

The effect of spraying with plant extracts and tryptophan on some growth characteristics and the content of *Vitex agnus-castus* L. plant and volatile oil.

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I. Abstract

This study was conducted at the College of Agriculture, University of Basrah, during the 2023-2024 season. It aimed to investigate the effects of different levels of the amino acid tryptophan, sage extract, and anise extract on vegetative growth indicators and the volatile oil content of the leaves of the chaste tree (*Vitex agnus-castus* L.). A Randomized Complete Block Design (R.C.B.D.) with three factors and three replicates was used. The means were compared using the Least Significant Difference (L.S.D.) test at a probability level of 0.05. The results showed that:

Treatment with the amino acid tryptophan led to the highest rates of fresh and dry weight, and also recorded an increase in volatile oil weight. It was also found that treatment with sage extract improved growth characteristics and the volatile oil content of the leaves. Similarly, the use of anise extract was observed to positively affect plant characteristics and its volatile oil content.

The results indicated that the combined treatments between the binary and tertiary factors significantly stimulated an increase in the rate of fresh and dry weight of the plant and the rate of volatile oil weight in the leaves.

The study concluded that the use of the amino acid tryptophan and plant extracts in the chaste tree stimulated the improvement of vegetative growth characteristics, which was reflected in a significant increase in the oil content of the leaves.

Keywords: Plant extracts, amino acids, *Vitex agnus-castus*

II. Introduction

Vitex agnus-castus, commonly known as chaste tree or monk's pepper, is considered one of the most important aromatic trees belonging to the group of medicinal plants widely known in the Middle East and Europe (Souto et al., 2020). It is also a deciduous plant that generally grows in humid places, valleys, and coastal areas (Dogan et al., 2011). Its original habitat is considered to be the Mediterranean region or the banks of rivers in Southern Europe. It is also found in tropical, subtropical, and temperate regions. In Iraq, it has been found in Baghdad, Erbil, Sulaymaniyah, Kirkuk, Mosul, and Khanaqin (Al Rawi, 1988).

