Phytosanitary treatments
Traitements phytosanitaires

Disinfestation of production site against *Liriomyza sativae*

Specific scope

This standard describes a treatment programme aimed at eradication of *Liriomyza sativae* in those parts of the EPPO region where it is not established. It is recognized that not all treatments (active substances) will be available in EPPO countries and emergency procedures (special restrictions) may be required to permit implementation of such an intensive treatment programme. It is recognized that in implementing this intensive treatment programme maximum residue levels may be exceeded and as such the product(s) may not be suitable for consumption. A risk assessment of this programme will need to be made by individual countries in order to assess a particular situation.

Specific approval and amendment

First approved in 2009–09.

Introduction

Liriomyza sativae (Diptera: *Agromyzidae* – EPPO A2 list), the vegetable leaf miner, feeds on a variety of hosts with preference for Solanaceae and Fabaceae but is also found on other families (EPPO/CABI, 1997). Symptoms are white specks resulting from feeding and oviposition punctures and mines which are typically serpentine, tightly coiled or irregular in shape. Adult flies are 1–2 mm in length, and have a limited capacity to fly. Dispersal over longer distances occurs through movement of planting material. Details on the identification are given in EPPO Diagnostic protocol PM 7/53 *Liriomyza* spp. (OEPP/EPPO, 2005).

The pest is of major significance in many regions but has not yet been recorded in the EPPO region. Interceptions of the pest by EU countries has occurred (i.e. the Netherlands, the UK) but no outbreaks have been recorded. The pest is very difficult to control since it is resistant to many insecticides; often a combination of chemical, physical and biological[1] control seems to be most effective.

Commodities/regulated articles

Protected ornamental plants and cuttings; and vegetables such as aubergines, tomatoes, peppers, cucumbers, melons.

[1]See Note 5.

Pest[2]

Liriomyza sativae (LIRISA).

Treatment schedule

Treatment name: disinfestation of production site for ornamentals and vegetables.

Treatment type: chemical and physical.

Application: spray, fog and space treatment.

a. Schedule

(i) Apply *at least* one foliar spray per week.
(ii) Apply a space treatment at the start of the schedule and at the end of the schedule.

Week	Foliar spray (chemical)	Space treatments for control of flying adults
1	Active substance A	At start of schedule
2	Active substance B	
3	Active substance C	
4	Active substance A	At end of schedule

[2]*Liriomyza huidobrensis* and *Liriomyza trifolii* are not included in this standard because of the discussion about the quarantine status of both these species.

b. Active substances (see notes 1–4)

All active substances below are listed in Annex 1 of EU Directive 91/414/EEC.

Foliar sprays

Synthetic organic insecticides

Insect growth regulators (IGR) = cyromazine

Translaminar active substances = abamectin, milbemectin

Pyrethroids = deltamethrin, esfenvalerate

Space treatments

Pirimiphos-methyl, deltamethrin fogs, esfenvalerate.

Physical treatments

Physical methods can be effective in an IPM programme by suppressing the population: e.g. mass trapping with sticky traps and sticky ribbons.

Efficacy of treatment

Applications of insecticides according to this treatment schedule have been found to be successful in controlling *Liriomyza* spp. (control of *L. bryoniae*, *L. huidobrensis*, *L. trifolii*) on ornamental plants in the Netherlands. Monitoring should be carried out using yellow sticky traps.

Notes

1. For details of mode of action see Insecticide Resistance Action Committee (IRAC) Mode of Action Classification scheme (http://www.irac-online.org/)

2. The number of effective products approved for use against *L. sativae* in a given EPPO member country may be limited, especially for edible crops. It is therefore essential that they be used to maximum effect through accurate timing and targeting of each application.

3. These active substances should be used in rotation to prevent resistance. Choose 3 active substances (i.e. A–C) available from the list in your country. Opportunities for repeated foliar applications will however vary according to the label instructions and specific regulations in different countries.

4. The use of some active substance may not be permitted on edible crops in some countries.

5. Depending on the aim of the treatment biological control can be introduced as well. Often results are as good as applying insecticides alone for the control of leaf miners.

Predatory wasps = *Dacnusa sibirica* (DACNSI), *Opius pallipes* (OPIUPA), *Diglyphus isaea* (DIGLIS); Nematodes = *Steinernema feltiae* (NEAPGL).

References

EPPO/CABI (1997) *Liriomyza sativae. Quarantine Pests for Europe*, 2nd edn, 369–373. CAB International, Wallingford (GB).

OEPP/EPPO (2005) EPPO Standard PM 7/53 diagnostic protocol for *Liriomyza* spp. *Bulletin OEPP/EPPO Bulletin* 35, 271–273.

Enquiries

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Erratum

Bulletin OEPP/EPPO Bulletin **39** (2009), 480–481.

Since the publication of the EPPO Standard PM 10/14 (1) *Disinfection of production site against* Liriomyza sativae it has been brought to our attention that footnote 2 on page 480 is incorrect. This footnote should be deleted.

Reference

OEPP/EPPO (2009) Disinfection of production site against *Liriomyza sativae*. *Bulletin OEPP/EPPO Bulletin* **39**, 480–481.