

Effect of NaCl on axillary shoot proliferation in sweetpotato

Archana Mukherjee

ABSTRACT

Micropropagation through axillary shoot proliferation is a simple technique and also ensures genetic stability of the propagules. To enhance the rate of multiplication, different doses of sucrose and NaCl were used for axillary shoot proliferation in sweetpotato. Murashige and Skoog's basal medium supplemented with growth regulators – NAA (0.5 mg/l) + BA (1 mg/l) + GA₃ (0.5 mg/l) and variable doses of sucrose and NaCl were used for the study. Of the different doses tested, bud dormancy was minimum with 4% sucrose, however, the overall shoot multiplication rate was optimal with 3% sucrose. Though the days required to bud break were considerably stable up to 0.5 g/l of NaCl supplementation and with 3% sucrose, the mean number of shoots produced per explant improved (3.5 – 5.5 shoots/explant) with increasing NaCl level up to 1 g/l irrespective of the genotype tested. High rate of multiplication and also to use axillary meristem as target tissue for genetic transformation. Delayed bud break response with 2 g/l NaCl supplementation can be exploited for in vitro storage of sweetpotato.

INTRODUCTION

Sweetpotato is a nutritionally rich, high energy food crop grown in wide agro-ecological conditions. Cultivation of this crop gaining world wide importance as the base material for food, feed and industrial products. In vitro propagation methods are being routinely used for sweetpotato for storage as well as exchange of genetic resources in the International Laboratories of Root and Tuber Crops (Kuo, 1991; Mukherjee, 1999a). Propagation through axillary or apical bud proliferation (Henderson et al., 1984; Griffith and Slack, 1990; Mukherjee et al., 2000) through adventitious organogenesis (Gosukonda et al., 1995)

Correspondence: Address: