

Pest Risk Assessment for the State of Oregon

Autographa gamma (L.) – Silver Y Moth

Pest Identity

Scientific Name: *Autographa gamma* (L.)
Order: Lepidoptera
Family: Noctuidae
Common Name: Silver Y Moth

Risk Rating Summary

Relative Risk Rating: Medium

Numerical Score: 13 (maximum 20)

Uncertainty: Medium

Pest Background

The Silver Y moth, *Autographa gamma* (Lepidoptera, Noctuidae) is a polyphagous noctuid moth native to Europe, Asia and northern Africa. It is a medium-sized moth with a wingspan of 30 to 48 mm showing some intricate patterns with various shades of brown and grey. In the center of each forewing is a distinct silver-coloured mark shaped like the Greek letter “Gamma”.



Fig. 1: *Autographa gamma*, Silver Y Moth, adult (Photo by Julieta Brambila, USDA) and larva (Photo from CABI, 2003)

The Silver Y moth generally shows two to three generations per year in its native range. In Europe, the Silver Y moth is known to migrate insometimes in significant numbers, from the Mediterranean and Black Sea north to the UK and even Greenland and Finland. Damage is caused by the larvae feeding on a long list of host plants, including crops such as garden pea, sugar beet, and cabbage.

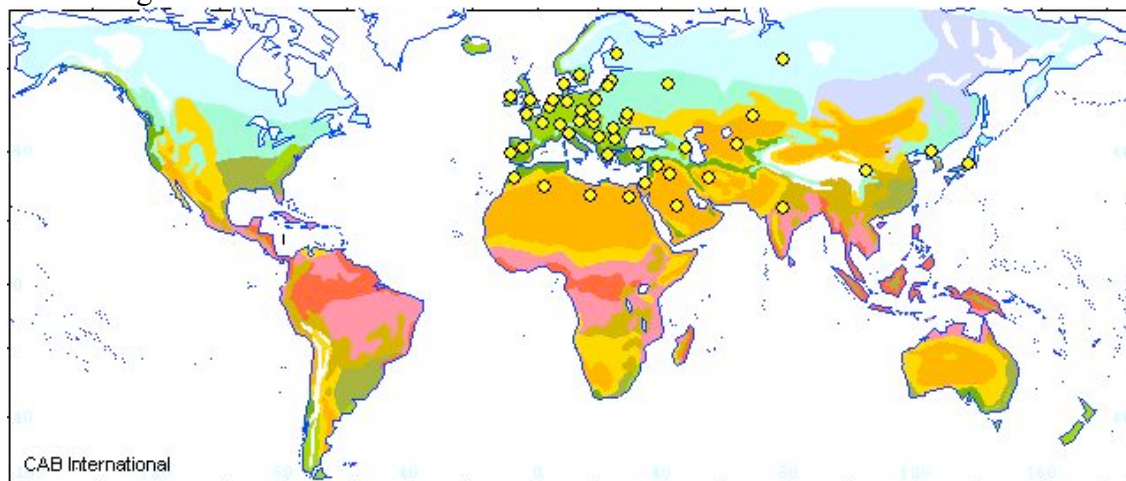


Fig. 2: Distribution of *Autographa gamma*, Silver Y Moth, (Taken from CABI, 2007)

Spread Potential to Oregon: Low (numerical score 1)

Justification

The Silver Y moth has reportedly been intercepted on average 26 times every year, mainly on cut flowers, ornamentals, and vegetables from Europe and permit cargo. Most interceptions have been reported from ports in the eastern part of the US indicating a relatively low spread potential to Oregon.

Establishment Potential in Oregon: High (numerical score 5)

Justification

The Silver Y moth's broad host range of various crop, vegetable, flower, greenhouse crop and nursery crop species, the availability of a suitable climate in the agriculturally important Willamette Valley of Oregon, and the strong dispersal capacity of adult moths, account for its high potential for establishment in Oregon. The Silver Y moth feeds on over 224 different plant species, including low growing weeds or commonly cultivated crops such as alfalfa, beet, carnation, carrot, chickpea, corn, cowpea, cruciferous crops, grapevine, green bean, leek, onion, pea, potato, sunflower, tomato, and wheat.

