TOMATO TRANSFORMATION WITH R1 GENE OF RESISTENCE TO PHYTOPHTHORA INFESTANTS

L. FAINO*, M. DE MARTINO*, C. GEBHARDT**, D. CARPUTO*, L. FRUSCIANTE*, M.R. ERCOLANO*

*) Department of Soil, Plant and Environmental Sciences  
**) Max-Planck Institut für Züchtungsforschung, Carl von Linné Weg 10, 50829 Köln, Germany

Tomato (*Lycopersicon esculentum*) is one of the most important vegetable crop in Italy. During its cultivation is challenged from several pathogens. Serious damages often are caused by oomycete *Phytophthora infestans* under greenhouse conditions. In tomato germplasm several resistance genes to late blight have been identified. However the control of this disease is mainly conduct by chemical treatments because they are not able to full protect the plants. Two tomato cultivars susceptible at *P. infestants* were transformed with *R1* gene that in potato confer resistance to this disease. Six experiments of transformation were carried out, utilizing as explants young cotyledons. In total 54 plants were regenerated with an average of about 9 plants per experiment. Out of 13 kanamycin resistant regenerated 8 plants showed the gene of interest. The RT-PCR analysis has evidenced the expected PCR product of 1,2 kb in all the 8 lines. Southern blot analysis to detect gene copy numbers is in progress. Moreover genetic studies and resistance tests will be performed in T1 generation to assess the gene expression stability.