CONTENTS & MODULES

MODULE C15

WHITEFLIES

Biology and control

Date (05/11/2010)

WHAT IS…	Whiteflies are important worldwide pests of vegetable, cotton and ornamental crops, although they can also develop on a wide range of cultivated and wild plants. Two whitefly species are the main pests of tomato in Europe: *Bemisia tabaci* and *Trialeurodes vaporariorum*. *Trialeurodes vaporariorum* is widespread in all areas where greenhouse production is present, and *B. tabaci* has invaded, since the early 1990s, all subtropical and tropical areas. Biotypes B and Q of *B. tabaci* are widespread and especially problematic. *Bemisia tabaci* currently co-exists in many horticultural and ornamental crops with the greenhouse whitefly *T. vaporariorum.* Differentiating the two species is important, firstly because *Bemisia* is very good at transmitting some important viruses. Secondly, whether using natural enemies or insecticides for control, knowledge of the species present in the crop will help us to choose the best options.
WHY	Whiteflies and whitefly-transmitted viruses are some of the major constraints for European greenhouse production. For tomato crops the ranked importance of *B. tabaci* correlates with the levels of insecticide use, showing *B. tabaci* as one of the principal drivers behind chemical control. Confirmed cases of resistance to almost all insecticides have been reported. Integrated Pest Management based on biological control (IPM-BC) is applied in all European countries and has been identified as the strategy using fewer insecticides. Other IPM components include greenhouse netting and TYLCD-tolerant tomato cultivars. For population monitoring and control, whitefly densities and whitefly species are always identified.
HOW	The IPM-BC approach is mainly based on inoculative releases of the parasitoids *Eretmocerus mundus* and *Encarsia formosa* and/or the polyphagous predators *Macrolophus caliginosus* and *Nesidiocoris tenuis*. However, some limitations for wider implementation have been identified: lack of biological solutions for some pests, costs of beneficials, low farmer confidence, costs of technical advice, and low pest injury thresholds. The biology of whiteflies and the registered control methods

	vary according to the country, despite the ongoing process of standardisation of pesticide registration in the EU. To adapt the module to your own case you should: ► Specify the biology and species composition of whiteflies in your area ► Specify its importance as a pest ► Check the monitoring tools available in your country ► Check the control methods available in your country
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