

**THE EFFECTS OF LIGHT AND HORMONE CONCENTRATIONS ON
EMBRYO INDUCTION AND PLANT REGENERATION IN SUNFLOWER
(*Helianthus annuus* L.)**

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ABSTRACT

Cotyledon explants of two hybrid cultivars (Sunbred 281 and Sunbro) of sunflower were used to determine the effect of light conditions and hormonal combinations on regeneration. Sterilized seeds were germinated in dark and in light. Callus cultures were induced on a MS medium supplemented with a combination of NAA (0.5, 1.0 and 1.5 mg/l) and BAP (0.5, 1.0 and 1.5 mg/l) in both dark and light. Shoots regenerated from callus were left for root induction in 1/2 MS medium with NAA. After 4 weeks plantlets were transferred into sterile soil for acclimatisation.

Sunbro produced the highest amount of callus per explant compared with Sunbred 281 ($F=20.05^{**}$). Regeneration of shoot varied from 17% to 0% while rooting efficiency was between 6.8-29.5%. There were also significant interactions between light and cultivars in terms of callus, root and shoot production respectively ($F=5.94^{**}$, $F=14.93^{**}$, 14.55^{**}). Almost 50% of the regenerated shoots selected from randomly chosen plantlets acclimatised to *in vivo* conditions.