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Poster Abstract – A.32

DEVELOPMENT OF NUTRITIONAL AND AGRONOMIC INDEX AS TOOL TO SELECT NEW TOMATO HYBRIDS

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Fruits and vegetables play a significant role in human nutrition. Among vegetables, tomato is the most important both for its large consumption and for its richness in health-related food components. This vegetable is an important component of traditional Mediterranean diet, but also of other diets. There is evidence that regular tomato consumption decreases the incidence of chronic degenerative diseases, such as certain types of cancer and cardiovascular diseases. Epidemiological findings confirm that the observed health effects are due to the presence of different antioxidant molecules such as carotenoids, particularly lycopene, ascorbic acid, vitamin E and phenol compounds, particularly flavonoids. For long time, fresh market tomato breeders have improved yield, resistance to diseases, and fruit aspect but have lacked clear targets for improving fruit quality.

In the last few years, one of the main objectives in tomato breeding programmes was selecting genotypes with high nutritional value. In sight of this, seventeen tomato lines were analyzed for nutritional quality proprieties and agronomic traits. They comprised seven parentals and ten derived tomato hybrids. In particular, from the nutritional point of view, 8 components contributing to the healthy quality of tomato (i.e., lycopene, β-carotene, other carotenoids, flavonoids, phenolic acids, vitamins C and E, dry residue) were assessed. From the agronomic point view, performance as total yield and number of commercial fruits, were analyzed. Selection of hybrids was based on the development of two indices: a tomato nutritional index, denominated IQUAN, and a agronomic index that considered also the of presence resistance genes in analyzed lines. Combining the two index, two hybrids (MR 48 and MR 47) merit high interest as tomato genotypes with considerable amounts of vital antioxidants and an acceptable commercial production.