

Effect of Foliar Spray of Kinetin and Homobrassinolide on Root and Leaf Development and Yield of Chickpea (*Cicer arietinum* L.) under Water Stress

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ABSTRACT

Two field experiments were conducted at Agricultural College Farm, Bapatla during rabi 2008-09 and 2009-10 to study the effect of kinetin and brassinosteroids on root and leaf development in chickpea (*Cicer arietinum* L) under water stress conditions in split plot design with nine treatments, replicated four times. Stressed plants from vegetative stage with no spray recorded the maximum root length, volume and dry weight; followed by the plants of homobrassinolide spray. No stress recorded more leaf area (28.5%) than water stressed plants. The plants undergone kinetin spray @ 5ppm performed well with higher leaf area (6.5%) than that of no spray; and it was on par with that of homobrassinolide spray @ 1ppm. The unstressed plants with kinetin spray attained the maximum leaf area and it was on par with that of homobrassinolide spray. It was noticed delayed senescence by homobrassinolide spray besides kinetin; which resulted in higher leaf area. Homobrassinolide spray @ 1ppm recorded higher values of SCMR followed by kinetin spray @ 5ppm. Unstressed plants with homobrassinolide spray recorded maximum seed yield (2451.3 kg/ha) and the plants stressed from vegetative stage recorded the minimum due to severe detrimental effects of water stress. Among sprays, homobrassinolide @ 1 ppm resulted in more seed yield (20.9%) than no spray and it was on par with kinetin spray @ 5 ppm.

Key words : Chickpea, Seed yield, Soil moisture content, Root and leaf characters, Brassinosteroid (BR), Kinetin.