

ENHANCEMENT OF GROWTH PARAMETERS OF CHICKPEA GENOTYPES THROUGH FOLIAR APPLICATION OF UREA UNDER RAINFED AND IRRIGATED CONDITIONS

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Abstract: The influence of foliar application of 2% urea at different stages on growth of four chickpea (*cicer arietinum* L.) genotypes under rainfed and irrigated conditions. The irrigations had significant effect on the growth attributes i.e. plant height, number of branches per plant, dry matter accumulation, leaf area and total chlorophyll content of chickpea at all the stages of crop. This could be explored by the fact that lack of moisture affected various physiological processes adversely which reflected in growth attributing characters and ultimately in the grain yield. Irrigated crop recorded highest number of nodule and nodule weight per plant as compared to rainfed condition. Irrigation might have increased nodulation, as soil moisture has been shown to affect nodulation. At pod setting stage, nodule number starts declining and caused a reduction of about 38%. Pusa 362 produced more number of branches, higher dry matter accumulation, leaf area, root weight, nodule number and nodule weight over rest of genotypes, which indicated their expression of genetic character under iso-nutritional and good conditions. Pusa 1053 produced significantly taller plant as compared to other genotypes. Double foliar spray of urea (2%) at 50% flowering and pod setting stages recorded higher value of growth attributes i.e. plant height, number of branches, dry matter accumulation, leaf area, total chlorophyll content, root weight, nodule number and nodule weight of chickpea genotypes. The increased availability of nitrogen and water to plants through foliar spray may be responsible for improvement in growth of chickpea. Foliar spray of urea solution at vegetative growth periods may help to reduce the adverse effect of moisture stress on crop plants.

Keywords: Rainfed, Nodule number, root weight, Foliar spray of urea

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