

ABSTRACT

Metabolism of plants grown *in vitro* is affected by the composition of culture medium. Beside essential nutrients culture medium are often composed of sucrose as well. The aim of this study was to find out, if additional source of carbon-sucrose affected activity of phosphoenolpyruvate carboxylase (PEPC, EC 4.1.1.31), NADP-malic enzyme (NADP-ME, EC 1.1.1.40), and pyruvate, phosphate dikinase (PPDK, EC 2.7.9.1). Activities of these enzymes were determined in different parts of tobacco plants (*Nicotiana tabacum* L., cv. Petit Havana SR1) grown *in vitro* in culture medium: Murashige-Skoog agar containing sucrose (SR1+S) and in plants grown without sucrose (SR1-S). Fresh weight activity and specific activity of studied enzymes in SR1+S plants were increased. In upper leaves fresh weight activity of PEPC, NADP-ME and PPDK was increased 1.7-times, 1.4-times and 1.9-times, respectively. Also the protein content was higher in SR1+S plants. The results indicate that metabolic pathways catalyzed by these enzymes are in the presence of sucrose more involved.

Key words: *Nicotiana tabacum*, L., NADP-ME, PEPC, PPDK, sucrose