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Effect of ethrel on fruiting characteristics of pineapple under Cooch Behar district of West Bengal

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Pineapple [*Ananas comosus* (L) Merr] is an important fruit crop of India due to its excellent flavour, short juvenile phase, good appearance and fragrance. West Bengal stands first for area coverage (9,638 ha) and production (2,93,763 MT) of pineapple in India. In West Bengal it is intensively cultivated in Siliguri sub-division of Darjeeling, Islampur sub-division of North Dinajpur, and Sadar sub-division of Jalpaiguri districts. Considering the importance of this crop, India government declared this zone along with the parts of Cooch Behar district as the country's first Agri-Export Zone. One of the major problems faced by pineapple growers in this locality is highly erratic flowering nature of the plants and improper fruiting characteristics. This leads to irregular harvesting with less price and irregular supply of fruits to market and industry. For addressing this problem, recent experiment was taken up for assessing the suitable concentration of ethrel for its effect on fruit physico-chemical properties.

The present experiment was carried out at the University Farm, Uttar Banga Krishi Viswavidyalaya, Pundibari, Cooch Behar during 2007 with a commercial pineapple cv. Kew. The selected plants were uniform in size and with 25cm × 35cm × 90 cm spacing. The age of plants during treatment was 16 months. The chemical; *i.e.*, ethrel 25, 50, 75, 100, 125 and 150 ppm, along with water spray/control were applied as foliar spray at 40 to 50 leaves stage. Recommended package of practices (Mohan and Ahmed, 1987, Chadha, 2009) including application of FYM @600 g year^{-1} and N:P:K of 12:4:12 g plant^{-1} year^{-1}, plant protection, weed control were followed. The experiment was carried out in randomized block design with three replications. To study the fruit physico-chemical properties, fruits from each of the treatments were collected randomly at maturity and physical and bio-chemical properties of fruit were recorded gradually in the laboratory. Total sugar, reducing sugar, acidity, total soluble solids (TSS) and non-reducing sugar were estimated by the method described in 'Official Methods of Analysis' by A.O.A.C. (Anon, 1984), whereas determination of ascorbic acid and statistical analysis were done through the method described by Rangana (1977) and Panse and Sukhatme (1985) respectively. Data presented on table-1 shows that maximum fruit length without crown (17.37 cm) and breadth (36.67 cm) was recorded with ethrel @25ppm. Whereas, maximum fruit weight (1.470 kg) was recorded with ethrel @50ppm which is statistically at par with T_1. Juice percentage was highest (81%) with T_2 and this is statistically non significant among all the treatments.

Table 1: Effect of ethrel on physical and biochemical properties of fruits

Treatment (Ethrel)	Fruit length (cm)	Fruit girth (cm)	Fruit wt. (kg)	Peel wt. (g)	Core weight (g)	Juice %	TSS (^{O}brix)	Total sugar (%)	Reducing sugar (%)	Acidity (%)
T_1 25ppm	17.37	36.67	1.330	201.33	37.33	78.33	14.93	6.07	3.14	0.73
T_2 50ppm	15.57	34.67	1.470	213.33	39.33	81.00	14.27	5.51	3.54	0.65
T_3 75ppm	13.73	32.17	0.900	184.67	36.00	78.67	14.67	5.51	3.95	0.61
T_4 100ppm	14.87	35.00	1.170	196.00	39.00	74.67	14.13	5.03	4.54	0.58
T_5 125ppm	13.00	30.33	0.950	175.00	35.67	74.33	14.13	5.13	3.64	0.63
T_6 150ppm	13.67	32.50	0.740	196.00	37.33	73.67	13.87	4.51	2.98	0.84
T_7 Control	13.77	32.00	0.890	168.67	36.33	75.67	13.73	4.85	3.89	0.84
SEm	**0.49**	**0.66**	**0.07**	**4.35**	**0.63**	**1.73**	**0.36**	**0.19**	**0.13**	**0.05**
LSD(0.05)	**1.53**	**2.03**	**0.149**	**13.42**	**1.92**	**NS**	**NS**	**0.61**	**0.42**	**0.15**

The TSS content was recorded maximum (14.93^0 brix) with ethrel @25ppm followed by 75 ppm (14.67^0 brix) and it was found lowest (13.73^0 brix) with control. However, there is no significant variation among the treatments for TSS value. Maximum total sugar content (6.07%) was recorded with ethrel @25 ppm, which is followed by ethrel 50 and 70 ppm. Whereas, acidity of fruit was recorded lowest with ethrel 100 ppm. Singh *et al.* (1999) reported that TSS (total soluble solids), sugars, vitamin C and vitamin A were increased effectively by the application of 100 or 50 ppm ethrel. Ethrel at 100 ppm at 40 leaf stage showed TSS 11.63 ^{O}brix, acidity 0.386%, and sugars 10.43%. (Singh and Attri, 1999). Considering the foregoing discussion it may be recommended that among the all treatments, ethrel @25ppm is the best for fruiting characteristics of pineapple in the Cooch Behar zone of West Bengal.

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Short Communication

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