

Seventh session
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WORKING PAPER SUBMITTED BY CUBA

UNLISTED PATHOGENS RELEVANT TO THE CONVENTION

1. Cuba finds it appropriate to include in the list of Phytopathogens the **Trips palmi Karny** and the **Frankliniella occidentalis**, agents whose description and assessment with regards to the following selection criteria is the following:

I. Trips palmi Karny

Description:

The adult **Trips palmi Karny** is a very small insect, approximately one millimetre long. Its colour ranges from pale yellow to white. Its wings join over its body drawing a dark line. The eyes are black. It characterizes by attacking leaves where they build up colonies with a large number of individuals. The colour of its elongated, slow-moving larvae ranges from white to yellow. It is a polyphagous agent that causes serious economic damage.

1. Agents known to have been bred, produced or used as a weapon:

None reported by literature so far.

2. Agents causing serious social and economic consequences and considerable harmful repercussions for human health, due to their impact on basic crops, which will be assessed in comparison to a combination of the following criteria:

This species has been reported in several areas latitudes striking numerous varieties of plants (polyphagous) which belong to different botanic families. Likewise, it can also feed on a great number of wild plants and cash crops, namely: cotton, tobacco, onion, egg plant, water melon, pumpkin, cucumber, pepper, potato, sweet potato, bean.

a) easily scattered (air, insects, water, etc.)

This insect spreads mainly by means of the flight of adults across air currents and on contaminated vegetables.

b) short hatching period and/or difficult early detection and identification;

Early detection and identification is hindered since they implant their eggs within the epidermis of the vegetable tissue, preventing first sight detection.

c) easily bred;

This agent can breed in laboratory conditions.

d) stability in the environment;

It is stable in the environment, primarily in dry and hot regions.

e) unavailable cost-efficient protection or therapy;

This insect has proved a high capacity of resistance to the use of chemical pesticides. At present, the use of biological pesticides has yielded the best results against it. However, it requires a very costly combined treatment.

f) low infection dose;

Its high capacity of breeding and adapting to a favourable environment allows for the use of low doses.

g) high infection capacity;

It has a great infection capacity, since a female can lay up to 200 eggs and up to 1,000 individuals have been found in a leaf of a cucumber plant.

h) short life cycle;

The life cycle of this insect has four phases: egg, larva, nymph and adult. Eggs take 5 to 11 days to hatch out, depending on site and temperature. The larval phase lasts from 4 to 9 days, the nymphal phase can last 3 to 7 days.

Subsequently, the nymph becomes an adult insect. The adult insect lives from 5 to 30 days. Dry and extremely hot days favour its multiplication.

Bearing in mind the phases of its life cycle, we can conclude that under optimum breeding conditions, the egg can become an adult insect in 12 days. However, the damage starts from its larval phase.

II. *Frankliniella occidentalis*

Description:

It is a yellow, brown or two-coloured insect, measuring 1.7 mm. It is a polyphagous agent that causes serious economic damage.

1. Agents known to have been bred, produced or used as weapon.

None has been reported in the literature so far.

2. Agents causing serious social and economic consequences and substantial detrimental repercussions for human health, due to their impact on basic crops, which will be assessed in comparison to a combination of the following criteria:

The damages caused by this insect are of two kinds: direct and indirect.

Direct damage:

a. Seepage of sap through the penetration of the insect's stylet, which tears the epidermic and parenchymatous tissues, causing diverse symptoms depending on the damaged organ and the physiological state of the vegetable, as well as the plate-coating of the fruits, falling of petals and growth disturbances.

b. inoculation of eggs in the tissues, provoking injuries that cause necrosis or warts.

The indirect damage is related to its capacity to spread the TSWV.

a) easily scattered (air, insects, water, etc.)

It easily spreads across long distances through air currents

and the transit of infected material.

b) short hatching period and/or difficult early detection and identification;

It is hard to identify inasmuch as there is a great number of species within this genus, so the anatomic characters of adult insects are required to accomplish definition of the species.

c) easily bred;

It can breed in laboratory conditions.

d) stability in the environment;

It is stable in the environment, primarily in dry and hot regions.

e) unavailable cost-efficient protection or therapy;

The control methods are hard to implement as it is necessary to develop combined means of control, based on the use of chemicals, biological and culture products. The most widely used chemicals are very expensive.

f) low infection dose;

When the temperature surpasses 25 degrees Celsius, a small amount of insects (25 adults) are able to breed a dense population due to their high procreative capacity and cutbacks in their life cycle term.

g) high infection capacity;

Starting with a low population and ample food sources, it is capable to wreak serious damage and proliferate swiftly.

Frankliniella occidentalis is known to transmit both the TSWV and the tobacco striated virus (TSV). The insect transmits the viruses semicontinuously.

h) short life cycle;

The life cycle is made up of the following phases: egg, larva I, larva II, prepupa, pupa and adult. Eggs hatch in 4 to 5 days, the larva phase lasts 3 to 4 days, larva II takes 5 to 8 days showing a great feeding activity, the prepupa stage lasts

4 to 6 days approximately, the pupa phase lasts an average 3 to 5 days and the adult phase from 60 to 120 days.

Its life cycle until adulthood lasts approximately 25 days at a temperature of 20 degrees Celsius and a Relative Humidity of 84%. However, damage starts since the larval phase.