Micropropagation of Garlic (*Allium sativum*)©

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Garlic has a plant regeneration system which is described in textbooks for micropropagation. However, this tissue-culture protocol is not currently popular and growers have seeded parts of crops for a long time. The reasons for this are: the previous tissue culture regeneration system is not efficient, it is hard to plant at a suitable time, and the culture period is very long. This report describes the development of a useful system. A "useful system" means that it is easier to obtain materials, the contamination rate of the materials is lower, the cultivated period is shorter, the frequency of regeneration is greater, it is easier to establish in the field, and the seeded time doesn't depended on cultivated plantlets.

MATERIALS AND METHODS

Over 100 cultivars are cultivated and kept at Mie University Farm. Several cultivars on sulphoxides were selected and used for three experiments. Basal plates of bulb approximately 1 mm thick and 5×5 mm^2 were excited aseptically. Each plate was cultured on the surface of semisolid MS (Murashige and Skoog) medium supplemented with plant growth regulators. Cultures were incubated at 26±2°C under 4000 lux and 16 h of light.

RESULTS AND DISCUSSION

Basal plates excised from bulbs and root tips were examined for callus induction, increase potency, bulblet formation, and vertical difference. Although the average callus inductive term is 60.7 days, it is different among cultivars. Callus increased three times for 1 month on average. The range of bulblets obtained was 5.4 to 47.6 from one piece of basal plate and the average was 19. Bulblets can be kept until planting and can be planted in soil like seeds. Bulblets over 4 mm in diameter were successfully transferred to soil and grown to maturity.