Differential variation in host preference of *Aleyrodes proletella* (L) on some cauliflower cultivars

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The cabbage whitefly *Aleyrodes proletella* (L) has recently become a more serious pest within certain European brassicae crops. This study investigated the level of attractiveness of different cauliflower cultivars to this whitefly pest, aiming to identify varieties that could contain genes for controlling this whitefly in the future, useful for development of crop protection strategies.

Photo: E. Hernandez & A. Carnero

Greenhouse choice assays were carried out to obtain daily infestation rates of *A. proletella* on seven cauliflower cultivars (Matra, Freemont, Nautilus, Pierrot, Arbon, Mayfair and Picasso). Ten replicates of these 48 day-old cultivars were placed in a insect-free greenhouse in a randomised design at 20.6º ± 0.1ºC and 68.1 ± 0.1 % r.h. Plants were equidistant from adjacent pots so that their leaves did not touch each other for the duration of the experiment.

Three days after, plants were all infested by releasing *A. proletella* adults from a stock lab-colony. After seven days, the number of adults was counted daily *in situ* on all leaves of all plants until the emergence of new adults. The relationship between the percentages of infested plants (y) and the number of adults (x) was predicted by a regression analysis where z = -ax; z = ln[1-(y/100)]. From the regression lines it was possible to estimate the number of adults needed to infest 50% and 90% of plants for each cultivar.

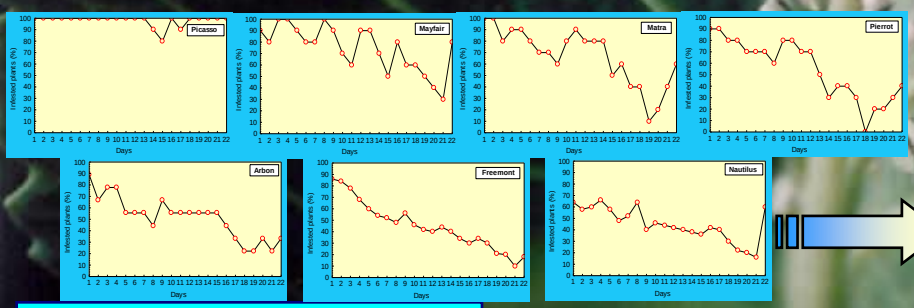

Fig. 1. Daily variation of infested plants (%)

Cauliflower cultivar	Infested plants (%) (Mean ± SE; n = 22)
Picasso	97.3 ± 1.2 **a**
Mayfair	75.4 ± 2.6 **b**
Matra	67.5 ± 3.0 **c**
Pierrot	55.6 ± 1.6 **d**
Arbon	51.4 ± 1.9 **d**
Freemont	47.3 ± 2.2 **d**
Nautilus	46.8 ± 3.4 **d**

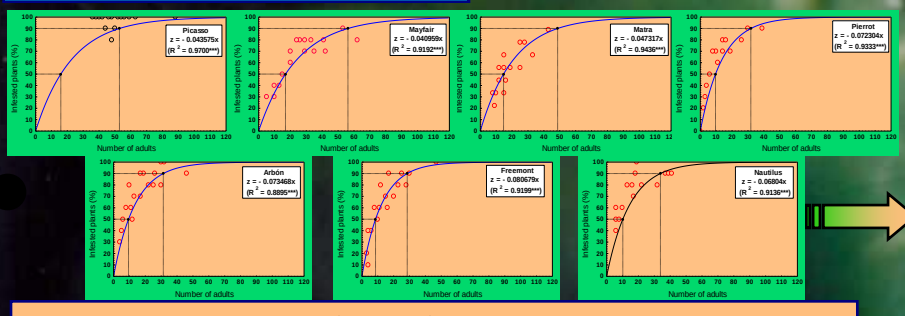

Fig. 2. Estimated percentages (p) of plants infested by *A. proletella* adults. Open circles are observed values.

Cauliflower cultivar	Estimated number of insects needed to infest 50% of plants	90% of plants
Picasso	16	53
Mayfair	16	56
Matra	15	49
Pierrot	10	32
Arbon	9	31
Freemont	9	29
Nautilus	10	34

These results suggest the importance of studies focused on plant-insect interactions on different cultivars of a certain crop, because of the variability of the insect-pests behaviour according to the plant characteristics. In our study, "Picasso" and "Nautilus" were the most and less attractive cauliflower cultivars, respectively, in terms of the percentage of infested plants. Moreover, further studies are needed aiming to identify useful genes for controlling this whitefly in brassicae plants in the future. A better understanding of the dynamics of insect–plant interactions may be useful and for coping with the threatening loss of biodiversity.

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