

## Effect of NAA, kinetin and three elicitors on the growth and production of flavour compounds from leech lime (*Citrus hystrix*) calli

### ABSTRACT

Treatment of the leech lime (*Citrus hystrix*) callus with 1.0 mg/L (w/v) kinetin exhibited the maximum growth ( $0.415 \pm 0.09$  g fwt.) compared to all treatments with naphthaleneacetic acid (NAA). Analysis using gas chromatography (GC) showed that treatment with kinetin inhibited the synthesis of flavour compounds. On the other hand, treatment with 5.0 mg/L (w/v) NAA gave the highest production of cyclohexanol ( $4.16 \pm 0.03$  g/g fwt.), p-cymene ( $5.13 \pm 0.98$  g/g fwt.) and limonene ( $1.83 \pm 0.19$  g/g fwt.). Addition of various concentrations of individual elicitors such as yeast extract and agarose into the medium decreased the callus growth. However, treatment of callus with 0.3% (w/v) alginate resulted in higher callus growth ( $0.88 \pm 0.1$  g fwt.) compared to control. Among the three different elicitors tested, only treatment with yeast extract was able to increase the number of flavour compounds and two new compounds were synthesised compared to the control. The quantities of flavour compounds produced also varied depending on the concentration of elicitor used.

**Keyword:** *Citrus hystrix*; Phytohormones; Elicitors; Flavour compounds