EFFECT OF TOCOPHEROL-BASE PREPARATION ON TOMATO SEEDS *(Solanum Lycopersicum)* GERMINATION UNDER SALINITY CONDITION

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The salt environment while vegetables growing is one of the most significant stress in terms of irrigation and gradual soils degradation, as well as,under the intensive technologies of covered soil, active irrigation with highly mineralized water. Soil salinity leads to significant loss of crop yields. Salinity of the soil causes a violation of the osmotic and ionic homeostasis of plant cells, the accumulation of toxic substances, which negatively affects seed germination and plant morphogenesis. Tomato (Solánum lycopérsicum) is very sensitive to saline vegetable culture. One of the methods of increasing the salt resistance is hardening to salinity by pre-sowing seed and vegetative part of plants treatment by growth stimulants. Vitamin E (α-tocopherol) has powerful antioxidant properties due to its ability to react with active radicals and affect the enzymesactivity. Somereports showed the effectiveness of tocopherol exogenous application while beans, flax, wheat, ricecultivation. Therefore, the aim of the work was to determinethe peculiarities of the influence of α-tocopherol on the biometric indexes of tomato seedlings under salinity conditions.

The research was carried out on tomato seeds of the San'ka variety (fast-riping, low-growth and determinant variety). The tomato seeds of the control variant were sprouted in an aqueous medium in Petri dishes for 10 days. Seeds of experimental variants were sprouted with 0.1 M sodium chloride solution (osmotic pressure 440 kPa). The tomato seeds of the experimental variants were treated with a solubilized preparation α-tocopheryl acetate (α-TPh) based at concentrations (0.001, 0.01, 0.1, 0.5 g / l).

Tomatoes seeds growing on salt environment led to a probable decrease of its germination due to the created conditions of water potential depression and limitation of water flow as a factor of germination activation. Thus, the germination of tomato seeds increased by 6.5 and 14.5%, and was approximated to the germination of seeds that were growing in the aqueous medium, under the effect of α-TPhat concentrations (0.001 and 0.01 g / l), respectively. However, higher concentrations of α-TPh on the contrary inhibited seed germination.

In the experiment, it was found that α-TPh an increased in the raw weight of seedlings and roots of tomatoes. α-TPh at concentrations of 0.001 and 0.01 g / l increased the raw weight of roots and seedlings by 15.5 and 27.2% respectively. A similar effect was observed at dry weight calculation under α-TPh influence, which increased by 19.6% in the seedlings, and by 29.0% in roots, in comparison with salt control tomatoes. It should be noted, that higher concentrations of α-TPh (0.1 and 0.5 g / l) did not stimulate the accumulation of both raw and dry weight of seedlings and roots of tomatoes.

One of the reasons for growth inhibition and developmental delay is the accumulation of Na^+ and Cl^- ions in the germ of germinating seeds and the realization of their toxic effects on cells. The α-TPh-based preparation contributed to the weakening of thetoxic metabolite affect, and, as a consequence, indirectly stimulated growth processes.

The salt stress caused a slowing of the cells stretching and reduced the length of the seedlings by 22%, and the roots - by 24.8% compared to the plants sprouted on the aqueous medium. The length of 10-day tomatoes seedlings and roots increased under pre-sowing α-TPh(0.001 and 0.01 g / l) treatment. While higher concentrations of the α-TPh significantly inhibited the growth of seedlings and roots and reduced the length of both seedlings and roots of tomatoes on the contrary.

Thus, pre-sowing treatment of tomato seeds with a help of α-TPh-based preparation at concentrations of 0.001-0.01 g / l increased laboratory germination, rised the growth rate of tomatoes in the early stages of germination, and enhanced its resistance to chloride salinity.