Phytosanitary treatments
Traitments phytosanitaires

Treatment of plants for planting (cuttings) of *Euphorbia pulcherrima* for eradication of *Bemisia tabaci*

Specific scope

This standard describes a treatment programme aimed at eradication of *Bemisia tabaci* on poinsettia (*Euphorbia pulcherrima*) cuttings.

Specific approval and amendment

First approved in 2011-09.

Introduction

Bemisia tabaci (Gennadius) (Hemiptera: *Aleyrodidae*), the tobacco whitefly, is a highly polyphagous pest, capable of introducing and vectoring a wide range of plant viruses, many of which are not present in EPPO countries. Hosts include many protected ornamental and vegetable crops, and *B. tabaci* is widely distributed in Africa, Asia, Australasia, Central America and also in several South American countries and in the southern parts of North America. Some European countries remain free of the pest and maintain protected zones under Annex IB of the Plant Health Directive (2000/29/EC). There are also special requirements in Annex IV of the Plant Health Directive for plants of *Euphorbia pulcherrima* intended for planting, for appropriate treatments aimed at eradicating *B. tabaci*. Poinsettias are imported as cuttings and this remains the most prevalent pathway for the introduction of *B. tabaci* to ornamental nurseries in a number of EPPO countries.

Commodities/regulated articles

Poinsettia (*Euphorbia pulcherrima,* EPHPU) cuttings.

Pest

Bemisia tabaci (BEMITA).

Treatment schedule

Treatment name: eradication of *Bemisia tabaci* on Poinsettia cuttings
Treatment type: insecticide eradication programme
Application: dipping

Schedule

A leaf dipping technique to control different *B. tabaci* life stages (eggs, larvae and adults) on poinsettia cuttings, using non-chemical, physically-acting insecticides.

Active substances

Spraying oil (petroleum oil, 1 mL per 100 mL water) (see Note 1); Majestik (maltodexrin, 2.5 mL per 100 mL water); Agri-50E (alginate/polysaccharide, 300 µL per 100 mL); Savona (fatty acids, 2 mL per 100 mL water).

Treatment conditions

The best time to control *B. tabaci* is before the cuttings are propagated. Once the cuttings have enough roots to be self-sufficient, foliar sprays may be used to control whiteflies (refer to PM 10/13).

Efficacy of treatment

Buxton & Clarke (1994) showed that mineral oil dips were an effective treatment against all stages of *B. tabaci*. Sieburth *et al.* (1998) also found that a 1% concentration of paraffinic oil was most effective when applied to *B. tabaci* eggs for control of first stage nymphs and oil treatments also prevented the emergence of adults. In leaf dipping tests, Cuthbertson *et al.* (2006) found that spraying oil (petroleum oil; 1 mL per 100 mLwater) was the only compound to show potential against *B. tabaci* eggs, where 81% mortality was obtained. Spray Oil also produced high mortalities against second instar larvae (87%) and adults (100%), than any of chemical products tested. This was also confirmed by

Richter (2005) However, spraying oil is potentially phytotoxic (Richter, 2005; J. Buxton, ADAS, pers. comm.) and treatments can result in a significant reduction in percentage rooting of some varieties (see Note 2). Spraying oil produced the highest level of efficacy against *B. tabaci* eggs and adults of a range of tested products, but dipping using Majestik, Spraying oil and Agri-50 E all resulted in high second instar larval mortality (93%, 87% and 85.5%, respectively) (Cuthbertson *et al.*, 2009).

These dips should be relatively safe for non-target beneficial organisms, but care should be taken before introducing biological control agents.

Notes

1. Spraying oil can be applied using a dipping solution at a rate of 0.5 L or 1.0 L product per 100 L water, i.e. a 0.5% or a 1.0% solution. Whilst the 0.5% solution should be safe for all varieties, as a precaution, phytotoxicity tests should be carried out on individual poinsettia varieties before using the 1% solution.
2. Tests for phytotoxicity should be carried out on individual poinsettia varieties first before using spray oil at the higher (1%) rate.

References

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Enquiries

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