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Sowing dates and potash levels influences on yield of chickpea

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ABSTRACT : Experiment was laid out in a split plot design with three replications and twelve treatment combinations formed due to (A) three sowing dates *viz*.,(i) 49th MSW(D_1),(ii) 50th MSW(D_2),(iii) 51st MSW (D_3), (B) four potash levels (i) 0 kg K_2O ha^{-1} (K_1), (ii) 25 kg K_2O ha^{-1}(K_2) , (iii) 50 kg K_2O ha^{-1} (K_3) and (iv) 75 kg K_2O ha^{-1} (K_4). The chickpea was sown on various sowing dates *viz*., 10th, 17th and 24th December 2009. The treatments of potassium levels along with recommended dose of fertilizer (25:50:00 kg NPK ha^{-1}) was given at the time of sowing. The seeds were treated with rhizobium culture @ 25 g per kg seeds. Chickpea sown on 10th December produced significantly higher grain and straw yield over rest of the treatments. Growth attributes measured in terms of plant height (59.05 cm) and plant spread (58.63 cm). The interaction effect between sowing dates and potash levels on growth, yield and quality of chickpea were non- significant. Thus, from the results of the present investigation it is concluded that for *Rabi* chickpea (cv. DIGVIJAY) on deep black soil under irrigated conditions, 10th December sown crop along with application of 50 kg K_2O ha^{-1} through Muriate of potash at the time of sowing would be the best proportion for higher productivity.

Key Words : Potassium level, Chickpea, Sowing date

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Pulses are important not only for their value as human food but also the important source of high protein content for livestock. It has been important component of Indian agriculture enabling the land to restore fertility by fixing the atmospheric nitrogen. It helps in producing reasonable yield of succeeding crops by restoring the fertility of soil. It also meets the demand of human dietary requirement *viz*. proteins, carbohydrates, fat and other nutrient sources.Recently, Pulses Improvement Project, Mahatma Phule Krishi Vidyapeeth, Rahuri (MS) has released new variety of Chickpea cv. 'DIGVIJAY' (Phule G 91028 x Bheema) for the Maharashtra. Digvijay, a yellowish brown bold seeded variety is suitable for rainfed, irrigated and late sown conditions, high yield potential, good milling quality, high protein, methionine content and resistant to wilt disease.It is, therefore, necessary to study the various Agronomic techniques to exploit potential of chickpea cv. 'DIGVIJAY'. The fertilizers are the most critical inputs for realizing the yield potential of improved varieties. Unfortunately, most of farmers are not in a position to apply the recommended dose of fertilizers.

Therefore, the present investigation entitled was studied with the following objectives.To study the performance of chickpea in relation to sowing dates under changing climatic scenario.

RESEARCH PROCEDURE

The soil of the experimental field was well drained with good water holding capacity, deep black having a depth more than 1.5 m. In order to know the physical and chemical properties of soil, samples were collected before sowing at 0-30 cm. depth at 15 locations from the experimental field and composite sample was prepared and analyzed for physical and chemical properties. The soil of the experimental field was clayey in texture, low in available nitrogen (148.25 kg ha^{-1}), medium in available phosphorus (16.64 kg ha^{-1}) and very high in available potassium (432.58 kg ha^{-1}) content. The pH value indicated that the soil was slightly alkaline in reaction. The field experiment was laid out in a split plot designwith 12 treatment combinations with 3 replications. The treatments consisted of three sowing dates relegated into main plot as main plot treatments and four potassium levels relegated into sub plot as sub-plot treatments.

For recording various observations five plants were selected randomly from the net plot. These five plants were marked by fixing bamboo pegs at the north side of each plant