A COMPARISON ON EFFECT OF THE THIOBACILUS BIOLOGICAL FERTILIZER AND SUPERABSORBENT ON THE MORPHOLOGICAL TRAITS AND ESSENTIAL OIL YIELD OF *THYMUS VULGARIS* *T. DAENENSIS*

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Nowadays there demands of medicinal plants are increasing; therefore human consumption of medicinal plants is increasing rapidly for their food and industrial benefits. Thyme plant is one of the most important of medicinal plants and today's products of this plant have grown in number and importance. Thymol and carvacrol are two main compounds existing in the essential oil of thyme because of their pharmaceutical and industrial applications. So, mass production of medicinal plants considering maintenance and preservation of natural resources is of vital importance. Proper and optimal fertilization using biological fertilizers is among numerous factors involved in this concern.

Sulphur is extremely important element to plant growth and soil health and needs to be oxidized in order to be absorbed by plants. The most important organisms for this concern are a group of bacteria belonging to the genus *Thiobacillus*. In order to study effect of biological fertilizers on Morphological and percentage of essence on two species of medicinal *thyme* plant, an experiment was carried out in the basis of factorial randomized complete block design with 3 replications in Greenhouse, located in Karaj. The tested factors were: two species of medicinal *thyme* plant (*Thymus daenensis* and *Thymus vulgaris*), *Thiobacillus* at two levels (inoculated, non-inoculated) and Superabsorbent with three levels (0, 0.5, 1 gr/kg soil). In this study, some variables such as Number of branches, crown diameter, leaf area and Percentage of essences were measured. The result showed a Superabsorbent treatment for at least 1% of the leaf area And crown diameter, number and percent of peripheral branches Was significant at the 5% level. *Thiobacillus* treatment and Super Absorbent with *Thiobacillus* For all traits Was significant at the 5% level. Superabsorbent treatment the value 1 gr/kg soil 1% for leaf area was significant. treatment and Super Absorbent with *Thiobacillus* The value 1 gr/kg soil Works better than the other levels On all the attributes And species of *Thymus vulgaris* Higher than *thymus daenensis*.

References

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