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EFFECT OF MICRONUTRIENTS ON YIELD OF LITCHI FRUIT (*Litchi chinesis* SONN.)

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ABSTRACT

The present study was carried out with an objective to improve the yield and quality of litchi fruits. By the application of different micro-nutrients through foliar application.

Key words : *Effect of micronutrients, Foliar spray, yield, litchi fruit.*

Litchi (Litchi clunesis Sonn) is popular in the subtropical regions of India. Muzaffarpur (Bihar) is known for quality production of *litchi* in the country because of its suitable agro-climatic conditions. Cultivation of *litchi* is also becoming popular in the plateau region of Bihar. Low production and poor quality of fruits are the major problems are the major problems in this fruit grown in this area. In recent years, exogenous application of different micronutrients have been tried to modify physiological process leading to varied growth and developmental patterns in plants. The present investigation was carried out to assess the performance of zinc sulphate. Borax through foliar feeding specially on the yield and quality of fruit of *litchi*. cv Purvi.

MATERIALS AND METHODS

The experiment was carried out in the Horticultural garden of the University, in 1993 and 1994. The experiment was conducted in a split-split plot design with six treatments of micronutrients in main plots (Zinc sulphate 0.0, 0.4, 0.8 percent and Borax (0.0, 0.2, 0.4 percent) which were replicated thrice. Zinc sulphate and Borax were sprayed on the new growth flush on 17th February each year. The spraying of 2, 4-D and GA_3 was started after fruit set.

Observations on fruit weight, length, diameter pulp juice and stone percentage were recorded at harvest. Biochemical constituents such as total soluble solids (T.S.S.) acidity, ascorbic acid, reducing suggest non-reducing sugar, total sugar and sugar/acid ratio were estimated at harvesting. Pooled data of both the years were statistically analysed.

RESULTS AND DISCUSSION

Effect of Micronutrients : Litchi fruit sprayed with micronutrients appeared to be larger than the unsprayed fruits. The micronutrients (0.8 percent zinc

Table-1 : Effect of Micronutrients on yield and quality of fruits.

Parameter	Foliar spray		Control	CD at 5%
	Zinc (0.8%)	Boron (0.4%)		
Fruit yield (No)	515	488	381	24
Fruit yield (kg)	13.03	11.09	8.73	1.85
Fruit length (cm)	3.47	3.41	2.8	0.01
Fruit diameter (cm)	2.73	2.71	2.55	0.01
Pulp (%)	71.92	71.87	65.73	3.45
Juice (%)	34.12	33.97	31.24	2.60
T. S. S. (%)	16.58	16.63	15.56	0.23
Acidity (%)	0.6	0.61	0.75	0.01
Ascorbic acid (mg/100 g of fruits)	38.06	37.62	31.52	0.52
Reducing sugar (%)	10.55	10.46	10.01	0.02
Non-reducing sugar (%)	4.34	4.24	4.08	0.11
Total sugar (%)	15.13	14.93	14.39	0.13

sulphate and 0.4 percent Borax) proved superior to control yielding 515 and 488 fruits weighing 13.03 and 11.09 kg of treated panicles, respectively (Table-1).

Both the micronutrients increased the size of fruits. This resulted in higher pulp as well as juice content of fruits. Mishra and Khan *et al*. (1981) earlier reported similar results. It also increased the T.S.S. and decreased the acidity as compared to control. Foliar application of micronutrients increased the ascorbic acid content of fruits to 38.06 mg/100 g as compared to control (31.52 mg/100g). The reducing, non-reducing and total sugar content of fruits increased marginally due to application of the micronutrients.

CONCLUSION

Results suggest the possibility to increase the yield as well as quality of *Litchi* fruits grown in plateau region of Bihar by foliar application of 0.4 per cent Borax.

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