

Abstract

Elicitation is one of the methods used for increasing the production of secondary metabolites *in vitro* cultures. The aim of this work is to evaluate the effect of abiotic elicitor methylviologen (paraquat) on the production of flavonoids in callus and suspension cultures of *Fagopyrum esculentum* Moench., variety *Pyra*. The cultures were cultivated in Murashige and Skoog nutrient medium with addition of 2,4-D in concentration of 1 mg/l as a growth regulator. Elicitor was added as a solution in three different concentrations ($c_1 = 2.1929 \cdot 10^{-4}$ mol/l, $c_2 = 2.1929 \cdot 10^{-3}$ mol/l and $c_3 = 2.1929 \cdot 10^{-2}$ mol/l). The effect of elicitation on rutin production was monitored in six time intervals: 6, 12, 24, 48, 72 and 168 hours. The rutin content was determined by HPLC analysis. No rutin was produced in callus and suspension cultures without the presence of elicitor. Even after the elicitation, there was no statistically significant increase in the production of rutin. The maximum rutin content was detected in the suspension culture after 12 hours of elicitor treatment in c_2 concentration, the content was 0.1 mg/g DW. The release of rutin into the nutrient medium was also not observed.