1. Total number of living whitefly nymphs (Mean ± S.D.) in the different treatments, ean efficacy (%) of the treatments in reducing the number of living nymphs.

Treatment (a.s.)	**Dose** (ml/hl)	**No. living nymphs *** (m±s.d.)	**% efficacy** (mean)
Naturalis (*B. bassiana*)	125	410.5±57.6 b	72.3
Naturalis (*B. bassiana*)	250	303.8±8 b	79.5
Naturalis (*B. bassiana*)	300	254.5±16.2 b	82.8
Confidor 200SL (imidacloprid)	75	60.5±26.0 c	95.9
Untreated control	-	1,483.3±225.3 a	

rent letters indicate statistically significant differences (Student-Newman-Keuls-test: P<0.05).

2. Number of living adults per leaf (Mean ± S.D.) in the different treatments, and mean :y (%) of the treatments in reducing the number of living adults per leaf on the four sive assessment dates.

Treatment, dose (ml/hl)	**Assessment date** (dd/mm/yy) 18/05/04	21/05/04	25/05/04	01/06/04
living adults per leaf (m±s.d.)*				
Naturalis, 200	2.9±0.3	1.8±0.2 b	1.4±0.2 b	1.0±0.2 b
Naturalis+NuFilm, 200+100	3.0±0.6	1.3±0.3 bc	0.7±03 c	0.5±0.2 c
Naturalis, 300	3.1±0.5	1.4±0.4 bc	0.9±0.5 bc	0.6±0.4 c
Confidor, 75	2.7±0.2	1.2±0.3 c	0.5±0.2 c	0.4±0.2 c
Untreated control	2.8±0.2	2.9±0.3 a	3.6±0.6 a	4.0±0.4 a
fficacy (mean)				
Naturalis, 200		35.8	58.4	74.0
Naturalis+NuFilm, 200+100		53.2	78.8	87.7
Naturalis, 300		50.4	73.9	85.2
Confidor, 75		56.8	85.3	90.2

rent letters within the same column indicate statistically significant differences (Student-Newman-est: P<0.05).

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Efficacy of the technical grade product and commercial formulation based on *Paecilomyces fumosoroseus* for controlling whitefly under laboratory conditions

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The effects of the BCA *Paecilomyces fumosoroseus* strain FE 9901 on eggs and immature stages (N_1 and N_4) of whiteflies *Trialeurodes vaporariorum* and *Bemisia tabaci*, was assessed under laboratory conditions. The ability to produce infections was compared between the technical grade product of BCA (freeze dried blastospores) and the commercial formulation (freeze dried blastospores plus adjuvants) named as FUTURECO NOFLY™. The immature whitefly individuals were exposed to fungus on tomato leaf discs sprayed with water suspensions of both products. The fungus susceptibility of immature stages of both whitefly species was the same except in eggs, where *T vaporariorum* was more susceptible (70-80%) than *B. tabaci* (40-60%) and there were statistical differences between the formulation and the technical product in the capacity to infect *B. tabaci* eggs. The efficacy of *P. fumosoroseus* strain FE 9901 to produce mortality on N_1 and N_4 nymphal stages, was essentially the same (98-100%) when applied as either technical product (freeze dried blastospores), or as a commercial formulation. The selected adjuvants neither interfere with the mode of action of the fungus, nor have insecticide properties by themselves.

Key words: *Paecilomyces fumosoroseus*, biological control, bioinsecticide, blastospore, *Bemisia tabaci*, *Trialeurodes vaporariorum.*

Introduction

In the Canary Islands 18 different whitefly species have been reported (Hernández-Suárez, 1999). Of these, *Bemisia tabaci* (Gennadius) and *Trialeurodes vaporariorum* (Westwood) are major pests in commercial tomato greenhouses of the Canary Islands (Hernández-Suárez y Carnero, 2000). Majority of damage is caused by transmition of different virus species, including the Tomato Yellow Leaf Curl Virus (TYLCV), the Tomato Yellow Leaf Curl Sardinia Virus (TYLCSV), Cucurbit Yellow Stunting Disorder Crinivirus (CYSDV) and the Tomato Chlorosis Virus (ToCV) (Espino *et al.*, 2003; Wisler *et al.*, 1999; EWSN, Newsletter, 1999).

An increasing number of growers in the archipelago employ beneficial insects to control pests, but effective control of these whiteflies represent a handicap to the implementation of these type of pest management programs. Moreover, pest populations have also developed resistance to commonly used pesticides, even to the recently introduced ones.

The lack of effectiveness from traditional treatments, along with the implementation of ecological friendly control strategies, has lead to the research and development of new biological treatment alternatives. Within these practices, the use of Biological Control Agents (BCAs) is seen as an adequate alternative to synthetic pesticides. There are reported different entomopathogenic fungi able to produce infections on whiteflies (Lacey & Fransen, 1995)