

□ **CP-78**

**Influence of sucrose concentration on long-term sweet potato cultures**

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Virus-free sweet potato plants are being maintained in culture to supply clean plantlets to local growers. However, between requests for plant material a system was needed to control growth and increase the intervals between transfers. Long-term in vitro maintenance, on MS medium containing 0-12% sucrose, was used to evaluate shoot growth over time on four sweet potato cultivars. Sucrose levels above 6% were expected to impose an osmotic stress to suppress growth. However, sucrose levels from 2-12% had no influence on controlling in vitro growth and development over time. Having no sucrose in the medium resulted in minimal growth but was lethal to 50% or more of the cultures. The rate of root growth and leaf development was significantly reduced on sucrose levels from 0.1-0.3%. These low sucrose levels controlled the rate of growth and extended the interval between transfers from monthly, on 3% sucrose, to 8-12 months on 0.1-0.3% sucrose. Shoots actively grew when transferred back to a 3% sucrose medium. Low sucrose concentrations can be used to control growth of sweet potato and extend the intervals between transfers in vitro.

**Key Words:** in vitro, tissue culture, carbohydrate