Proceedings of the XLIX Italian Society of Agricultural Genetics Annual Congress
Potenza, Italy – 12/15 September, 2005
ISBN **88-900622-6-6**

Poster Abstract – D.44

A SELECTED LINE OF MELON (Alban-12) RESISTANT TO *FUSARIUM OXYSPORUM* F. SP. *MELONIS*, RACE 1-2

F. CICCARESE, O. LONGO, D. SCHIAVONE, M. JAUPI

Department of Biology and Plant Pathology , University of Bari, Via G. Amendola 165/A, 70126 Bari (Italy) - fciccare@agr.uniba.it

melon, resistance, Fusarium oxysporum f. sp. melonis, physiologic race, biodiversity

Fusarium-wilt by *Fusarium oxysporum* f. sp. *melonis* causes heavy losses in all melon cultivation areas. Use of resistant cultivars is the most effective control method of the disease. At present, four physiologic races of the pathogen signed as 0, 1, 2 and 1-2 and two resistant host genes (*Fom-1* and *Fom-2*) are known. Nowadays melon hybrids F_1, characterized by resistance to races 0, 1 and 2, are grown. Resistance factors against race 1-2 of *F. oxysporum* f. sp. *melonis* are not available. In screenings for resistance to Fusarium-wilt carried out on numerous accessions and lines of *Cucumis melo* collected directly from farmers in Albania, one line (Alban-12) showed good resistance characteristics with a low disease severity index (Ciccarese *et al.*, 2002). Progenies obtained by self-fertilized single plants of selected line were tested for resistance toward each race of pathogen. Artificial inoculation was made in glasshouse at 26±2°C with isolates belonging to race 0, 1, 2 and 1-2 of *F. oxysporum* f. sp. *melonis* by dipping, for 2-3 minutes, roots of seedlings in a fungal suspension (4×10^6 CFU/ml). Disease severity on each plant was assessed according on empirical scale of values ranging, from 0 to 4 in which 0 = healthy plant and 4 = dead plant or plant with extremely severe symptoms. Severity values were used in order to calculate the index of McKynney. Results pointed out a higher level of resistance towards *F. oxysporum* f. sp. *melonis*, race 1-2, of Alban-12/S_1 than parent S_0. The level of high resistance to race 1-2 of *F. oxysporum* f. sp. *melonis* was confirmed in test carried out on the progenies obtained by self-fertilization of selected single plants. In particular, disease severity index observed on Alba-12/S_2 line was 1,8%. If the polygenic base of this resistance will be confirmed by further studies, Alban-12 line represents a promising resource for Fusarium-wilt control in consideration of high capacity of *F. oxysporum* f. sp. *melonis* in differentiating new physiologic races.