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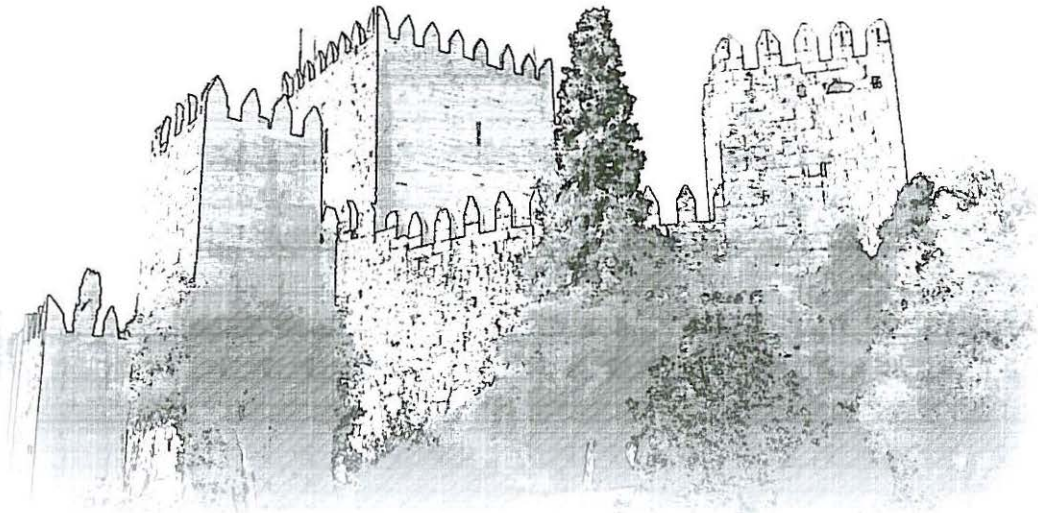
Book of Abstracts



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P2F1 Effect of nitrogen, phosphorus, potassium and boron fertilizers on essential oils yield in Lemon verbena (*Aloysia triphylla*).

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Essential oils (EO) are liquid mixtures of volatile compounds obtained from aromatic plants. They constitute what is called the "essence" of a plant and usually have pleasantly scented fragrances[1]. The chemical composition of the EO extracted from Lemon verbena [*Aloysia triphylla* (L'Her) Britton], has been frequently studied because the aerial parts of this plant are used in folk medicine. Lemon verbena is an herbal species indigenous to South America which was introduced into Europe at 17th century[2]. It has been cultivated mainly due to the lemon-like aroma and utilized for herbal tea, which is reputed to have antispasmodic, antipyretic, sedative and digestive properties[3]. The aim of this study was to determine the accumulation of EO in Lemon verbena growth under different fertilizer regimes of nitrogen (N), phosphorus (P), potassium (K) and boron (B). All the nutrients were applied as liquid organic fertilizers. The nutrient solution was applied in soil surface through the holes made in the anti-weeds plastic mulch by where the plants grow. The nutrients were applied at the rates: 0, 37.5, 75 and 112.5 kg N ha^{-1}; 0, 37.5 and 75 kg P_2O_5 ha^{-1}; 0, 37.5 and 75 kg K_2O ha^{-1}; and 0.75 and 1.5 kg B ha^{-1}. The total rates of fertilizers were fractionated into three applications during the growing season. The experimental design included three replications of all fertilizer treatments. Field samples, 5 to 6 individual plants were collected, weighed and dried. The determination of the EO yield was performed by the hydro-distilled process. The plant material was subjected to extraction for 3 h using a Clevenger-type apparatus. The results here presented should be considered preliminary. However, it seems that the increase in biomass due to the increasing rates of N, P and B decreased the oil content in the plant. For K treatment, that relationship was not found. The high oil yields were found from the samples coming from the most productive plots.

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