

**THE INFLUENCE OF LOW AND HIGH TEMPERATURES ON THE GERMINATION OF TOMATO SEEDS (LYCOPERSICON ESCULENTUM MILL.)**

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**Abstract**

The production of seedlings and the very process of germinating seeds is certainly significant if it is taken into account that a maximum of about 25,000 plants are planted per ha, i.e. the large number but also the highest germination of the seeds, and later the condition of the seedlings has a great influence on the safety of production. Widespread vegetable crop tomato (*Solanum lycopersicum* L.) in Serbia with about 20,000 ha. High-temperature stress can be achieved by several mechanisms, and one of those mechanisms is the so-called seed hardening, which improves the germination and adaptability of the seeds. The effect of high temperatures on the development of vegetables that are sensitive to high temperatures affects the morphology, but also the biochemical and physiological content of the tomato plant. According to the researchers, the impact of extreme temperature as well as high temperature variations can damage the intercellular interactions necessary for tomato growth. The study involved the seeds of two tomato varieties; ox heart and apple. for different times of treatment at + 60 °C for 10 min, 20 min, 30 min and 10 hours and at -16 °C the seeds were treated for 3.5 and 10 days. The best results in seed germination were achieved in 20 minutes at 60°C in both varieties. At a temperature of -16 degrees, the best result was achieved with both varieties after 3 days of treatment. The seeds are uniform in size and without damaged seeds. The seeds were placed on two layers of Whatman filter paper in Petri dishes. 10-15 ml of deionized water was added to the Petri dishes. Treatment of seeds with high and low temperatures has a positive effect on the germination of tomato seeds.