B-07 Mass propagation of Hinguru-piyali (Kaemferia galanga L) through *in vitro* meristem culture

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Hinguru-Piyali is a rosette type herb with an aromatic, tuberous rootstock. It is an important medicinal plant frequently cultivated in home gardens in Sri Lanka. In Ayurvedic medicine, the rhizome of the plant can be used for several diseases such as dandruff, dyspepsia, headache, malarial chills and also for healing of wounds. People who chew betel use dried pieces for the aroma of the rhizome. The plant rarely produces seeds and is only propagated by vegetative means. Large-scale cultivation of this plant is limited by lack of uniform planting material. The present work describes an effective method developed for rapid multiplication of Hinguru-Piyali.

Shoot-meristems (1.5 mm) of Hinguru-Piyali were asepetically cultured in MS (Murashige and Skoog, 1962) medium supplemented with cytokinin, BAP (0.01-1 mg/l) and auxin, IBA or NAA (0.1-0.5 mg/1) for primary culture establishment. Early and satisfactory shoot formation was observed in medium containing BAP (0.3 mg/l) and IBA (0.15 mg/l) within 5-6 weeks of culture. These single shoots were transferred to shoot proliferation media (MS) containing BAP (0.1-10 mg/l) and NAA or IBA (0.1-1 mg/l). The medium containing BAP (2 mg/l) with NAA (0.5 mg/l) produced the highest number of uniform shoots (approximately 10-20) within a period of 5-6 weeks of transfer. The shoots were separated and transferred to media (MS) containing BAP (0.0-1 mg/l) and IBA or NAA (0.0-0.5 mg/l) for root formation. The best root formation of 6-8 roots were visible within 4-6 weeks of subculture in the medium containing BAP (0.4 mg/l) and IBA (0.2 mg/l). All the media (pH 5.7) were solidified with agar (0.8% w/v) and cultures were incubated under fluorescent light (3000 Lux for 16 h) at 26 ± 1°C.

Finally the plants were successfully established in soil mixture of sand: topsoil: compost, 1:1:1 with a high rate of survival (80-90%).