

**Title** Influence of methyl jasmonate in conjunction with ethanol on the formation of volatile compounds in berries belonging to the Rosaceae

**Author** Gracia Patricia Blanch, Gema Flores and María Luisa Ruiz del Castillo

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### **Abstract**

The effect of methyl jasmonate in combination with ethanol on the formation of aroma constituents in berryfruit belonging to the Rosaceae was investigated. Postharvest treatments of raspberries, strawberries and blackberries were carried out. After evaluating the aromatic fractions of the berries, esters and terpenes were the most abundant compounds. There were different effects of the treatment according to the berry species. In contrast to raspberries, which exhibited a significant decline ( $p < 0.05$ ) in the total amount of volatiles after treatment, a significant ( $p < 0.05$ ) enhancement of total volatile compounds was observed in strawberries, while no significant effect was found in blackberries. Esters and terpene compounds responded similarly in strawberries and blackberries suggesting similarity in the biochemistry of their aroma synthesis. In contrast, raspberry volatile compounds showed a different pattern, reflecting different biosynthetic pathways for aroma formation in raspberry. The natural volatile compounds, methyl jasmonate and ethanol, seemed to have either promoting effects on the formation of the (-)-enantiomers of chiral terpenes and ionones or inhibitory effects on the synthesis of the corresponding (+)-enantiomers.