

Consequence of time of sowing on the growth and yield of okra cv. OH-152

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ABSTRACT : The field experiment was conducted in Tapi district of Gujarat state to see the effect of date of sowing on growth and yield of okra. Date of sowing on 15th October got significantly greater plant height (120.19 cm) than those sown on 1st November and 15th November, respectively. This might be due to prevailing favourable weather condition. Okra sown on 15th October took a significantly less days to first flowering (39.36) compared to 1st November and 15th November sowing, respectively. Although, the number of branches per plant and nodules per main stem were significantly affected by the sowing dates. The higher number of branches per plant (2.18) and nodules per main stem (18.74) were obtained from 15th October sowing. This might be attributed to the more efficient use of long day available. The significantly higher number of fruits per plant (19.25) and yield per plant (192.01 gm) were recorded from 15th October sowing. Similarly, the number of fruits per plant (6.45) and yield per plant (64.24 g) significantly decreased as sowing was delayed. Okra sown on 15th October also recorded significantly higher yield per hectare (21.263 t/ha) than 15th November sowing (7.138 t/ha). The tallest plants, higher number of nodules and largest leaf area produced from October sowing might have contributed to its greater number of fruits per plant and yield.

Key Words : Sowing time, Growth, Yield, Okra

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Okra [*Abelmoschus esculentus* (L.) Moench] is an important vegetable among other vegetables, having good demand throughout the year for its tender fruits. It is a high value nutritive crop and plays an important role to meet the demand of vegetables of the country when vegetables are scanty in the market. These green fruits are rich source of vitamins, calcium, potassium and other minerals. Indian is the largest producer of okra in the world. Okra requires long and warm growing season and is susceptible to frost. The optimum day temperature for its well growth is between 25^o to 40^o C and that of night is over 22^o C. It is semi woody, fibrous, herbaceous annual plant with an indeterminate growth habit (Balock, 1994). It is used by different people in different ways. The immature pods are consumed as boiled vegetables; they are also dried and used as soup thickeners or in stews (Yadev and Dhankhar, 2002). Iremiren and Okiy (1986) observed progressive yield decrease for each month of delayed sowing of okra.

Tribal farmers of Tapi district grow vegetable after paddy cultivation. They are growing okra after *Kharif* paddy cultivation. Majority of farmers has limited irrigation sources after *Kharif* cultivation. They grow different field crops like

gram, ground nut, castor and vegetable after paddy cultivation. There is more demand of okra in winter for getting higher prices as in winter okra is off season crop. Farmers' sow okra from 15th October to 30th November after *Kharif* paddy. They do not know the actual time for growing okra for getting higher productivity and profit. Hence, this experiment was framed to find out the actual time of sowing of okra for higher production and profit.

RESEARCH PROCEDURE

The study was undertaken to see the effect of different time of sowing on growth and yield of okra cv. OH-152 in the year 2008 and 2009 at field of Krishi Vigyan Kendra, Tapi. The variety 'OH-152' was selected for present study because hybrid variety produces for green, tender and attractive. This will fetch the higher price in market. Moreover, it is resistant to yellow vein mosaic virus (YVMV) and suitable for all season. The experiment was carried out in Randomized Block Design with treatment comprised of three planting dates viz., 15th October, 30th October and 15th November and replicated at seven

Table 1: Meteorological information for Vyara, Surat (Gujarat)

Months	Year 2008-09				Year 2009-10			
	Av. maxi. temp° C	Av. mini. temp° C	Av. sunshine hours	Humidity (%)	Av. maxi. temp° C	Av. mini. temp° C	Av. sunshine hours	Humidity (%)
October	32.55	21.12	6.82	86	29.5	19.1	6.95	81
November	32.5	20.4	7.41	80.2	30.3	20.0	7.4	81
December	32.0	17.5	7.1	80.15	30.3	20.1	7.47	74.3
January	31.0	18.8	5.56	69.4	30.4	17.8	6.21	67.3
February	31.1	18.8	6.03	65.3	30.8	18.3	6.72	68.8
March	34.0	20.1	7.86	58.3	33.8	20.3	7.62	57.9

Table 2 : Effect of sowing dates on growth and yield attributing character (pooled over two year)

Treatments	Height at last harvest (cm)	No. of branches/ main stem	Nodules/ main stem(no.)	Days to first flowering	No. of fruit/plant	Yield /plant (g)	Yield (t/ha)
15 th October	120.19	2.18	18.74	39.36	19.25	192.01	21.263
1 st November	85.76	0.96	12.91	42.54	12.76	127.01	14.112
15 th November	63.04	0.26	7.87	43.54	6.3	64.24	7.138
C.D. (P=0.05)	4.95	0.20	0.86	0.87	0.96	9.25	1.017
CV %	7.17	22.53	8.46	2.70	9.73	9.39	9.31

locations. The okra was planted at a distance of 45 cm x 20 cm. The soil was sandy loam and all recommended ago- techniques were applied. Pest and disease were controlled by spraying all necessary pesticides and insecticides. Observation on growth and yield parameters were recorded.

RESEARCH ANALYSIS AND REASONING

The average monthly temperature for two years ranged from 17.8° C to 34.0° C, while the average relative humidity ranged from 57.9 per cent to 86 per cent and the average sunshine hour ranged from 5.56 to 7.47 hr. (Table 1). Temperature was taken daily and averaged for month, using the minimum and maximum thermometer.

Date of sowing on 15th October had significantly greater plant height (120.19 cm) than those sown in 1st November and 15th November, respectively (Table 2). This might be due to prevailing favourable weather condition. This result agrees with the finding of Mike (2010). Okra sown in 15th October took a significantly less days to first flowering (39.36) as compared with 1st November and 15th November sowing. This might be due to the inability of okra sown in early October to accumulate enough thermal units to induce early flowering. This result agrees with the findings of Usman (2001). Where as the period of days to first flowering increased with each month of delayed sowing. Although, the number of branches per plant and nodules per main stem were significantly affected by the sowing dates. The higher number of branches per plant (2.18) and nodules per main stem (18.74) were obtained from 15th October sowing. This might be attributed to the more efficient use of long day available. The significantly higher number of fruits per plant (19.25) and yield per plant (192.01 g) were

recorded from 15th October sowing. Similarly the number of fruits per plant (6.45) and yield per plant (64.24 g) significantly decreased as sowing was delayed. This might be due to greater number of branches produced and exuberant vegetative growth of the plants compared to those planted later. The number of fruits and yield per plant, therefore, would depend on the intensity of growth of the plants. This result agrees with the findings of Hossain *et al.* (2001).

Okra sown at 15th October also recorded significantly higher yield per hectare (21.263 t/ha.) than 15th November sowing (7.138 t/ha.). The tallest plants, higher number of nodules and largest leaf area produced from October sowing might have contributed to its greater number of fruits per plant and yield. The result is in line with the finding observed by Moniruzzaman *et al.* (2007).

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