

## III. REPORTS FROM COOPERATORS

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Cyclic AMP as a growth promoter of dwarf (d)

Seeds of dwarf (d) were soaked and planted in either GA<sub>3</sub> (2.6x10<sup>-6</sup>M, K salt), GA<sub>7</sub> (2.6x10<sup>-6</sup>M, K salt), cyclic AMP (1x10<sup>-6</sup>M) or distilled water in a growth chamber at 25±1C. Once every 24 hr the germinating seeds were subjected to one hr of red light. The lengths of coleoptiles and mesocotyls were measured 108 hr after planting (Table 1). The lengths of both coleoptile and mesocotyl of GA<sub>3</sub>-, GA<sub>7</sub>- or

Table 1. Mean lengths for tissues of 108-hr seedlings (expressed in mm).

Tissue	Treatment			
	Control	GA <sub>3</sub>	GA <sub>7</sub>	cAMP
Coleoptile	22.64	31.58	25.11	29.32
Mesocotyl	9.01	16.97	20.92	11.98

cAMP-treated seeds are significantly greater than the controls, although the increase in mesocotyl length of cAMP-treatments is significantly less than that of GA<sub>3</sub> or GA<sub>7</sub> treatments. There is no evidence of a synergistic effect for GA<sub>3</sub> and cAMP in increasing the length of the coleoptile or mesocotyl.

Auxin production, as measured by the *Avena* section test, is increased significantly in GA<sub>3</sub>-treated coleoptiles, but not in cAMP-treated ones. Amylase activity is increased in treated coleoptiles, but only GA<sub>3</sub> elicits increased amylase activity in the mesocotyl.

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Further studies on the EMS-induced dominant mutant "curled entangled"

Curled entangled (Ce) gene expression (MNL 48:15) at different stages of plant growth was studied in the progenies of selfed plants and their crosses as pollen parent to normal plants. Curling expression was noted every fifth day after germination. The homozygous plants did not survive till maturity. Plants in the selfed progenies expressed the mutant character continuously from the fifth to the twenty-fifth day; two peaks were observed, one on the tenth and the other on the twentieth day. On the other hand, in the crossed progenies about 90 percent of the plants expressed the mutant features within ten days (Table 1). In the selfed progenies

Table 1. Curled entangled gene expression in selfed and crossed progenies (figures within parentheses represent percentages).

Progeny	Family Number	Total Plants	Number of plants				
			Days after germination				
			5th	10th	15th	20th	25th
Ce/+ ×	22	1192	124 (10.41)	392 (32.88)	204 (17.12)	336 (28.18)	136 (11.41)
N × Ce/+	24	1335	829 (62.09)	356 (26.66)	125 (9.36)	16 (1.21)	9 (0.68)