

Short Communication

Response of Borax with Irrigation at Different Intervals on Fruit Cracking and Yield of Pomegranate

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Pomegranate (*Punica granatum* L.) is an important fruit crop of arid and semi-arid regions because of its hardy nature, versatile adaptability and export potential (Pareek, 1977; Banker and Prasad, 1992). Sun-scorching, internal breakdown and fruit cracking are some of the major physiological disorders that adversely affect the production and quality of pomegranate. Once the mature fruit gets cracked, it can be invaded by certain fungi or bacteria. The fruit then loses its market value and often becomes unfit for human consumption (Panwar *et al.*, 1994; Singh, 1995). There are several studies on effect of either irrigation, gibberellic acid or borax on fruit cracking of pomegranate (Anonymous, 1993; Sharifi and Sepahi, 1984), but information on combined effect of these factors on cracking is meagre. The present investigation was conducted to see the effect of borax with different irrigation intervals on fruit cracking and yield of pomegranate.

Experiment was carried out on seven-year-old pomegranate plants cv. Jalore seedless at a farmer's field, where 25 kg Farm Yard Manure (FYM), 0.50 kg urea, 125 kg super-phosphate and 150 g muriate of potash per plant were applied in the month of May. In order to control cracking, irrigation was given at 10, 15

and 21 days' interval. At the time of fruit setting 0.5% and 1.0% borax was applied in the soil alone and in combination with the above irrigation intervals. Plants with irregular irrigation and without borax were served as control. Observations on plant height, number of fruit per plant, cracked fruits per plant, average fruit weight and yield were recorded at the time of maturity and harvest.

Results showed that adjustment of irrigation intervals and application of borax alone or in combination generally increased the plant height, which was statistically non-significant. Number of fruits per plant increased significantly with 0.5% borax + 10 days of irrigation interval, followed by 1.0% borax + 21 days of irrigation interval. Average fruit weight also increased with almost all the treatments, the most effective being irrigation at 10 days' intervals + 0.5% borax. These observations further indicated that isolated treatments of different irrigation intervals (10, 15 and 21 days) and borax concentration (0.5 and 1.0%) increased the fruit weight and number of fruit to some extent, but combinations of these treatments provided higher yield (Table 1). Further, a significant decrease in per cent fruit cracking with these treatments was also recorded. The role of

Table 1. Effect of borax and irrigation intervals on yield and yield attributes in pomegranate

Treatments	Plant height (m)	Fruits per plant (No.)	Cracked fruits per plant (%)	Average fruit weight (g)	Yield (kg/plant)
Control (Irregular irrigation without Borax)	2.85	36.33	20.33	210.33	7.641
Irrigation interval:					
10 day	3.13	38.34	19.33	211.67	8.115
15 day	3.33	37.35	11.00	232.00	8.665
21 day	3.05	38.33	9.00	230.00	8.815
Borax (%):					
0.5	3.46	40.33	9.33	236.67	9.544
1.0	3.50	41.80	8.33	260.14	10.925
Irrigation at 10 day + 0.5% Borax	3.86	43.89	5.66	305.67	13.415
Irrigation at 15 day + 0.5% Borax	3.55	34.67	2.00	305.00	10.574
Irrigation at 21 day + 0.5% Borax	3.57	35.33	7.66	262.33	9.268
Irrigation at 10 day + 1.0% Borax	3.70	38.67	5.33	294.00	11.368
Irrigation at 15 day + 1.0% Borax	3.63	38.67	8.00	270.00	10.440
Irrigation at 21 day + 1.0% Borax	3.75	43.67	5.66	250.00	10.917
SEm±	0.28	1.92	1.76	25.95	0.13
CD at 5%	NS	5.56	5.13	75.72	0.36

borax and irrigation interval in increasing fruit set and fruit retention have been reported by other workers also (Anonymous, 1993; Kamble *et al.*, 1994).

Thus, soil application of 0.5% borax at the time of fruit setting, and irrigation at 10 days' intervals decreased the fruit cracking and improved the yield in pomegranate.

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