

Resistance to Aphis gossypii in Spanish Melon (Cucumis melo)

M. Pitrat, C. Maestro, C. Ferrière, M. Ricard  
Institut National de la Recherche Agronomique, BP 94,  
84140 Montfavet, France

J. Alvarez  
Servicio de Investigacion Agraria, D.G.A.  
Apartado 727, 50080 Zaragoza, Spain

Resistance to the melon aphid Aphis gossypii has been described in muskmelon lines from India and from Far East (2, 3).

A single dominant gene symbolized by Vat (Virus Aphid transmission resistance) (1, 5) controls the resistance to colonization of melon by A. gossypii by non-acceptance and antibiosis mechanisms and resistance to viruses transmission by this aphid (4).

We report here the discovery of a resistance to the melon aphid in some cultivars of melon from Spain. The inheritance of this resistance is analyzed.

The study of a collection of 72 melon landraces from the Spanish Horticultural Germplasm Bank has shown the existence of resistance to A. gossypii in 3 accessions. 'Ariso' from Ibiza is early maturing with orange flesh; 'Invernizo' from Malaga is very late, in the 'Tendral' type (dark green skin, white flesh, oval, fruit weight about 3.5 kg); 'Escrito' from Murcia is early with green-yellow skin, orange flesh, oval, fruit weight is about 2 kg.

The resistant plants from the spanish lots were selfed and their progenies tested and crossed with 'Védrantais' (susceptible) and 'Margot' (resistant 'Cantaloup Charentais' lines with the Vat gene). The plant resistance was tested by non-acceptance assay (2).

According to the results in  $F_1$  and  $F_2$  progenies for 'Ariso' x 'Védrantais' (Table 1), a single dominant gene controls this resistance. Results of the 'Ariso' x 'Margot' progenies indicate that resistance in 'Ariso' is controlled by the same gene (Vat) than in 'Margot'.

In 'Invernizo', resistance is not very clear cut and there are often more adult aphids remaining on the plants and more larvae than in 'Margot'. But in the  $F_2$  'Invernizo' x 'Margot' we found no really susceptible plants (as 'Védrantais'). We conclude that 'Invernizo' carries the Vat gene but that the expression of the gene is not very good in this cultivar type. And so in the  $F_2$  'Invernizo' x 'Védrantais' we may have underestimated the number of resistant plants which gives a ratio resistant : susceptible different from 3:1.

Resistance to viruses transmission by A. gossypii has been studied. 'Ariso', 'Invernizo' and 'Escrito' are all resistant to Watermelon Mosaic Virus 2 and Zucchini Yellow Mosaic Virus transmission.

Table 1. Results for the behavior to Aphis gossypii after non acceptance tests in 3 different spanish muskmelons cultivars and the F<sub>1</sub> and F<sub>2</sub> with 'Védrantais' (aphid susceptible) and 'Margot' (aphid resistant).

	Resistant	Susceptible		chi square	
				value	probability
Ariso	148	0			
F <sub>1</sub> Ariso x Védrantais	20	0			
F <sub>2</sub> (Ariso x Védrantais) ⊕	234	66	3:1	1.44	23%
F <sub>1</sub> Ariso x Margot	36	0			
F <sub>2</sub> (Ariso x Margot) ⊕	201	0	15:1	13.4	<0.1%
Invernizo	30	0			
F <sub>1</sub> Invernizo x Védrantais	10	0			
F <sub>2</sub> (Invernizo x Védrantais) ⊕	193	110	3:1	20.65	<0.1%
F <sub>1</sub> Invernizo x Margot	20	0			
F <sub>2</sub> (Invernizo x Margot) ⊕	280	0	15:1	13.87	<0.1%
Escrito	139	0			

#### Literature cited

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