

**PARAMETERS OF ECOLOGICAL PLASTICITY AND STABILITY OF SUNFLOWER IN CHANGING
HYDROTHERMAL COEFFICIENT CONDITIONS**

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The article discusses the issues of changing climatic conditions, assessment of ecological plasticity, and stability of new promising precocious sunflower lines in the CIS during the period of 2022–2025 breeding year of the Tambov Research Institute of Agricultural Sciences. The years of the research were contrasting in terms of crop growing conditions. According to the environmental index (I_j), the most favorable years for the growth and development of sunflower plants were 2024 and 2025, with an environmental index of +1.0 and +1.2, respectively. The unfavorable years were 2022 and 2023: $I_j = -0.9$ and -1.3 respectively. The calculation based on the method developed by Eberhart and Russell showed that the studied lines have different ecological plasticity. Lines 425, 426, 428, 429, and 456 showed high ecological plasticity (regression coefficient >1). Line 456 was the most plastic, with a bi value of 1.7. Lines 429, 456, and 450 were the most homeostatic. The coefficient of standard deviation for these lines were 0.4, 2.3, and 2.5, respectively. If the growing conditions change for the worse, the technological properties of these lines will remain unchanged with minor modifications. New promising lines were identified based on their stability parameter. Lines 429 and 450 were the most stable, with the stability coefficient of 65%. Lines 418 and 428 were also considered stable, with the stability coefficient of 51%. Lines 425, 426, and 456 can be considered unstable.

Keywords: sunflower, ecological plasticity, stability, GTC, yield.