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### Abstract

Research Title : Factors affecting *in vitro* microrhizome induction of  
*Alpinia galanga* Swartz and *Alpinia nigra* Burrt  
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Twelve to fourteen weeks old *in vitro* multiplication shoots of *Alpinia galanga* Swartz and *Alpinia nigra* Burrt (Noh Kala) were culture in Murashige and Skoog (MS) (1962) medium supplemented with various sucrose concentrations at 30, 60, 90 and 120 g/l. Cultures were incubated under various light durations at 0, 8, 16 and 24 h/day for 12 weeks. Only *in vitro* microrhizome was successfully produced in *Alpinia nigra* Burrt. The concentration of sucrose and photoperiod were found to have a significant effect in the induction of microrhizomes. The results revealed that MS medium supplemented with 120 g/l sucrose with a photoperiod of 24L:0D (light/dark) gave the highest number of shoots and roots at 6.2 shoots and 42 roots/responding plant, respectively. MS medium supplemented with 30 g/l sucrose with a photoperiod for 8, 16 and 24 h/day gave the highest root length at 11.1, 11.3 and 11.4 cm, respectively. The results showed that the highest percentage of microrhizome induction (90%) was obtained from the explants cultured on the medium supplemented with 90 and 120 g/l sucrose and incubated under light regime for 8, 16 and 24 h/day. Starch accumulation in microrhizomes increased with higher sugar concentration and with longer duration of culture.

Keywords : *in vitro*, *Alpinia galanga* Swartz, *Alpinia nigra* Burrt (Noh Kala), microrhizome, Murashige and Skoog (MS)