MAIZE GRAIN YIELD AT DIFFERENT COMPLEX FERTILIZERS AND APPLICATION METHODS UNDER GROWING CONDITIONS OF SOUTH ROMANIA

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Abstract

Complex fertilizers are an important tool to enhance productivity of the maize plants and their ability to support stress factors, especially in the present when climate change has become the biggest global challenge to agriculture and food production. Nowadays, the selection of the right complex fertilizer products, the appropriate rate and time of application are essential for farmers to make efficient management decisions. In this context, the aim of this paper is to present the obtained results regarding the influence of different types of complex fertilizers depending on different method of application on maize grain yield under the specific growing conditions of South Romania. The research was carried out in field experiments located in South Romania (44º22' N latitude and 26º89' E longitude), under rainfed conditions in the years 2022 and 2023. The experimental factors were the following: Factor A – 2 types of fertilizer application method (a1. Banded with sowing; a1. Surface broadcast + incorporation), Factor B – 3 complex fertilizer products (b1. DAP 18:46:0; b2. DAP 18:46:0 treated with AVAIL; b3. Complex fertilizer 14:40:0+7S). The obtained results brought attention to the positive effects on the maize grain yield of the protected product DAP Avail 18:46:0 when it was applied banded with sowing. The effect of the complex fertilizers on the maize grain yield is depended of the climatic conditions of the year. The better water supply of maize plants gives them the possibility to use in more efficient way the nutrients from the soil.

Key words: maize, grain yield, complex fertilizer,