

Variability for Nodulation and Yield Traits in Biofertilizer Treated and Untreated Pea (*Pisum sativum* L.) Varieties

Authors : Areej Javaid, Nishat Fatima, Mehwish Naseer

Abstract : There is a tremendous use of biofertilizers in agriculture to increase crop productivity. Pakistan spends a huge amount on the purchase of synthetic fertilizers every year. The use of natural compounds to harness crop productivity is the major area of interest nowadays due to being safe for human health and the environment as well. Legumes have the intrinsic quality to enrich the nutrient status of soil because of the presence of nitrogen fixation bacteria on nodules. This research determined the effect of biofertilizer on nodulation attributes and yield of the pea plant. Seeds of pea varieties were treated with a slurry of biofertilizer prepared in a 10% sugar solution just before seed sowing. The impact of biofertilizer on different parameters of growth, yield and nodulation was observed. Analysis of variance showed that plant height, days to flowering, number of nodes, days to first pod, root length and plant height exhibited significant genetic variation. All the yield parameters, including the number of pods per plant, number of seeds per pod, seed fresh and dry weight showed significant results under treatment. Among nodulation parameters, nodule number responded positively to biofertilizer treatment. Genotypes 2001-40 showed better performance followed by 2001-20 and LINA-PAK in all the parameters, whereas 2001-40 and 2001-20 performed well in nodulation and yield parameters. Consequently, seed treatment with biofertilizer before sowing is recommended to obtain higher crop yield.

Keywords : biological nitrogen fixation, correlation analysis, quantitative inheritance, varietal responses

Conference Title : ICAH 2020 : International Conference on Agriculture and Horticulture

Conference Location : Dublin, Ireland

Conference Dates : March 19-20, 2020