The Silver Y moth's preferred climate zone can be characterized as temperate and dry most closely associated with deserts and xeric shrublands, and temperate broadleaf and mixed forests. Based on climate models, the Silver Y moth could survive and establish in the Willamette Valley and the southeastern part of Lake and Malheur counties of Oregon.

The likely number of the Silver Y moth generations for Oregon may vary between 2-3 based on biology data from its native range. In areas where *A. gamma* is able to survive the winter, it overwinters in the third to fourth larval instars or the pupal stage. There is no true diapause.

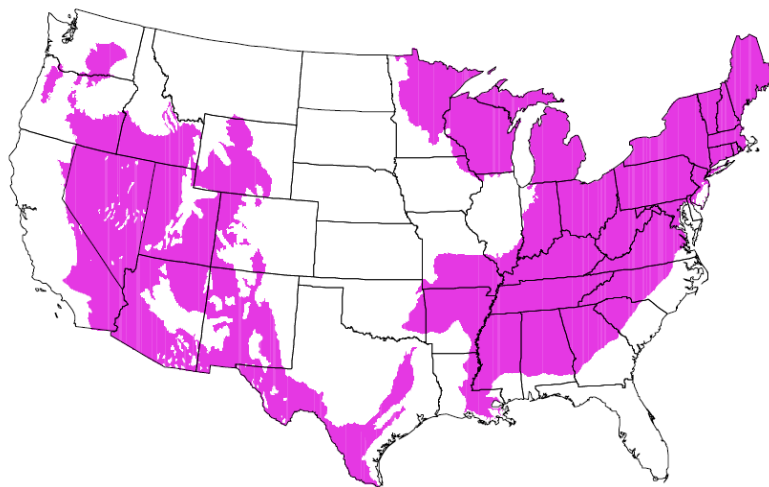


Fig. 3: Predicted distribution of the Silver Y moth in the continental US (Vennett et al., 2003).

Environmental Impact Potential to Oregon: Low (numerical score 2)

Justification

Being considered an important crop pest, there is little information and data available on the Silver Y moth's impact on the general environment and sensitive riparian habitats. However, during migrations with outbreaks of mass reproduction reports indicate that the larvae can damage trees and bushes, such as willows, alder, hazelnuts, and black currant.

Economic Impact Potential to Oregon: High (numerical score 5)

Justification

The Silver Y moth reportedly causes major damage to annual and perennial leguminous crops, sugar beet, potatoe, vegetables, including corn and sunflowers, and various other plants in its native range. Larvae damage crops by skeletonizing the foliage or feeding on the leaf epidermis, as well as on the petiole or leaf stalk. Older larvae are particularly voracious eating through the entire leaf. A 25% or higher leaf damage can result in significant crop damage. Apart from damaging the foliage of their host plants, larvae can scrape the skin from grapes and feed on the contents of the fruits. A single larva is reported to damage 20 or more mature grapes.

Conclusion

Considering the continuous interception of the Silver Y moth across the US, the high probability of establishment and adverse economic impact in Oregon, the Silver Y moth is considered a medium-risk pest for Oregon. Although the environmental impact will likely be minimal, the presence of an established Silver Y moth population in Oregon would adversely affect our economic trading relationships with other national and international trading partners and cause direct damage to many commodities.

Literature consulted

- Crop Protection Compendium. 2007. CPC Report – *Autographa gamma* (Silver Y Moth). CAB International 2007. Internet search:
http://www.cabicompendium.org/cpc/report_select.asp?CCODE=PYTOGA
- Venette R.C, Davis EE., Hesiler H, Larson M. 2003. Mini Risk Assessment Silver Y Moth, *Autographa gamma* (L.) (Lepidoptera: Noctuidae).