

Study on the physiology of tomato quality characteristics

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SCOPE

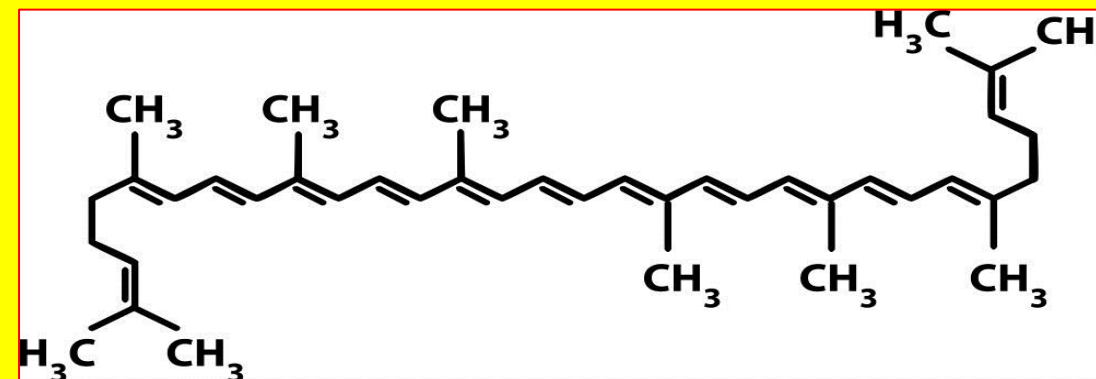
Studying the genetic variability in local cultivated populations will determine the accumulation of additional knowledge on how the shape, size, quality and nutritional value of tomatoes evolve. Efforts to conserve the variations of the species *Solanum lycopersicum* and other wild forms, in their area of origin, are a priority. Local tomato populations are selected and adapted to the zonal environmental condition, they are genetic sources with the potential to incorporate valuable traits in the following improved cultivars.

METHODOLOGY

The research methodology used was specific to plant physiology studies with direct implications for the biochemical characterization of plants. The varieties were studied between 2021-2024, after an experience placed according to the randomized block method with three repetitions. The experimentation was carried out under greenhouse conditions with a controlled environment. Planting was carried out using five-week-old seedlings of the same vigor and size.

RESULTS AND DISCUSSION

The experimental results on the variability of some quality attributes in the studied tomato cultivars confirm the hypothesis that local populations have a superior quality to improved forms, especially in terms of the content of nutritional compounds, antioxidants and phenolic compounds. However, they are sensitive to the storage time after harvest and the firmness of the fruits, therefore they cannot be stored for a long time and are not recommended for long-distance transport and successive handling.



Lycopene molecular formula

CONCLUSIONS

In terms of fruit firmness as an index of their quality, the genotypes had values ranging between 72.50 g/cm² and 145.25 g/cm², with a variation amplitude of 72.75 g/cm² and a high population variability (30.45%). The average carbohydrate content of the fruits recorded values ranging between 4.5% and 5.45%, with a variation amplitude of 0.95%, against the background of a medium variability between genotypes (9.95%). The highest share is presented by genotypes with values of this character of 5-5.3%. In terms of lycopene quantity, the genotypes had values ranging between 0.0262 mg/g and 0.0411 mg/g, with a variation amplitude of 0.0149 mg/g and a low population variability (2.52%).

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