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Factors Affecting Tomato Yield in Cuba

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Opinion

In Cuba, tomato cultivation is a priority in the agricultural sector, as it is one of the vegetables most consumed by the population and an important source of raw material for the industry. It occupies a production of 5,517 thousand metric tons, in an area of 39,840 hectares [1] and an average yield of 13.83 t ha⁻¹, one of the lowest in Central America (34 t ha⁻¹) and of the world (37 t ha⁻¹) according to the statistics of [2]. The production of such a precious vegetable is not capable of supplying the demand of the population due to the low yields obtained, fundamentally due to the incidence of biotic and abiotic factors, which determine the decrease in yields and low quality of the crops [3]. Despite the great efforts devoted to tomato cultivation in Cuba, the yields obtained are still very low, due to the unfavorable climatic conditions that prevail in the country. On the other hand, the susceptibility of commercial cultivars to diseases of viral (begomovirus), fungal (Oidium, Botrytis, Alternaria, Mildiu, etc.) and bacterial (Pseudomonas, Erwinia and Clavibacter) origin, as well as infection by nematodes, mainly various species of Meloidogyne [4-5]. In recent years, the effect of abiotic factors on crops has become highly relevant, mainly due to the environmental effects associated with climate change [6-7], such as:

- High temperatures are one of the causes of the low yield of the crop in Cuba. Due to these climatic conditions, tomato cultivation in Cuba is fundamentally limited to the months of September to February, since in non-optimal periods fruiting, yield and quality of the fruits are affected.
- Drought is one of the causes of low crop yield. This stress occurs in plants in response to low water availability in the soil. What causes affections to the tomato in each aspect of the growth of the plant that involves the anatomy, morphology, physiology and biochemistry?
- The salinity of the soil that affects the growth and production of the tomato crop. Salinity stress limits the development of plants, by negatively affecting various biochemical reactions and physiological processes, as well as limits germination, the absorption of water by the root, which affects the growth of all plant organs.

References

- National Statistics Office of Cuba (ONEI) (2016). Area harvested and in production of selected crops from non-sugarcane agriculture. state sector. Digital version.
- FAOSTAT (2015).
- Bergougnoux V (2014) The history of tomato: from domestication to biopharming. *Biotechnology advances*, 32(1): 170-189.
- Gomez O (2009) Genetic improvement of tomato for resistance to tomato yellow leaf curl virus. *Plant Health*, 13(1): 43-44.
- Ramkisson A, Francis J, Bowrin V, Ramjagathesh R, Ramsabhag A, et al. (2016) Bio-efficacy of a chitosan based elicitor on *Alternaria solani* and *Xanthomonas vesicatoria* infections in tomato under tropical conditions. *Annals of Applied Biology* 1: 1-10.
- Florido M, Bao L (2014) Tolerance to stress due to water deficit in tomato (*Solanum lycopersicum* L). *Tropical Crops* 35(3): 70-88.
- Florido M, Alvarez M, Lara R, Plana D, Valera M, et al. (2002) Morphoagronomic and biochemical characterization of 20 tomato accessions (*Lycopersicon* spp). *Tropical Crops* 23(4): 61-69.