Proceedings of the 52nd Italian Society of Agricultural Genetics Annual Congress
Padova, Italy – 14/17 September, 2008
ISBN **978-88-900622-8-5**

Poster Abstract – A.31

MARKER-ASSISTED SELECTION OF THE TYLCD RESISTANCE GENES *Ty-1* AND *Ty-2* IN TOMATO

BARBIERI M.*, ACCIARRI N.**, SABATINI E.***, ACCOTTO G.P.****, SARDO L.****, PECCHIONI N.*

*) Dipartimento di Scienze Agrarie, Università di Modena e Reggio Emilia (Italy)
**) C.R.A. - ORA Unità di Ricerca n° 13 per l'Orticoltura, Monsampolo del Tronto, AP (Italy)
***) C.R.A. - ORL Unità di Ricerca n° 12 per l'Orticoltura, Montanaso Lombardo, LO, (Italy)
****) Istituto di Virologia Vegetale, CNR, Torino (Italy)

tomato, virus, Ty-1, Ty-2, marker-assisted selection

Tomato yellow leaf curl disease (TYLCD) is a devastating viral disease worldwide. Two species have been associated with epidemics in Italy: *Tomato yellow leaf curl virus* (TYLCV) and *Tomato yellow leaf curl Sardinia virus* (TYLCSV). Genetic resistance is the most economic and sustainable way to control this disease. Several sources of resistance have been discovered in wild tomato species. However, classical selection has been proven to be slow and difficult. This study is focused on the development of traditional Italian varieties of tomato resistant to TYLCD. In order to investigate the effectiveness of two of such resistance loci, we screened lines LA3473 and H24, carrying respectively *Ty-1* and *Ty-2* genes, against TYLCD isolates collected in tomato production regions in the south of Italy. *Ty-1* gene has shown to provide tolerance to TYLCSV isolate whereas *Ty-2* has proven to be fully effective against TYLCV isolate. Two CAPS markers linked to each gene, TG178 and TG436 for *Ty-1*, TG105A and C2_At5g25760 for *Ty-2*, were screened for their utility in marker-assisted breeding programs. F2 populations from crosses between resistant and susceptible lines were marker-analysed and selected F3 progenies were phenotyped for their resistance.