



**Very High Risk / Impact  
in all regions of the Okanagan**

*Limited population with significant potential  
to spread in the region.*

# Apple Clearwing Moth

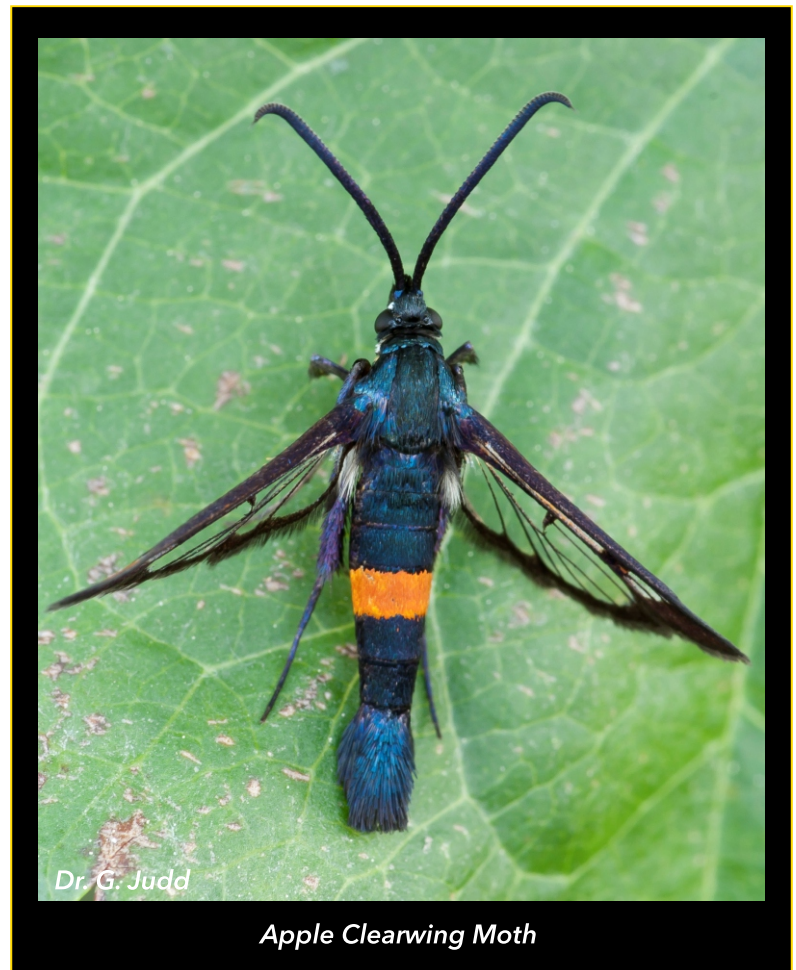
*Synanthedon myopaeformis*

**AKA: SMALL RED-BELTED CLEARWING MOTH**

## DESCRIPTION

- Larva are 15 - 20 mm long, dirty white with reddish-brown head and thoracic shield behind head
- Pupa are 15 mm long, pale yellowish-brown
- Adults have a 20-25 mm wing-span, slender dark blue-black body with orange-red band across the abdomen
- Wings are transparent (lack scales), the front pair narrow, shiny and slightly dark; hind wings are much shorter in the Similkameen and Okanagan Valleys

Apple Clearwing Moth has a 2-year life cycle. Adult flight begins in early June, peaks by mid-July and ends in late August. Females feed on nectar for a few days before laying eggs. Eggs are laid singly in burr knots, pruning cuts and wounded bark on branches and trunks, and likely any other site that allows larvae to get under the bark. Larvae feed on sap between the bark and inner tissue (cambium layer) of trees for almost two years before pupation. Larval feeding leads to the creation of shallow, irregular winding galleries just cutting into the wood, about 20 - 25 mm long. Frass collects in feeding tunnels but is expelled by larvae in spring just before they pupate. The larvae overwinter in the tunnels and pupate the following spring at the entrance of the tunnels. When the moths are ready to emerge (mostly in the morning), the pupae wriggle to the tunnel exit hole and extend out to allow the adults to emerge. The appearance of empty pupal cases sticking out of the bark is a useful indication of its presence.



*Apple Clearwing Moth*

## IMPACT AND RISKS

- Larvae of Apple Clearwing Moth tunnel under the bark anywhere from below the crown area up to branches. They enter the trunk through burr knots, wounds, grafts, branch collars, pruning cuts, and wire damaged areas. Infested rootstocks appear swollen.
- Top-grafted trees are more susceptible to attack and feeding by larvae can kill young trees.
- Secondary damage in young trees includes weak limbs, poor fruit set and early leaf drop.
- In the drier desert climate of the Southern Interior of B.C., infested trees are prone to drought stress which can contribute to death of trees.
- In highly infested orchards, damage can spread throughout tree canopies and central leaders of high-density plantings are heavily attacked after being pruned to control growth.

## PREVENTION AND MITIGATION

- Reduce the risk of infestations by minimizing wounds to trees, remove young trees with cankers, and seal wounds with wound-protecting products.
- Tree guards, trunk wraps, and soil mounding are not effective and probing trees with metal wires to kill larvae will damage trees.

## TREATMENT AND DISPOSAL

- Mass trapping: Two litre plastic bottle traps baited with grape juice are highly attractive to both male and female clearwing moths. Two litre honey buckets can be used instead of plastic bottles. Moths should be cleared out of traps regularly. A bait of 8 L Water + 1 L apple juice + 1 L vinegar + 100 g sugar has been found to be effective at reducing moth populations in Tyrol, Italy. Use an open bucket (such as a 2-liter honey bucket) to allow for easy clearance of trapped moths with a sieve. Clear out moths weekly and top up bait as needed.
- Mating disruption: Mating disruption with Isomate-P dispensers can be used for areas with very low levels of apple clearwing moth (orchards with populations of less than 25 moths/trap the previous season). Mating disruption programs will be more successful if all growers in the area participate. The dispensers should be applied at 100/acre and hung at head height, 5-6 feet. These dispensers are often good for two years of control.
- Biological control: Earwigs, ants, spiders and birds will feed on larvae. Birds cause damage to the bark of trees during feeding and this may kill trees.
- Chemical control: Spray application technique and coverage are very important. Recommended insecticides should be applied with a hand gun or backpack sprayer at high water volumes to ensure thorough coverage of tree trunks and scaffold limbs. Check with your field service person or consultant for effective pesticides and timing of spray applications.



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