

European Pine Shoot Moth

Rhyacionia buoliana (Denis & Schiffermüller)

Lepidoptera: Tortricidae

Gray, T. G.; Slessor, K. N.; Shepherd, R. F.; Grant, G. G.; Manville, J. F. 1984. European pine shoot moth, *Rhyacionia buoliana* (Lepidoptera: Tortricidae): identification of additional pheromone components resulting in an improved lure. Canadian Entomologist 116: 1525-1532.

Objective: To improve the pheromone lure for *R. buoliana* through the addition of other components.

Abstract: European pine shoot moth, *Rhyacionia buoliana* (Denis & Schiff.), has become an important pest of two- and three-needle pines (*Pinus* spp.) in the Pacific Northwest, the Lake States, the upper Midwest, and northeastern USA, as well as in southern Canada. Red pine (*Pinus resinosa* Ait.) is heavily damaged by *R. buoliana*, but other susceptible hosts include Scotch pine (*Pinus sylvestris* L.), lodgepole pine (*Pinus contorta* Dougl.), and ponderosa pine (*Pinus ponderosa* Laws.) This insect primarily infests terminal shoots causing severe deformation and reduced growth.

Pheromone trapping is an important tool in monitoring populations of *R. buoliana*. The sex pheromone of *R. buoliana* was identified as *E*-9-dodecenyl acetate, but commercial preparations of the lure did not attract the expected numbers of males in the field. Additional research has identified a 97:3 ratio of *E*-9-dodecenyl acetate:*E*-9-dodecenol as a stronger lure than either virgin females or *E*-9-dodecenyl acetate alone. Dodecanol (0.03% or more) inhibited male moths in the absence of dodecyl acetate but had no effect when both *E*-9-dodecenyl acetate and *E*-9-dodecenol were present. Dodecyl acetate masked this inhibition when present at concentrations of 0.3% or greater.

Lures embedded in polyvinyl chloride rods performed better than lures loaded in rubber septa, possibly due to varying release rates from the septa. In contrast, pheromone release from the rods was constant.

Sampling Procedure: Construct triangular traps from 2-liter milk cartons so that the interior surface measures 695 cm². Coat the interior surface with an adhesive material. Insert in each trap a 2.5 x 3 mm diameter lure of polyvinyl chloride rod (5% by weight) containing a 97:3 ratio of *E*-9-dodecenyl acetate:*E*-9-dodecenol embedded separately. Hang traps on Scotch pines 2-4 m above ground and 20 m apart. Orient traps with one edge directed to the ground. Leave traps in place 4-9 days before servicing.