World Academy of Science, Engineering and Technology
International Journal of Agricultural and Biosystems Engineering
Vol:19, No:03, 2025

Nutritional Value and Leaf Disease Resistance of Different Varieties of Wheat

Authors : Danutė Jablonskytė-Raščė, Vidas Damanauskas

Abstract : The wheat (Triticum) genus is divided into many species, of which only two are widely distributed in the world - common wheat (Triticum aestivum L.) and durum wheat (Triticum durum Desf.). Common (soft) wheat is the most common type of wheat in the world and the most suitable for the harsh climate of Lithuania, but the grains have lower protein content and poorer nutritional properties. Durum wheat is characterized by a high protein content of the grain, but it is a crop of warmer climates grown in southern countries, Italy, Spain, the United States, Egypt, etc. Today's important issue is food, its resources and quality. The research focuses on healthier food grown in our conditions, the quality of which recently depends a lot not only on the cultivation technology but also on the warming climate conditions. Climatic conditions change the distribution of fungi and their hosts. Plants that have grown in our climate for many years have adapted to the use of fungicides, so the aim is to study cereal varieties grown in warmer climates and compare them with our country's varieties, studying their nutritional value and the spread of fungal diseases. The field experiments of different varieties of wheat were conducted at Joniškėlis Experimental Station of the Lithuanian Research Centre for Agriculture and Forestry in 2023. The soil of the experimental site was Endocalcari-Endohypogleyic Cambisol (CMg-n-w-can). The research was designed to identify the resistance to leaf diseases and the nutritional value of various wheat varieties. This research aims to focus on healthier food grown in our conditions, the quality of which recently depends a lot not only on the cultivation technology but also on the conditions of the warming climate. The study found that hot and humid summer weather led to the spread of foliar diseases in wheat. Tan spot (Pyrenophora tritici-repentis) is mostly spread in wheat crops. This disease had an average prevalence of 86.90%. The wheat crop was sparse, so this year was unfavorable for the spread of powdery mildew (Blumeria graminis). Dry weather prevailed during the period of flowering of cereals, which prevented the spread of ear diseases. Examining the qualitative indicators of grain, it was found that durum wheat had the best parameters.

Keywords : varieties, wheat, leaf disease, grain quality
Conference Title : ICAACS 2025 : International Conference on Agriculture, Agronomy and Crop Sciences
Conference Location : Rome, Italy
Conference Dates : March 04-05, 2025