

## Study of the Allelopathic Effects of Certain Aromatic Plants on Grapevines

**Authors :** Tinatin Shengelia, Mzia Beruashvili

**Abstract :** In organic farming, including organic viticulture, biodiversity plays a crucial role. Properly selected 'companion' and helper plants create favorable conditions for the growth and development of the main crop. Additionally, they can provide protection from pests and diseases, suppress weeds, improve the crop's visual and taste characteristics, enhance nutrient absorption from the soil, and, as a result of all these factors, increase yields. The use of companion plants is particularly relevant for organic farms, where the range of pesticides and fertilizers is significantly restricted by organic regulations, and they must be replaced with alternative, environmentally safe methods. Therefore, the aim of this research was to study the allelopathic effects of companion aromatic plants on grapevines. The research employed methods used in organic farming and the biological control of harmful organisms. The experiments were conducted in control and experimental plots, each with three replications on equal areas (50 m<sup>2</sup>). The allelopathic potential of medicinal hyssop (*Hyssopus officinalis*), basil (*Ocimum basilicum*), marigold or Imeretian saffron (*Tagetes patula*), and lavender (*Lavandula angustifolia* L.) was studied in vineyards located in the Mtskheta-Mtianeti and Kakheti regions. The impact of these plants on grapevines (*Vitis vinifera* L.) (variety Muscat petitgrain), their growth and development according to the BBCH scale, yields, and diseases caused by certain pathogenic microorganisms (downy mildew, powdery mildew, anthracnose) were determined. Additionally, the biological, agricultural, and economic efficiency of using these companion plants was assessed.

**Keywords :** organic farming, biodiversity, allelopathy, aromatic plants

**Conference Title :** ICAB 2024 : International Conference on Agriculture and Biotechnology

**Conference Location :** Montreal, Canada

**Conference Dates :** October 28-29, 2024