

## Interaction between GA<sub>3</sub> and CCC on growth and yield of *Brassica campestris* L. (cv-M 27)

K.C. SARMAH AND C.M. SARMA

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### SUMMARY

The experiment was designed to study the interaction between GA<sub>3</sub> and CCC (Chlorocholine chloride) on growth and yield of *Brassica campestris* L. (cv-M 27). CCC at different concentrations (50, 100, 250 and 500 µg/ml) was applied as foliar spray on the plant treated with GA<sub>3</sub> at varying concentrations (100, 250, 500 and 1000 µg/m). GA<sub>3</sub> was applied as pre-sowing seed soaking treatment. The combined effect of GA<sub>3</sub> and CCC registered better performances in all the parameters than either of the two compounds acted alone. GA<sub>3</sub> (500 µg/ml) in combination with CCC (500 µg/ml) recorded better growth and yield.

**Key words :** GA<sub>3</sub>, CCC, *Brassica campestris* L. (cv-M 27), Growth and yield

*Brassica campestris* L. (Rapeseed) belongs to the family Brassicaceae. The plants of this family occupy the most important position in the list of daily consumable vegetable oils. Besides this the rapeseed has manifold uses. Seed is used as condiment in preparation of curries and pickles. Young leaves are used as green vegetable. The oil cake is used as cattle feed which has a cooling, digestive effect and can prevent skin diseases. Besides providing essential part of human diet, vegetable oils constitute an important raw materials for the agro- based industries and the manufacture of various other sophisticated products (Singh and Singh, 2001). It is also used as manure. The oil is used for illuminating purposes and it forms an ingredient in many Ayurvedic medicine and in medicated oils used as liniment for massage in many paralytic diseases of the nervous system. Rapeseed oil is used as lubricant in the manufacture of greases, quenching steel plates and for the manufacture of soft soaps.

Although several high yielding varieties have now been developed, our country has not yet been able to meet the demands of the population and is depending on imported edible oils (Saini *et al.*, 1989). The average yield of rapeseed and mustard in our country particularly in North east region of India is rather very low in comparison to its need. Insufficient production of rapeseed and mustard for our requirements is one of causes to make a way of adulteration in oils. The extent of adulteration had reached a dangerous levels in the year 1998 in causing “drosy” (Menon, 1998).

Hence, scientific study on growing rapeseed and mustard for its increased yield has become an urgent need of the country. Plant growth regulators which are generally used to modify growth and yield of crops have also been reported for amelioration of rapeseed plants by many workers (Saran and Mehta, 1983, 1985 and Mehta and Saran, 1986). The present experiment was designed to study the interactions between GA<sub>3</sub> a growth promoter and CCC (Chlorocholine chloride) a retardant on growth and yield of *Brassica campestris* (cv. -M 27).

### MATERIALS AND METHODS

Healthy seeds of *Brassica campestris* (cv-M 27) were soaked for 12 hr in each of 100, 250, 500 and 1000 mg/ml of GA<sub>3</sub>. Seeds soaked in distilled water for the same period was taken for control. The treated seeds were then planted in furrows in *rabi* season on October 15th (1998) in randomized block design which was replicated thrice. The row to row and plant to plant spacing was maintained at 30 cm and 15 cm, respectively. Foliar spary of varying concentrations of CCC was done at bud stage with the concentrations 50, 100, 250 and 500 mg/ml. The land selected for the experiment was ploughed and reploughed with subsequent ladderings till the desired fine tilth for the crop was obtained. Basal application of farmyard manure at recommended doses of 3 (three) tonnes/ ha and recommended doses of urea, SSP (Superphosphate), MOP (Murate of Potash) in the proportion 130: 250: 60 kg/ha, respectively were applied in the field. To prevent the presence of soil insects BHC 10 (ten) per cent dust were applied along with the last ploughing in proper doses. Borax at the dose of 10 (ten) kg /ha was also applied along with the above fertilizer. The pH of the land was about 6.0.

#### Correspondence to:

K.C. SARMAH, Department of Botany, Mangaldai College, MANGALDAI, (ASSAM) INDIA

#### Authors' affiliations:

C.M. SARMA, Department of Botany, Gawhati University, GUWAHATI (ASSAM) INDIA