

## **Abstract**

This work presents the results from an experience from 2010 and 2011, which was organized by randomized block method in three repetitions, in a field planted with corn hybrids from different germoplasm source ( Romanian, KWS, Pioneer) and from the another FAO group, carried out under irrigation, with irrigation (700 mm /ha ) and with 50% reduced irrigation level (350 mm/ha ) in Dobrogea area at SCDA Valul lui Traian. Throughout Romania, Dobrogea by geographic location, in terms of weather conditions, has the most diverse range of climate risks. Dobrogea is located in the interference of polar air masses with the tropical area where very cold air masses and dry arctic or polar origin, causes temperature decreases, the winds that sweep the snow in winter and summer masses entering hot air tropical climate that favors summer climate risks (massive heating, prolonged droughts and heat, aridity, etc..). Although the thermal potential of the area allows corn hybrids from very late group growing, prolonged drought and heat of summer limited their cultivation. The study aims to identify resistance / tolerance to drought and heat, on corn hybrids from three germoplasm sources (Romanian, KWS, Pioneer) and three different groups FAO to be grown in non irrigated area of Dobrogea. Correlation was established between different levels of water supply and production capacity in the three groups of precocity to identify most adapted hybrids to adverse conditions (drought and heat) in the area where experience has been mounted. Early hybrids, due to short growing season, have used more water reserve in winter, while medium and especially late hybrids reacted positively with increasing water applied.

**Key words:** hybrid, corn, irrigation, drought, tolerance.