

**STUDY OF COLD RESISTANCE IN TOMATO PLANTS**

**Shokh Svitlana,**

Candidate of Agricultural Sciences  
associate professors

Bila Tserkva National Agrarian University  
m. BilaTserkva, Ukraine

**Lugovaya Anna,**

Candidate of Agricultural Sciences  
associate professors

State Biotechnological University  
Kharkiv, Ukraine

**Shubenko Lidiia,**

Candidate of Agricultural Sciences  
associate professors

Bila Tserkva National Agrarian University  
m. Bila Tserkva, Ukraine

**Abstract.** Cold tolerance of tomato is the main desirable trait in the context of climate change. Fluctuations in temperature conditions and threats of return frosts negatively affect the development and yield of tomato plants. Studies of cold tolerance are quite valuable and promising in plant breeding.

**Keywords:** tomato, cold resistance, low temperatures, plant resistance, temperature minimum.

Cold hardiness is the ability of plants to withstand low positive temperatures from 1 °C to 10 °C for a long time. Tomatoes are not cold-resistant plants and often get damaged and die at temperatures slightly above 0 °C. The main reason for the death of heat-loving plants from low positive temperatures is the disorganization of nucleic acid and protein metabolism, impaired cytoplasmic permeability (increased viscosity), reduced outflow of assimilates and accumulation of toxic substances in the cell. Cold tolerance is determined by the ability of plants to maintain the normal structure of the cytoplasm and change metabolism during the period of cooling and

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subsequent temperature increase [1, 3].

The resistance to cold varies among many varieties and different organs of tomato plants. To characterize the cold tolerance of plants, the concept of a temperature minimum is used, at which plant growth stops. For most agricultural