Abstract

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Effect of 2-benzylthiopyridine-4-carbothioamide derivatives on isoflavonoids and flavonoids accumulation in suspension culture of *Trifolium pratense* L.

The paper examinate the effect of three concentration of 2-(2-fluoro-6-nitrobenzylsulfanyl) pyridine-4-carbothioamide on the production of flavonoids and isoflavonoids by the *Trifolium patense* L. (variety DO-8, variety Tempus).

The culture were cultivated in the Gamborg nutrient media with addition of 2 $mg \cdot l^{-1}$ 2,4-dichlorophenoxyacetic acid a 2 $mg \cdot l^{-1}$ 6-benzylaminopurine, at the temperature of 25°C, 16-hr light/8-hr dark period. The elicited and the inspection samples underwent the photometric determination of flavonoids in accordance with the Czech Pharmacopoeia 2009 ant the determination of isoflavonoids via the HPLC method.

The results show that the maximum content of flavonoids in suspension cultures of *Trifolium pratense* L. (variety DO-8) was caused by 48-hour elicitation by 100 $\mu mol \cdot l^{-1}$ solution of 2-(2-fluoro-6-nitrobenzylsulfanyl) pyridine-4-carbothioamide, when the a statistically significant increase in production was 93% compared to control cultures. The maximum content of flavonoids in variety Tempus was caused by 48-hour elicitation by 10 $\mu mol \cdot l^{-1}$ solution of 2-(2-fluoro-6-nitrobenzylsulfanyl) pyridine-4-carbothioamide, when a statistically significant increase in production was 438% compared to control cultures. The elicitation effect on the production of isoflavones was not at all significant.