

Induction of Phenolic Compounds in Wheat (*Triticum aestivum* L.) Tissue Cultures by Streptomycin

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The tissue cultures of wheat (*Triticum aestivum* L.) were induced from the mature embryos (explants) of the dry grains and grown on MS medium containing kinetin (0.1 mg/l) and 2,4 D (1.0 mg/l). The cultures were incubated for two weeks at (25 ± 2) °C under a light/dark regime (16 h light daily). The formed calli were subcultured at the beginning of the stationary growth phase (15 days) with fresh MS medium containing 0, 5, 10, 25, 50, 100, 150 mg/l streptomycin elicitor and maintained for two weeks for three subcultures. A significant increase in phenylalanine ammonia lyase (PAL) activity coincided with the increase of the total phenolic compounds after elicitation with streptomycin. Maximum induction was recorded during the first two weeks, then gradually declined during the rest of the experimental period, but the values attained were still markedly higher than that of the control. The endogenous cinnamic acid content was also increased significantly with the increase in PAL activity making about 2–18% of the total phenolic acids. The growth and accumulation of phenolic compounds were inversely related. However, accumulation of phenolic compounds became limited for growth of wheat tissue culture especially during the long term cultivation.

Key words: Wheat (*Triticum aestivum*), Tissue Culture, Phenolic Compounds