GREENHOUSE TOMATOES FLAVOR AS INFLUENCED BY TECHNOLOGICAL INPUTS

Sima Rodica, Al. S. Apahidean, Maria Apahidean, D. Măniuțiu, V. Singureanu, I. Paven

University of Agricultural Sciences and Veterinary Medicine, 3-5 Mănăștur Street, Cluj-Napoca

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SUMMARY

There are many complex factors that determine the flavor of tomato fruit. The intensity of flavor is determined largely by the amount of sugar, the organic acid content and the volatile compounds composition. Typically, human taste find best flavor associated with high soluble solids and soluble solids/titratable acidity ratio. High sugar and high acid contents generally have a favorable effect on taste. Commercial fresh tomato production is not always geared to produce the most flavorful fruit, since other economic concerns must also be considered. In addition to primary factors (such as tomato variety selection, system of culture and growing conditions), proper plant nutrition can also positively contribute to tomato flavor.

The research followed to establish the influence of fertilization on some tomatoes fruit flavor characteristics (soluble solids, total sugar, titratable acidity) and was organized as a poly-factorial experience with three experimental factors: 1. system of culture: soil and organic substrate 2. basic soil fertilization with two treatments (simple doze and double doze); 3. additional fertilization consisted of radicular and radicular + foliar treatments. Cronos F1 was used as biological material.

Soluble solids content (SSC) is of prime concern in fresh tomatoes due to the important contribution of sugars and acids to the overall flavor of the fruit. Likewise, an increase in SSC would also improve the nutritional value of tomatoes. The doubling of basic fertilization dozes increased the SSC in case of soil culture from 6.05% to 6.55%. Not the same effect was recorded in case of organic substrate culture where the SSC values (as main component of dry matter) were lesser maybe because of the higher obtained yields and due to the reverse correlation between the yield and dry matter content of fruits. Fruit development in tomato is often accompanied by the depletion of foliar potassium to the detriment of both yield and fruit quality (Chapagain, 2004). In attempt to restore high foliar levels of K in the greenhouse tomatoes a high rate K foliar fertilizer (10:5:26) was weekly applied. Significant response to high K rate of the foliar fertilizer was observed for total sugar content of fruits in case of both systems of culture. It is also well known that higher acid content is related to a superior fruit flavor in tomato (Panagiotopoulos, 1995). Fruits titratable acidity was increased with the foliar fertilization and mainly due to the high K rate of applied fertilizer.

BIBLIOGRAPHY