

Studies of various enzymatic activity on *Rhizobium* inoculated chickpea (*Cicer arietinum* L.) genotypes grown in eastern U.P

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Received November 9, 2017 and Accepted February 2, 2018

ABSTRACT : Fifteen distinct chickpea genotypes (Desi and Kabuli) showed wide variability in their enzymatic activity, nitrate reductase activity, nitrite reductase activity; protease activity *rhizobium* inoculated was relatively higher than non-inoculated. Nitrate reductase activity, nitrite reductase activity 45 DAS was relatively higher than 90DAS. NR activity pooled mean ranged between 63.23 to 65.28 μ mole/hr/g control, *rhizobium* inoculated 64.54 to 67.75 μ mole/hr/g and 52.38 to 56.02 μ mole/hr/g in control, *rhizobium* inoculated 53.89 to 57.73 μ mole/hr/g 45DAS and 90DAS, respectively, pooled mean of NiR activity at 45 and 90DAS are 144.53 to 147.00 μ mole/hr/g in control, *rhizobium* inoculated 145.73 to 148.77 μ mole/hr/g and 120.47 to 123.03 μ mole/hr/g in control, *rhizobium* inoculated 121.43 to 124.73 μ mole/hr/g, respectively, the mean ranged of protease activity between 94.72-95.51 in control, *rhizobium* inoculation 96.75-97.54 μ mole/hr/g and 101.81-102.44 in control, *rhizobium* inoculation 103.75-104.47 μ mole/hr/g in prospective years.

Key Words : Chickpea (*Cicer arietinum*) genotypes, *Rhizobium*, enzymatic activity, NR activity, protease activity, NiR activity, protease activity.