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Effect of Irrigation and Cycocel on Growth and Yield of Summer Okra (*Abelmoschus esculentus* (L.) Moench)

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Field experiment was conducted during summer season of 1993 at the College Farm, Gujarat Agricultural University, Navsari to study the effect of irrigation and cycocel on growth and yield of summer okra. The treatment consisted of four IW/CPE ratios viz., 0.5 (I_1), 0.7 (I_2), 0.9 (I_3) and 1.1 (I_4) each of 60 mm depth and three cycocel levels and water spray control (C_1), 250 ppm (C_2), 500 ppm (C_3) and 750 ppm cycocel (C_4). The experiment was laid out in Factorial Randomized Block Design with sixteen treatment combinations replicated three times. The experimental soil was clayey in texture with 7.9 pH. The field capacity, permanent wilting point and bulk density of the top 30 cm soil depth was 32.50, 18.0 per cent and 1.44 g/cm^3, respectively. Total number of irrigations including two common irrigations (80 + 60 mm) applied as per treatment during crop season was 6, 8, 10 and 12 for IW/CPE ratio of 0.5, 0.7, 0.9 and 1.1 respectively. Okra variety 'Parbhani Kranti' was sown on 5th February, 1993 at the spacing of 45 x 15 cm. Single spray of cycocel and water was given to the crop on 7-3-93. Total 14 pickings were taken up from 1-4-93 to 17-5-93.

Data presented in Table -1 indicated that irrigation treatments had a significant effect on growth and yield of okra. The highest plant height, number of branches per plant, number of leaves per plant, number of fruits per plant and fruit yield were recorded with IW/CPE ratio of 1.1, but statistically it was at par with treatment IW/CPE ratio of 0.9 except number of leaves per plant. The significant variation in plant height, number of branches per plant and number of leaves per plant could be attributed to cell division, their elognation and turgidity owing to variation in soil moisture supply under different IW/CPE ratios. The higher yield obtained under IW/CPE ratio of 1.1 and 0.9 was mainly due to significant improvement in growth and yield attributes, as the crop did not face any moisture stress during different growth and development stages under these treatments. These findings are in agreement with those of Pandey and Singh (1979).

The marked retarding effect of cycocel treatments was observed on plant height. The highest plant height was recorded with water spray (control), while significantly the lowest plant height was recorded with 750 ppm

TABLE 1

Growth and yield of summer okra as influenced by irrigation and cycocel.

	Plant height (cm)	*Number of branches per plant*	*Number of leaves per plant*	*Number of fruits per plant*	*Green fruits yield (q/ha)*
Irrigation					
IW/CPE ratio 0.5	63.55	1.92	16.65	8.10	60.75
IW/CPE ratio 0.7	75.40	2.13	20.63	9.89	79.44
IW/CPE ratio 0.9	102.00	2.53	26.30	11.46	100.32
IW/CPE ratio 1.1	104.50	2.62	27.90	11.75	106.65
S.Em.±	1.02	0.06	0.54	0.15	3.04
C. D. 5 %	2.96	0.17	1.56	0.43	8.76
Cycocel					
Water spray (control)	89.60	2.08	21.45	9.62	74.63
250 ppm	88.48	2.18	22.15	10.02	81.92
500 ppm	85.40	2.35	23.30	10.51	90.80
750 ppm	81.98	2.58	24.58	11.06	99.81
S. Em. ±	1.02	0.06	0.54	0.15	3.04
C. D. 5 %	2.96	0.17	1.56	0.43	8.76

cycocel treatment. Application of 750 ppm cycocel i.e. highest concentration recorded the highest number of branches, number of leaves and number of fruits per plant. Similarly, the highest green fruit yield was also obtained with application of 750 ppm cycocel and the lowest green fruit yield was recorded with water spray (control). The reduction in plant height was mainly due to shorter internodes caused by reducing cell division, cell expansion and elon-

gation of subapical meristems. Cycocel treatments were effective in suppressing the apical dominance, thereby promoting growth of axillary buds into new shoots. Cycocel has pronounced effects on formation of more number of nodes and branches which are main sites for formation of flowers and fruits and thereby ultimately increased total green fruits yield. These results are supported by Tosh *et al*,. (1978), Gowda and Gowda (1983) and Patel (1989). The interaction effect of irrigation and cycocel on fruit yield was found to be non-significant.

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