RESEARCHES REGARDING THE USING THE VARIETAL DIVERSITY OF BARLEY IN THE INTERCROPPING SYSTEM WITH WHITE LUPINE (*LUPINUS ALBUS* L.) AND OAT (*AVENA* SPP.)

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Abstract

The aim of this study is to test the varietal mixtures of barley in intercropping system and to select genotypes adapted for the redesign of breeding programs in the management of modern agroecosystems. Descriptors such as yield / genotypes, seeds weight and foliar diseases were evaluated in 36 barley genotypes (10 advanced cultivars, 16 local populations, 10 inbred lines) by testing in mono-cropping and intercropping experiments in two years (2019, 2021), in the climatic conditions of northeastern Romania. Intercropping experiments (barley-oats, barley-white lupine) versus mono-cropping (barley, oats, white lupine) were performed in blocks with 36 genotypes sown in alternating rows (intercropping) and successive (mono-cropping) 2 m long and 12.5 cm between rows, for each variant. The results obtained of the barley evaluation in the two cropping systems by using the descriptors of productivity, disease and equivalent land ratio (LER) showed: high barley yield in mono-cropping and intercropping systems with white lupine, low incidence of powdery and life stripe in white lupine intercropping and spot blotch in oat intercropping, respectively positive interspecific interference regarding the resources in white lupine intercropping especially of local barley populations (LER -1.15). The selection of the varietal mixture (7-advanced cultivars, 13 local populations, 3 inbred lines) in the Ward dendogram can be used in intercropped crops and as genetic sources to obtain forms well adapted to the intercropping system.

Key words: intercropping, mono-cropping, white lupine, barley, varietal diversity