

Abstract:

Nutrient value, colour, taste and flavour of tomato and tomato products are determined by their lycopene, beta-carotene, and ascorbic acid composition. Therefore the quality of tomato yields or products can be well characterised by their antioxidant content or rather by their antioxidant composition. In the following years lycopene will presumably reach the greatest importance of all antioxidants. Tomato and tomato products are considered to be the most important lycopene sources of the human body.

The aim of the present study was to evaluate the effects of different varieties, cultivation technologies (forcing, open-field with supporting-system, open-field with processing varieties) and the connected ecological conditions on the set of lycopene content. Our survey covered the analysis of different harvesting times as well. Lycopene content of tomato turned out to be extremely various (3.93-17.1 mg/100g) in our survey. We found that one of the most important determinants of lycopene content was variety. Lycopene content of the processing varieties (determined varieties) was significantly higher than it was in the others. Trends of environmental factors, especially light and temperature trends during the phase of burgeoning and ripening phases were other important determinants of the lycopene content. Maturation degree is very important for consumers, in the case of tomato items grown by forcing or on open-field with supporting-systems, when tomato is freshly eaten. Harvesting time is basically connected to ecological parameters. In the case of processing varieties delayed harvest can increase lycopene content, but it can cause the decrease of many other factors (softening).