

## **ANTIOXIDANT CONTENT IN TOMATO VARIETIES AND ECOTYPES**

MINUTOLO M., AMALFITANO C., CHIAIESE P., ERRICO A.

Department of Soil, Plant, Environmental and Animal Productions Sciences, University of Naples Federico II, Via Università 100, 80055 Portici (Italy) - minutolm@unina.it

### *Ascorbic acid, polyphenols*

Secondary metabolites play an important role in plant metabolism although they are produced in a low amount. Among secondary metabolites, antioxidants such as ascorbic acid and polyphenols provide selective advantages such as weeds control or resistance towards several pathogens. Tomato (*Solanum lycopersicum*) is widely cultivated all over the world for food purpose and in addition it is rich in polyphenols and ascorbic acid.

The final purpose of this study is pointing out the genetic control mechanisms underlying different antioxidant accumulation patterns therefore we began to evaluate ascorbic acid and polyphenol accumulation in leaves of different tomato genotype. Particularly, we have focused on the following Italian genotypes: Ventura Fiaschetto selection, Belmonte, San Marzano Nano, Principe Borghese, Tondino Maremmano and Ponderosa (kindly provided by SemiOrto Sementi, <http://www.semiorto.com>), and Piennolo, Tondo Giallo and Maggese (from local farmers of Campania).

Our results showed that total ascorbic acid (reduced plus oxidized forms) is differently accumulated in tomato genotypes. The lowest amount was in Tondino Maremmano variety which, in contrast, showed to accumulate the highest total polyphenol amount than the others. Among genotypes tomato Ponderosa variety showed to accumulate a high amount of both antioxidants.

In conclusion, ascorbic acid and polyphenol accumulation in tomato leaf is genotype dependent. Furthermore, efforts will focus on ability of these varieties to contrast or tolerate biotic stresses, and through transcriptomic approach to add insights toward strategies for breeding tomato resistance and quality.