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Beneficial effect of foliar spray of zinc and iron on economics of cauliflower cv. SNOWBALL-16

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ABSTRACT

The cultivation of cauliflower cv. SNOWBALL-16 was found to be more beneficial and economical with foliar sprays of Zinc ($ZnSO_4$) and Iron ($FeSO_4$) in nine treatment combinations considering 3 levels of Zn (0.0, 0.5 and 1.0%) and 3 levels of Fe (0.0, 0.5 and 1.0%) at 30 and 60 days after transplanting of seedlings during *rabi* season of the year, 2002-03. Significantly highest marketable yield as 373.44 q/ha with highest net return of Rs. 151490.00/- per hectare along with highest net CBR as 1: 4.30 was obtained with combine foliar sprays of zinc and iron at 0.5% concentration each.

Key words : Zinc, Iron and Cauliflower.

Cauliflower (*Brassica oleracea* var. botrytis Linn.) is one of the most important vegetable cole crops grown in India. It belongs to the family Brassicacea. It is grown for its white tender curd formed by shortened flower parts.It has high nutrient requirement, particularly macro and micronutrients. Cauliflower curd yield has been set aside by deficiency of micronutrients, which leads to certain physiological disorders (Mehrotra and Misra, 1974). But the research done on use of zinc with combination of iron is scantly. Therefore, the present investigation was carried out to know the beneficial effect of foliar spray of zinc and iron on economics of cauliflower cv. SNOWBALL-16.

MATERIALS AND METHODS

The field trial was conducted during *rabi* season of the year, 2002-03 at Agronomy Research Farm, College of Agriculture, Junagadh Agricultural University, Junagadh. The experiment was laid out in Factorial Randomized Block Design with four replications. Zinc and iron were applied in the form of zinc sulphate ($ZnSO_4.7H_2O$) and ferrous sulphate ($FeSO_4.7H_2O$), respectively. There were nine treatment combinations, considering three concentrations of zinc (0.0, 0.5 and 1.0%) and three concentrations of iron (0.0, 0.5 and 1.0%) applied as foliar sprays at 30 and 60 days after transplanting of seedlings. The seedlings of cauliflower cv. Snowball-16 were transplanted after five weeks of seed sowing at 45×30 cm spacing. All the experimental plots received recommended dose of nitrogen (150 kg/ha), phosphorus (37.5 kg/ha) and potassium (37.5 kg/ha) along with F.Y.M. (15 tones/ha).

The crop was harvested manually in the first week of March-2003 and yield estimated from net plot was converted into yield per hectare. The selling of curd was done at the rate of Rs. 5.00/- per Kg. Net realization (return) in terms of rupees per hectare was worked out on the basis of mean marketable curd yield per hectare of each treatment and was calculated by deducting total cost of cultivation from gross realization of each treatment and recorded accordingly. The net cost benefit ratio (CBR) was calculated as given below.

$$\text{CBR} = \frac{\text{Net realization (Rs/ha)}}{\text{Total expenditure (Rs/ha)}}$$

RESULTS AND DISCUSSION

Effect of zinc :

The cauliflower cultivation was found to be more beneficial and economical with foliar application of zinc. Among different levels of zinc, the maximum marketable yield (q/ha) with maximum net return (Rs/ha) along with maximum net CBR was obtained with foliar spray of zinc at 0.5% concentration (Table 1). This might be due to the beneficial effect of zinc application.

Effect of iron :

The cauliflower cultivation was found to be more beneficial and economical with foliar application of iron. Among different levels of iron, the maximum marketable yield (q/ha) with maximum net return (Rs/ha) along with maximum net CBR was recorded with foliar spray of