Helicoverpa assulta (Lepidoptera: Noctuidae)

This short description has been prepared in the framework of the EPPO Study on Pest Risks Associated with the Import of Tomato Fruit. The whole study can be retrieved from the EPPO website.

EPPO (2015) EPPO Technical Document No. 1068, EPPO Study on Pest Risks Associated with the Import of Tomato Fruit. EPPO Paris [link]

Africa	Asia	Oceania	North America	South-Central America and Caribbean

***Helicoverpa assulta* (Lepidoptera: Noctuidae) (oriental tobacco budworm, cape-gooseberry budworm)**

Why	Identified in the EPPO tomato study.
Where	**EPPO region**: absent **Africa:** Angola, Cameroon, Central African Rep., Christmas Island (Indian Ocean), Comoros, Congo Dem. Rep., Côte d'Ivoire, Gambia, Ghana, Kenya, Liberia, Malawi, Mali, Nigeria, Senegal, Sierra Leone, South Africa, Tanzania, Uganda, Zimbabwe (CABI CPC). **Asia:** Bangladesh, Bhutan, Brunei Darussalam, China (all provinces except Tibet - Wang et al., 2009), Cocos Islands, India, Indonesia, Japan, Korea Rep., Laos, Malaysia, Myanmar, Pakistan, Philippines, Singapore, Sri Lanka, Taiwan, Thailand, Vietnam (CABI CPC). **Oceania**: American Samoa, Australia, Fiji, French Polynesia, New Caledonia, Norfolk Island, Northern Mariana Islands, Papua New Guinea, Samoa, Solomon Islands, Vanuatu (CABI CPC).
Climatic similarity	High. Possibly 10 common climates considering the countries listed above, and its wide distribution in China.
On which plants	Hosts are mainly solanaceous plants, and this species has a more reduced host range than other polyphagous *Helicoverpa*, such as *H. armigera* (Li et al., 2013, citing others). Tobacco, pepper (Wang et al., 2009), Physalis, tomato, lettuce, maize (CABI CPC). USDA (2009) mention publications (incl. Wu et al., 2006) that raise doubt about the host status of tomato, and the possibility that it may have been confused by *H. armigera*. However, many other publications, including after 2006, refer to tomato as a host (e.g. Wang et al., 2009). The pest is also regulated by New Zealand on tomatoes from Tonga and Australia (Biosecurity NZ, 1998 & 2000).
Damage	Larvae feed on leaves, flowers, buds, fruits, stems. This pest was intercepted in the USA on various commodities (USDA, 2009). It is reported as a serious pest of *Capsicum annuum* (damage by larvae feeding inside the fruit) and tobacco (damage by larvae feeding on leaves and buds) in CABI CPC (2013). Cai et al (2003) in Japan showed a strong preference of *H. assulta* for tobacco. Wang et al. (2009) note that it has become a serious threat in tobacco and peppers in China in recent years, causing serious losses (5-15% on tobacco; 20-30% on peppers).
Dissemination	Adults fly. No details was found in the literature.
Pathway	Fruits and vegetables, plants for planting of host plants from countries where *H. assulta* occurs.
Possible risks	The pest seems to present a risk for peppers and tobacco. There is an uncertainty as to which extend tomato is a host. The climatic similarity according to the EPPO Study between the area where it occurs and the EPPO region is high.
Categorization	New Zealand (Biosecurity NZ 1998, 2000)
Sources	Biosecurity NZ. 1998. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Tomato, Lycopersicon esculentum from Tonga. Issued pursuant to Section 22 of the Biosecurity Act 1993. Date Issued: 14 December 1998 Biosecurity NZ. 1999. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Papaya, Carica papaya from Fiji. Issued pursuant to Section 22 of the Biosecurity Act 1993. Date Issued: 9 November 1999. Biosecurity NZ. 2000. Import Health Standard Commodity Sub-class: Fresh Fruit/Vegetables Tomato, Lycopersicon esculentum from Australia. Issued pursuant to Section 22 of the Biosecurity Act 1993. Date Issued: 9 June 2000. CABI CPC Cai CY, Konno Y, Matsuda K. 2003. Studies on Ovipositional Preferences of Helicoverpa assulta and Helicoverpa armigera Annual Report of the Society of Plant Protection of North Japan, Vol. 2003; NO.54; PAGE.140-141

USDA. 2009. Importation of Tomatoes, Solanum lycopersicum, from the Economic Community of West African States (ECOWAS) into the Continental United States. A Qualitative, Pathway-Initiated Pest Risk Assessment. June 5, 2009.

Wang K-Y, Zhang Y, Wang H-Y, Xia X-M, Liu T-X. 2008. Biology and life table studies of the oriental tobacco budworm,Helicoverpa assulta (Lepidoptera: Noctuidae), influenced by different larval diets. Insect Science Volume 15, Issue 6, pages 569–576

Wu K-J, Gong P-Y, Ruan Y-M. 2006. Is tomato plant the host of the oriental tobacco budworm, Helicoverpa assulta (Guenée) ? Acta Entomologica Sinica, Vol. 49, Issue (3): 421-427

Xia XM, Wang KY, Wang HY. 2009. Resistance of Helicoverpa assulta (Guene´e) (Lepidoptera: Noctuidae) to fenvalerate, phoxim and methomyl in China. Crop Protection 28 (2009) 162–167