



**Influence of phytohormone on growth and active constituents of sage (*Salvia officinalis*), parsley (*Petroselinum crispum*) and nasturtium (*Tropaeolum majus*)**

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**Abstract:** A field experiment was conducted to study the effect of foliar application of methyl jasmonate on growth traits, essential oil content and oil composition of sage (*Salvia officinalis*) and curly parsley (*Petroselinum crispum*) plants cultivated in Egypt. Also, growth traits and glucotropaeolin content of nasturtium (*Tropaeolum majus*) were investigated.

Nasturtium is the most affected plant by methyl jasmonate application. Methyl jasmonate applied as foliar sprays at 100 and 200 ppm exhibited positive effects on all the growth parameters. Glucotropaeolin content in plants treated with 100 or 200 ppm methyl-jasmonate was higher than that found in control plants.

Methyl jasmonate had no significant effect with regard to oil percent % and dry matter % of sage and parsley. Parsley was less responsive to methyl jasmonate application than nasturtium. Foliar application of 200 ppm methyl jasmonate significantly improved myristicin content by 42% in the oil, but reduced the remaining components. Parsley plants sprayed with 100 ppm methyl jasmonate showed an increase in  $\beta$ -phellandrene content of the oil by about 79%, with a corresponding reduction in the content of 1,3-menthatriene by 19%.

Methyl jasmonate had no significant effect on all growth parameters of sage plants. The lower concentration of methyl jasmonate (100 ppm) resulted in the lowest total terpene content and the maximum value was obtained from control plants. Application of methyl jasmonate had no significant effect on the major components of sage essential oil.

**Keywords:** Sage, Parsley, Nasturtium, Phytohormones, Essential oil, Flavones, Glucotropaeolin.

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