

VARIATION OF THE AGRICULTURAL CROPS YIELD DUE TO CLIMATE CHANGE IN CONSTANTA COUNTY COMPARED TO DOBROGEA REGION AND ROMANIA IN THE PERIOD 2010-2019

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Abstract. *The study aimed to analyze the evolution of cultivated surface and yields achieved by the main agricultural crops: wheat, barley, maize, sunflower and rape in Constanta County compared to the yields carried out in Dobrogea Region and in Romania in the period 2010-2019. The climate change especially in terms of higher and higher temperatures, lower and lower amount of precipitations and severe, strong and long length drought were considered responsible of the decline of average production per surface unit in the analyzed period. The results proved that in Constanta County, wheat and maize recorded a high performance compared to the regional decade average and the national decade average. In case of maize crop, Constanta County registered lower yields in almost all the years except 2010 and 2011, both compared to the level in Dobrogea region and in Romania. In case of sunflower crop, in Constanta County, yields were much lower in almost all the years compared to the performance achieved in the Dobrogea region, except 2017 and 2018. Also, rape crop achieved a decline of production per ha in Constanta County compared to the performance in the region of Dobrogea in almost all the years, except 2010 and 2012. For diminishing the effects of climate change on the agriculture of Dobrogea region and especially of Constanta County, farmers have to continue to adapt production technologies, using cultivars and hibrids highly resistant to drought, diseases and pests, choosing a sowing period adapted to the temperature and water reserve into the soil, a corresponding fertilization and plant protection to achieve the desired yields. Also, the Ministry of Agriculture and Rural Development has to urgently implement the program for sustaining agriculture in Dobrogea region recovering the irrigation systems essential for avoiding aridization of the area.*

Keywords: wheat, barley, maize, sunflower, rape, yield, drought, Constanta County

1. Introduction

Cereals and oil seeds plants are the main groups of crops which play an important role in Romania's agriculture (Popescu Agatha, 2012a, 2012b, 2012c, 2015a, 2015b, 2017) [9, 10, 11, 12, 13, 14].

Romania is not only an major producer of cereals and oil seeds but also one of the key exporting member state of the EU.

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