



Yield and composition of the essential oil from mint (*Mentha x villosa*) in monocrop and intercrop with vegetables

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Keywords: *Rumex acetosa*, *Lactuca sativa*, chemical composition, essential oil, intercropping system.

The intercrop between vegetables and medicinal plants can promote beneficial interactions among plants of results in diversification of products for different markets and ensure a more secure and continuous source of income for small farmers (1). Therefore we have chosen lettuce (*Lactuca sativa* L.), azedinha (little bitter - *Rumex acetosa* L.) and mint (*Mentha x villosa*) to evaluate the efficiency of intercropping. Lettuce is the leafy vegetable economically most important in Brazil, being cultivated in almost all regions of the country. Mint is a medicinal plant from Europe and cultivated in Brazil because of its essential oil medicinal properties. Environmental stimulus may redirect the metabolic pathway promoting the biosynthesis of different compounds and influencing essential oil composition and yield. The intercrop is a usual agriculture practice in Brazil and may influence the oil composition and yield (2). The influence of intercropped was verified between lettuce, azedinha and mint on the yield and on essential oils composition of mint. The experiment was carried out from August to December 2014 in Prudente de Morais, State of MG, Brazil. Treatments consisted in intercropping between lettuce, azedinha, mint and monocultures of each species in spacing 0.25 x 0.25 m. Lettuce was harvested on October, azedinha on November and mint on December. The mint essential oil was analyzed by GC/FID and GC/MS. Oil components were identified by comparison of both mass spectra and linear retention indices with spectral library and literature. Oil yield were 0.19%, 0.14% and 0.21% for intercropping between mint and lettuce, mint and *azedinha* and mint monocrop, respectively. The intercropping between mint and lettuce increased piperitenone oxide content (79%) of mint oil when compared with the mint monocrop (52%). The intercrop between mint and lettuce is feasible, since the yield of both species is similar between cropping and intercropping systems, with no change in yield of the essential oil and increase the chemical constituent of interest in the mint oil.

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Acknowledgements: FAPEMIG and CNPq.