IDENTIFICATION OF SUNFLOWER GENOTYPES TOLERANT AT DROUGHT

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Abstract

Sunflower represents the main oil crop in Romania and is considered a moderately crop drought tolerant but in years with low precipitations seed yield is affected. In recent years, the temperature increased by 2-3 degrees Celsius compared to multi-year average over 60 years. In south-eastern of Romania (agricultural area Fundulea), in 2020, the average annual temperature was 13.5°C, in 2021, it was 12.1°C and in 2022, it was 13.3°C compared with multi-year average over 60 years who was 10.9°C. Rainfalls decreased in last four years from value of 303.3 mm, multi-year average over 60 years total from months April to August in South eastern of Romania, to a total of 180 mm in years 2020 and 2022, 269 mm in year 2021 and a total of 200 mm in 2023. In conditions of water stress and global warming we must identify sunflower genotypes with tolerance at drought and heat. In this paper we present results regarding resistance at water stress through observations development root system of sunflower genotypes under artificial condition in greenhouse and behavior in non-irrigated field in Calarasi county (Fundulea area) and Braila, in year 2023. Sunflower genotypes, S 23-5, S 23-6 and S 23-7 with very developed root system in water stress conditions was obtained thought interspecific hybridization with wild annual specie *Helianthus argophyllus* and with wild perennial species *Helianthus tuberosus* and *Helianthus maximiliani*.

Key words: sunflower, drought, *Helianthus argophyllus*, root system, water stress