

[The effect of bio-extract from cabbage waste on growth, yield and quality of volatile oil extracted from Mentha spicata and Mentha arvensis var. piperascens](#)

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Abstract: The purpose of this study was to determine the effect of bio-extract produced from cabbage waste on the leaf biomass, yield and chemical compositions of volatile oils from spearmint (*Mentha spicata* L.) and Japanese mint (*Mentha arvensis* L. var. *piperascens* Malinv.). The spearmint and Japanese mint were grown in an open field and supplemented with three different fertilizers: bio-extract from cabbage waste, sulphur fertilizer, and a combination of sulphur fertilizer and bio-extract from cabbage waste. The plants were harvested during flowering and were analysed to determine the biomass and oil productivity. We determined that the bio-extract from cabbage waste was an effective nutrient supplement for the cultivation of spearmint and Japanese mint. For spearmint, use of the bio-extract yielded the greatest productivity of volatile oil since it resulted in the highest quantity of leaf biomass and in a high quantity of volatile oil with the greatest carvone content. For Japanese mint, the bio-extract yielded volatile oil with a menthol content equivalent to that of other supplements and we determined that application of bio-extract along with sulphur fertilizer was appropriate to enhance the biomass for Japanese mint.

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