Several auxins were tried while tissue culturing experiments were being made for *Trachyspermum ammi*. Murashige & Skoog's medium was supplemented with NAA, 2,4-D, IAA, IBA each with different concentrations i.e. 1.0 mg/l, 3.0 mg/l, 5.0 mg/l respectively. IAA & IBA concentrations were able to induce rooting in the leaf & hypocotyl explants where callusing was negligible. However, the best response was induced by NAA when shoot tip was used as an explant. NAA (3 mg/l) was found optimal for shoot elongation and multiplication as well as for direct rooting.

**Key Words**: *Trachyspermum ammi*, tissue culture.

*Trachyspermum ammi* (Ajowan) which belongs to family Apiaceae (Umbelifereae), is a small annual herb of India. Seeds of Ajowan yield, 2.5-4% essential oil which is valued considerably in medicine because it contains thymol. Besides, it is also used in perfumery. Ajowan seeds are more known as adjuncts used in small amount.

The explants were cultured on MS (Murashige & Skoog, 1962) medium supplemented with different concentrations of different auxins like IAA (3, 5, 7 mg/l) IBA (1, 3, 5 mg/l), 2,4-D (1, 3, 5 mg/l) NAA (1 mg/l & 7 mg/l) were found to be optimal for rooting in leaf & stem explants but IAA (5 mg/l) failed to induce any effect on explants (Fig. 1). IBA (1, 3, 5 mg/l) proved to be useful in inducing rhizogenesis in leaf and stem explants (Fig. 2). Multiple shoots were formed, when stem tip was inoculated on what? However, IBA failed to induce rooting in stem tip cultures. When multiple shoots were inoculated on MS medium supplemented with IAA (5 mg/l) for root induction, they all surprisingly transformed into callus.

No remarkable results were obtained when 2,4-D was incorporated into the medium.

When explants (shoot tip and hypcotyl) were cultured on MS medium supplemented with different concentrations of NAA, they showed considerably good results. Complete root and shoot system was obtained from shoot tip explants cultured on MS medium supplemented with NAA (1, 3, 5 mg/l) but growth was slow on NAA (1 & 5 mg/l), while NAA (3 mg/l) proved optimal for complete plant formation in one-step on NAA (3 mg/l) incorporated into MS medium.

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Figure 1. Rooting induced in leaf explant when IAA (3 mg/l) incorporated into MS medium.
Figure 2. Rooting induced in hypocotyl explants when IBA (3 mg/l) incorporated into MS medium.
Figure 3. Complete plantlet (root and shoot) formation in one-step on NAA (3 mg/l) incorporated into MS medium.
regeneration where root and shoot development was comparatively better than other concentrations. (Fig. 3).

Hypocotyl explants, when cultured on same medium {MS medium + NAA (1, 3, 5 mg/l)} callus was obtained but it was not green and was rather brownish and compact.

Earlier reports show that IAA is responsible for rhizogenesis (Gautheret 1945). Umbelliferous plants. But in case of *T. ammi* when multiple shoots were transferred to IAA (5 mg/l) supplemented MS medium there was formation of pale green callus. This investigation shows helping role of IAA in obtaining callusing, besides its role in rhizogenesis. However, present report highlights peculiar responses of IAA in *T. ammi* where it induced rooting in some explants. Complete plant regeneration in *T. ammi* from somatic embryogenesis has been reported by Jasraj *et al.* (1992) but no attempts have been made for obtaining complete plant regeneration from shoot tip cultures and for this, this present investigation will be helpful.

REFERENCES
