

## ACIDITY AND PIGMENT CHANGES IN TOMATO (*LYCOPERSICON ESCULENTUM* MILL.) FRUIT RIPENING

A. Chiesa, M. Sackmann Varela and A. Frascina

Facultad de Agronomía, Universidad de Buenos Aires, Av. San Martín 4453, C.P. 1417, Buenos Aires, Argentina

Postharvest losses of vegetables decreases the supply in the market. In Argentina, the lack of continuous refrigeration systems increases these losses. As tomato is a perishable vegetable with a high consumption in our country, it is important to understand physical and chemical aspects involved in tomato fruit ripening, in order to design technology strategies for decreasing such postharvest losses.

Tomato, as a climateric fruit, shows a rapid increase in the synthesis of ethylene at the beginning of the ripening process. Tomato ripening is a regulated process during which color, flavor, aroma and texture all change in a coordinated manner. Tomato fruit color is an important quality attribute, and it is the initial aspect that consumers evaluate. Fruit color is related to the lycopene and chlorophyll content changes during the ripening process. Stage of maturity at harvest determines the acidity and the color of fully ripened fruit.

This study analysed the influence of storage temperature, type of hybrid and maturity stage at harvest on the pH, titratable acidity and pigment (lycopene and chlorophyll) changes during fruit ripening.

Mature-green, turning and red ripe tomato fruit, greenhouse-grown, of traditional and long shelf life hybrids were harvested from a local farm. Fruits were stored at 10°C and 20°C during 35 days. Titratable acidity, pH, lycopene and chlorophyll contents were measured weekly by volumetric, potentiometric and spectrophotometric methods, respectively. A completely randomized block design and simple linear regression models were used.

During tomato ripening, the chlorophyll content was maximal at picking time in mature-green fruits and decreased as fruit ripened. A rapid increase in the lycopene content accompanied the ripening process, and it was affected by the maturity stage at harvest and was higher at the higher storage temperature (20°C). At the end of the storage period, a high amount of this pigment was observed in those fruits harvested red ripe. Traditional hybrids had lower lycopene content than the long shelf life hybrid. Maturity stage at harvest affected the titratable acidity and pH of the fruit. For these parameters, differences between hybrids was again observed. Storage temperature affected the ripening process but did not modify the titratable acidity and pH values.

Supported by grant UBACYT AG-060



**THE BRITISH LIBRARY**

The document has been supplied by, or on behalf of, The British Library Document Supply Centre, Boston Spa, Wetherby, West Yorkshire LS23 7BQ United Kingdom

**WARNING**  
Further copying of this document (including storage in any medium by electronic means), other than that allowed under the copyright law, is not permitted without the permission of the copyright owner or an authorized licensing body.

N° 59.  
MESSAD. N.  
*Agonomie*

3