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Scoring of leaf rust of two wheat varieties after magnetic treatment through seed

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Abstract

Wheat (*Triticum aestivum*) is a commercial food crop food in Pakistan and is also important in global trade and food security. The cereal mainly contains carbohydrates and proteins. It is considered the main food along with rice in the entire country. The crop is vulnerable to plant pathogens and insects. Weeds are also one of the main issues in the wheat crop. Among the plant diseases, leaf rust is a major constraint in the yield and provision of quality food. Due to multiple plant pathogens, and scarce diversity in the germplasm of wheat, there is a dire need to screen or generate disease-resistant wheat genotypes. In the current work, two commercial cultivars with excellent yield potential were used. These varieties have good yield but the issue was mild susceptibility to leaf rust. To address this issue, these varieties were treated with magnetic treatment. Seeds were grouped into two major groups, treated with magnetic rays and another group as control. In the first variety first treatment will be given 30 minutes time interval and second treatment will be given 60 minutes and the third treatment will be given 90 minutes. In the second variety first treatment will be given a 25-minute time interval and second treatment will be given 50 minutes and the third treatment will be given 75 minutes. These treated seeds were later sown in RCBD in the field and were provided with the inoculum of rust during favorable disease conditions. There were significant differences in the resistance gradient of magnetically treated and untreated groups. Data for disease associated and morph-physiological traits were recorded and subjected to statistical software. For this purpose statistics 8.1 software was used. It was statistically examined for analyses of variance technique and comparison with treatment using Least Significance Difference (LSD) at probability level of 5%.

Keywords: Wheat Production, MAGNETIC Technology Effect, Brown Rust, Morpho-physiological parameters, Data Analysis

