# Study on Leaf Epidermal Hair Characteristics of Eggplant and Its Effects on Cold and Drought Resistance

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Eggplant is an important vegetable crop, which is rich in varieties with high nutritional and medicinal values. However, the reduction of output often occurred in the eggplant production because of the damage of drought and chilling injury. Plant trichome is the neurites distributed on the surface of different plants to provide protection for plants all the time as a very important organization. In order to investigate the relationship between the leaf trichome characters and the stress resistance of eggplant plants, the stereoscope and scanning electron microscope were used to observe the structural characteristics of eggplant leaf trichome. And then the plasma-membrane permeability and relative water content of leaves treated with cold and drought stress were measured, respectively. Results showed that the scanning electron microscope observation was more suitable for observing the detailed structure of leaf trichomes in seedling stage compared with ordinary optical microscope because the leaf trichomes at this stage were dense and transparent. Results also showed that the cold and drought resistance ability of eggplant seedlings were positively correlated with the density and structural integrity of leaf trichomes. The eggplant cultivars with complete structure and higher density of leaf trichomes in the similar stage of seedlings exhibited stronger resistance to cold and drought stress. This study provided a useful reference for guiding eggplant stress resistance breeding and possessed important value.

**Awards Won:**