

Mini data sheet on *Strauzia longipennis*

Added to the EPPO Alert List in 2011 - Deleted in 2019

Reasons for deletion:

Strauzia longipennis has been included in EPPO Alert List for more than 3 years and during this period no particular international action was requested by the EPPO member countries. In 2019, the Working Party on Phytosanitary Regulations agreed that it could be deleted, considering that sufficient alert has been given.

***Strauzia longipennis* (Diptera: Tephritidae - Sunflower maggot)**

Why: An isolated finding of *Strauzia longipennis*, a North American pest of sunflowers, was first reported in 2010 from Germany. Considering the importance of sunflower (*Helianthus annuus*) cultivation in the EPPO region, the German NPPO suggested that *S. longipennis* should be added to the EPPO Alert List.

Where: *S. longipennis* is a North American species which had not been reported outside its native area, so far.

EPPO region: Germany (first incursions detected in 2010 in Berlin - in 2011, *S. longipennis* was found at several locations in the urban area of Berlin and in 27 sunflower fields in Brandenburg).

North America: Canada (Alberta, Manitoba, Ontario, and possibly other provinces), USA (Arizona, California, Colorado, Connecticut, Florida (not established), Idaho, Illinois, Indiana, Iowa, Kansas, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, North Dakota, Ohio, Oregon, Pennsylvania, South Dakota, Texas, Utah, Virginia, Wisconsin).

On which plants: *Helianthus annuus* (sunflower), and other *Helianthus* species such as *H. maximilianii* and *H. tuberosus* (Jerusalem artichoke). *S. longipennis* has also been observed on other Asteraceae (e.g. *Ageratina altissima*, *Ambrosia trifida*, *Smilax uvedalia*). *S. longipennis* is a morphologically variable species and its taxonomy is still uncertain (several varieties have been proposed and some elevated to species rank although this is still being debated). Recent studies have suggested that *S. longipennis* might be a complex of host-associated populations that are in the process of divergence (incipient species).

Damage: Larvae of *S. longipennis* bore tunnels in the pith of sunflower stalks. Depending on the number of larvae, injury may vary from a short tunnel to complete destruction of the pith. Large infestations can weaken the stalk and eventually lead to plant breakage. Secondary fungal infections (e.g. *Sclerotinia*) can be associated with larval feeding inside the stalk. However, in the major sunflower-producing regions of North America (North and South Dakota, Minnesota and Manitoba), *S. longipennis* is usually considered as a minor pest. Even when high percentages of plants are infested, larval feeding is confined to the pith, which acts a supporting structure and is not critical for plant nutrition. Studies carried out in the 1950s in Manitoba (CA) in fields where a high percentage of sunflower plants were infested concluded that feeding damage caused by larvae to the pith of the sunflower stalk had no apparent effect on head diameter, seed yield and quality.

Adults of *S. longipennis* are showy yellow tephritid flies (body length around 6 mm, wingspan of 13 mm) with bright green eyes. Wings have dark brown bands that form a fairly distinct F pattern near the wing tip. Larvae are creamy white and attain approximately 7 mm length at maturity.

Pictures can be viewed on the Internet:

<http://www.insectimages.org/browse/subthumb.cfm?sub=7967>

<http://bugguide.net/node/view/36888/bgimage>

S. longipennis has one generation per year. Female lay eggs (white, elongated, 1 mm long) in the stem tissue of young plants and larvae feed in the stem pith tissue. Larvae develop through 3 instars before pupation takes place. The insect usually overwinters as larvae in plant debris in the soil, but in regions such as Manitoba and Ontario (CA), observations have shown that larvae leave the plant at the end of summer and enter the soil where they overwinter as pupae.

Dissemination: Adults are reported as strong fliers but no data is available on their potential for natural spread. Over long distances, sunflower plants, soil and eventually cut flowers may transport the pest. Seeds are not considered as a likely pathway.

Pathway: Plants for planting, cut flowers of host plant species, soil and growing medium (no data is available to evaluate the possibility that tubers of *H. tuberosus* with adhering soil could transport the pest).

Possible risks: Sunflower (*Helianthus annuus*) is native to the Americas. In the EPPO region, it is an economically important crop which is widely grown for agricultural purposes (oil, seeds, animal feed, biofuel) and to a lesser extent for ornamental purposes. The cultivation of other *Helianthus* species, such as *H. tuberosus* (Jerusalem artichoke), is of much lesser economic importance. In North America, *S. longipennis* is usually considered as a minor pest but it may be possible that its populations are kept under economic threshold by natural enemies (e.g. parasitoids like *Coptera strauziae* (Hymenoptera: Diapriidae)) or insecticide treatments targeting other pests (e.g. sunflower beetle *Zygogramma exclamationis* (Coleoptera: Chrysomelidae), absent in Europe). Although, there are still uncertainties about the potential of damage of *S. longipennis* to sunflower crops in Europe (as very high populations are needed to cause stem breakage and lodging), it is desirable to avoid its spread within the EPPO region. It can be noted that in the EPPO region, sunflower crops are subject to a limited number of insect pests which usually do not require specific treatments and therefore, it is highly desirable to maintain this rather favourable situation.

Sources

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