## Black Army Cutworm

*Actebia fennica* (Tauscher)
Lepidoptera: Noctuidae

Shepherd, R. F.; Gray, T. G.; Maher, T. F. 1992. Management of black army cutworm. Information Rpt. BC-X-335. Victoria, B.C.: Forestry Canada; 17 p.

**Objective:** To describe a monitoring system for *A. fennica*, with predicted defoliation levels, useful for managing plantings of conifer seedlings.

**Abstract:** Black army cutworm, *Actebia fennica* (Tauscher), adults are attracted to recently burned areas where they lay their eggs. Hatching caterpillars prefer to feed on numerous non-conifer food plants sprouting in burned areas, but they will increasingly feed on seedlings of numerous conifer species planted on that site as caterpillar densities increase. White spruce [*Picea glauca* (Moench) Voss] and lodgepole pine (*Pinus contorta* Dougl. ex Loud.) are commonly attacked. Older instars produce most of the damage. Defoliation reduces seedling height growth, may kill terminals, and inhibits root production. Feeding damage is compounded by moisture stress at the planting site. Sporadic but severe outbreaks of *A. fennica* occur in British Columbia. Most of the defoliation will occur the first year caterpillars appear, with little damage or none occurring in subsequent years. Chemical control is not advisable for *A. fennica* as severe defoliation may occur before a treatment can be applied. Management of *A. fennica* should emphasize monitoring the activity of *A. fennica* adults and larvae in susceptible areas and minimizing planting in areas of higher risk.

Sites susceptible to outbreaks of *A. fennica* in British Columbia are found within the Engelmann spruce-subalpine fir, montane spruce, sub-boreal spruce, and interior cedar-hemlock biogeoclimatic zones. In particular, recently burned areas prone to droughty conditions should be monitored as moisture stress compounds any feeding damage produced by *A. fennica*. Sites with adequate moisture are less prone to extended damage and sites burned after September 15 are not likely to be attractive to *A. fennica*.

**Sampling Procedure:** Sampling should begin at the end of June. Use green Multi-Pher traps (model MP-1; Bio-Contrôle Services, Ste-Foy, Quebec, Canada) baited with a rubber septum releasing 1,000 μg of (Z)-7-dodecenyl acetate and (Z)-11-tetradecynyl acetate pheromone mixture at a ratio of 1:20. Traps should also hold a 2.5-$cm^2$ square of an insecticide strip in the bottom of the trap to kill attracted moths. Place traps 0.5–1.0 m above ground and at least 100 m apart on south-facing slopes in areas burned by natural or prescribed fires within the past 12 months. One trap will service a 1-$km^2$ (or smaller) area if checked every 1–2 weeks to ensure it is in good shape and operating properly. Rodents may raid traps to feed on captured moths. Traps should remain in place from July 1 to September 15. Tally the total number of moths caught in each trap during this period and compare to the levels of caterpillar infestation and defoliation predicted for the following spring.

| Moth density per trap | Predicted caterpillar infestation level the following spring | Predicted defoliation level of conifer seedlings the following spring |
|---|---|---|
| <350 moths | Low | Low risk of damage; plant in the spring |
| 350–1,200 moths | Moderate | Moderate risk of defoliation at some, but not all sites; check vegetation on site for plants favored by *A. fennica* before planting. |
| >1,200 moths | High | High risk of severe defoliation |

Sites identified as having a risk of a moderate caterpillar infestation level should be visited the following spring immediately after snow melt. Preferred food plants (Table 1) should be examined for feeding damage by *A. fennica*. Randomly select 20–30 plants at the site, including at least 5 different species. Significant damage to planted conifer seedlings is likely if most of the inspected host plants show "shotgun holes" or similar feeding damage. If no damage is observed, flag the plants, return in 1 week, and check the plants again. If damage is present at the second visit, and if 14 days of feeding likely remains (before the end of May if at low elevations), then significant damage to conifer seedlings is still possible. If no damage is found at the second visit, then significant damage to conifer seedlings is unlikely and planting should proceed.

For sites where a significant or high risk of defoliation is possible, consider delaying planting until pupation occurs (June 15 at low elevations and up to 3 weeks later at higher elevations) or until the following spring. Should an outbreak occur after planting, mark the area infested at the time of peak damage and survey the area again the following spring before replanting in that area. Replace any trees that are dead, have more than 60% defoliation, or have dead terminal leaders. Potential damage by *A. fennica* can be minimized by planting conifer seedlings in good growing sites with adequate soil moisture and using appropriate planting techniques that avoid damaging the roots. Newly planted seedlings in moist sites and with healthy roots, and older plantings with established root systems, may survive an unexpected defoliation by *A. fennica*.

**Notes:** Damage by sphinx caterpillars (hornworms) or infection by *Rhizinia* root rot can be mistaken for damage by *A. fennica*. Always collect caterpillars and identify them to verify that *A. fennica* is responsible for observable damage. Cutworm caterpillars typically hide in the soil near damaged plants during the day.

**Table**

Table 1. Food plants commonly found in the Columbia Valley and Cariboo mountains listed from highest to lowest feeding preference by the black army cutworm.

| **common name** | **botanical name** |
|---|---|
| Valerian | *Valeriana dioica* |
| Western meadowrue | *Thalictrum occidentale* |
| Common horsetail | *Equisetum arvense* |
| Fireweed | *Epilobium angustifolium* |
| False hellebore | *Veratrum eschscholtzii* |
| Heart-leaved arnica | *Arnica cordifolia* |
| False Solomon's-seal | *Smilacina racemosa* |
| Hooker's fairybells | *Disporum hookeri* |
| Rosy twistedstalk | *Streptopus roseus* |
| Honeysuckle | *Lonicera* spp. |
| Western larch | *Larix occidentalis* |
| Saskatoon | *Amelanchier alnifolia* |
| Rose, currants, thimbleberries | *Rosa, Ribes, Rubus* spp. |
| Birch-leaved spirea | *Spiraea betulifolia* |
| Bunchberry | *Cornus canadensis* |
| Soopolallie | *Shepherdia canadensis* |
| Aspen, willow | *Populus tremuloides, Salix* spp. |
| Douglas-fir | *Pseudotsuga menziesii* |
| Engelmann spruce | *Picea engelmanii* |
| Lodgepole pine | *Pinus contorta* var. *latifolia* |