



Research Paper

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Yield and quality of pea (*Pisum sativum* L.) as affected by different levels of zinc and farmyard manure

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Abstract : The experiment was conducted to study the effect of zinc and farm yard manure (FYM) on yield and quality of pea (*Pisum sativum* L.) during *Rabi*, 2009-10. The treatment consisted application of 40 kg zinc sulphate ha⁻¹ significantly increased number of pods per plant, number of grains per pod, pod length, weight of pod, weight of grains per pod, shelling percentage, green pod yield, crude protein content, TSS, total sugar and reducing sugar content as compared to control where no zinc was applied. The similar trend in above parameters was also obtained with application of FYM at 350 q h⁻¹ over control where no FYM was applied. The combined effect of zinc (40 kg ha⁻¹) and FYM (350 q ha⁻¹) was found significant pertaining to green pod yield (80.03 q ha⁻¹) compared to control and was found statistically at par with 0, 150 and 250 q of FYM coupled with 40 kg ha⁻¹ zinc application.

Key words : Pea, Zinc, FYM, Yield, Quality

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Pea (*Pisum sativum* L.) is an important vegetable crop grown throughout India as well as in Rajasthan. In India, it is grown mainly as winter vegetable in the plains of North India and as summer vegetable in the hills. It is highly nutritive and rich source of digestible proteins (7.2%) along with carbohydrates (15.9%) and mineral matter like calcium (20 mg/100g), while dried pea grain contains protein (19.7%), carbohydrate (56.5%), calcium (75 mg/100g) besides being a good source of vitamins. Peas are utilized mainly as a vegetable and are also processed, dehydrated and canned for value addition (Aykroyd, 1963). The role of micronutrients and their mechanism in plant metabolism are well known as the minor elements are known to act as catalysts in promoting organic reactions taking place in plants, the zinc deficiency is more frequently encountered in Indian soils, especially, in saline and sandy soils of Western Rajasthan than deficiency of other micronutrients, particularly when the soils are either highly alkaline or are weathered and coarse (Duarte *et al.*,

1961). Response to zinc fertilizers in zinc deficient soils is obvious as reported for several crops including pea (Reddy *et al.*, 1995).

Organic manures play a vital role in improving the soil fertility and productivity of soils which has been acknowledged for generations. In recent years, organic farming is becoming more popular in India because people are now aware about the disastrous side effects caused by chemical farming on health and environment and now prefer organically grown foods. Organic manures not only increase the yield but also improve physical, chemical and biological properties of the soil which in turn improve fertility, productivity and water holding capacity of soil. The use of FYM partly substitutes chemical fertilizers and also reduces the cost of production. Besides this, its use increases soil organic matter content and has greater residual effects (Kumaran *et al.*, 1998). So far, the study on pea crop with reference to micronutrients and FYM was not carried out in this zone; hence, the present investigation