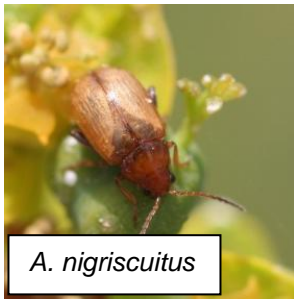


### Overview:

Successful weed biological control programs need monitoring of past releases to determine biological control agent establishment in the field. This guide provides a quick and easy method to assess presence/absence and relative abundance of leafy spurge flea beetles, *Aphthona* spp. (AP) in leafy spurge infestations.

### Leafy Spurge:

Leafy spurge, *Euphorbia esula*, is a deep-rooted, aggressive, persistent perennial that reproduces vegetatively and by seed. Plants have an extensive root system which grows both horizontally and vertically that is capable of reaching depths up to 20 ft. Stems are thickly clustered and have narrow, alternate leaves which exude milky latex when damaged. The flowers are small, yellowish-green, and enclosed in showy yellow-green bracts. Seeds are oblong and occur in clusters of three in a capsule. When the seeds are dry, the capsules shatter and spread the seeds as far as 15 ft from the plant. Leafy spurge is commonly found in grassland and rangeland habitats, but is also capable of invading forests and riparian areas, displacing native vegetation.



*A. nigriscuitus*



*A. lacertosa*

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### Leafy Spurge Flea Beetles (AP):

The *Aphthona* spp. (AP) complex consists of six different species, all with a similar biology. The larval stage is the most destructive to leafy spurge. AP larvae feed on fine root hairs, impairing the roots and creating wounds which may be infected by secondary pathogens. AP larvae may be found in infested leafy spurge roots from July to early spring of the following year. AP pupate in the soil and adults emerge from June to August. Adult AP feeding reduces leafy spurge's photosynthetic ability for root reserves. AP are best suited for dry sites with a large amount of sun exposure. Recent studies suggest that AP can also be used as a "bio-herbicide" in riparian areas.

Count location	# insects per 10 sweeps
1	
2	
3	
4	
5	
6	

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**Biological Control Agent Monitoring: Conduct monitoring during the last week of June using the table to the right and send data to the BLM/ISDA biological control coordinator:**

- Count location – In an area within the same weed infestation as the original release, identify 6 locations at least 10 paces away from each other.
- # of insects per 10 sweeps – In each of these areas, count how many insects are in your net after 10 sweeps of the surrounding vegetation. Take one step between each sweep. Repeat 5 more times (for a total of 6 sweep sites, 60 sweeps).