



Research Article

Effect of sowing dates on potash levels in chickpea

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Summary

An experiment was laid out in a split plot design with three replications and twelve treatment combinations formed due to (A) three sowing dates viz., 49th MSW(D₁), 50th MSW(D₂), 51st MSW (D₃), four potash levels, 0 kg K₂O ha⁻¹ (K₁), 25 kg K₂O ha⁻¹(K₂), 50 kg K₂O ha⁻¹ (K₃) and 75 kg K₂O ha⁻¹ (K₄). The soil of experimental field was deep black 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 potassium (432.58 kg ha⁻¹) with slightly alkaline in reaction (pH 8.1). 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. The value of yield attributes such as number of pods per plant(46.99), weight of grain per plant(12.75 g) and weight of 100 seeds (26.28 g) were significantly higher when chickpea was sown on 10th December over crop sown on 24th December but it remained at par with 17th December sown chickpea. The yield attributes viz., number of pod, weight of pod, weight of grains per plant and 100 seed weight (g) were significantly the highest due to application of 50 kg K₂O ha⁻¹. The protein content in the grain was significantly increased with increased potash levels. 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 K₂O ha⁻¹ through muriate of potash at the time of sowing would be the best proportion for higher productivity.

Key words : Sowing dates, Potash levels, Chickpea

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Introduction

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. Fertilizer is the most critical input for any crop, for harvesting the potential yield of improved high yielding variety. However, in recent days *i.e.* post green revolution era, due to indiscriminate nutrient mining, soil fertility is depleting at an alarming rate. Therefore, to provide food for the population of nearly 121

crores, there is need of efficient use of fertilizer to augment the sustainable crop production. Generally potassium is available in ample quantity in India as well as in Maharashtra soils, but its availability to crop is very low. Potassium is very important to crop growth. It is an enzyme exhibitor, helps in metabolism, synthesis of starch, opening and closing of stomata, takes part in chlorophyll formation, grain development and also helps to resist the pest and disease attack. Hence, there is very much need to augment potassium externally. 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.