

Interaction between GA₃ and CCC on growth, chlorophyll content, yield and oil content of seamum (*Sesamum indicum* L.)

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Accepted : April, 2009

SUMMARY

A field experiment was conducted to study the relative efficacy of PGRs in rapeseed variety M-27. Foliar applications of CCC and ethrel in varying concentrations was tried. CCC at its optimal concentration of 500 µg/ml exhibited better growth and increased the yield while ethrel at its optimal concentration of 100 µg/ml improved the yield. In the experiment CCC registered better growth performance than ethrel.

Key words : PGR (Plant growth regulator), CCC (2- Chloroethyl trimethyl ammonium chloride or Chlorocholine chloride), Ethrel (2- Chloroethyl phosphonic acid), Rapeseed plant variety M-27, Growth and yield.

The rapeseed variety M 27 is an important oil yielding plant. It is largely grown in Assam under normal agroclimatic condition. Though this variety is certified as one of the high yielding variety yet its cultivation has not been done to the extent of meeting the demand. Plants growth substances can modify plant growth and development raising the productivity level of crop on proper application. (Kene *et al.*, 1991). Therefore, the present study was undertaken to assess the uses of two growth regulators CCC and ethrel known as, growth retardants on the growth performance of rapeseed. The plant growth retardant like CCC (2- Chloroethyl trimethyl ammonium chloride or Chlorocholine chloride) and ethrel (2- Chloroethyl phosphonic acid) have found wide application due to their dwarfing properties which help in imparting the lodging resistance (Pandya *et al.*, 1974) of the plants. Besides these effect CCC and ethrel modify the crop canopy and initiates luxurious vegetative growth that may be beneficial for flower initiation and fruiting points. Singh *et al.* (1993) revealed that application of CCC or ethrel on *Brassica napus* improved the translocation of photosynthates from source to sink and thereby produced good yield. Basing on this information the present study was designed to have better knowledge about the effect of CCC and ethrel on *Brassica campestris* cv - M 27 as the average yield has not touched the expected rate in Assam despite the variety M-27 is certified as one of good variety.

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MATERIALS AND METHODS

Healthy seeds of the rapeseed variety M-27 were sown during the month of October (1998) in different plots (plot size 90 cm x 60 cm) in rows in random block design which was replicated three times. The pH of the land was about 6.0. 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 tonnes/ ha and recommended doses of urea, SSP (Superphosphate), MOP (Murate of Potash) in the proportion 13.0: 25.0: 6.0 kg/ha, respectively were applied in the field. To prevent the presence of soil insects BHC 10 per cent dust was applied along with the last ploughing in proper doses. Borax at the dose of 10 kg /ha was also applied along with the above fertilizer.

After 4.0 days of sowing, foliar spray was done with CCC at 50, 100, 250 and 500 µg/ml and ethrel at 10, 50, 100, and 500 µg/ml on the plants. Control samples were sprayed with sterile distilled water.

The seeds were planted in furrows. The row to row and plant to plant spacing were maintained at 3.0 cm and 15 cm, respectively. The net plot size was measured as 9.0 cm x 6.0 cm. In each plot of each replication 6 (six) plants were maintained of which 3 (three) plants were taken for observation.

The parameters studied for the experiments are

- Shoot length (cm)
- Number of leaves / plants
- Number of branches / plants
- Number of pods / plant
- Seed yield q / ha
- Oil content of seeds in percentage.

The mean growth of the plant and yield were worked