

The Effect of Different Organic Matter on the Seed Emergence and Some Vegetative and Qualitative Traits of *Lepidium sativum*

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Abstract

Background and Objectives

Garden cress is believed to have very useful nutritive impacts on human and the quantity of minerals, protein, necessary amino and fat acids. Application of organic and mineral materials in culture media plays an effective role in increasing yield and effective materials of the plants. Therefore, in the present study, the effect of agricultural by product and wastages such as spent mushroom compost, Rotten manure and rice bran was evaluated in different ratios with soil on seed emergence and vegetative and qualitative properties of Garden cress.

Materials and Methods

In order to study the effect of different culture media on the seed emergence and vegetative and qualitative properties of Garden cress (*Lepidium sativum*), various media including field soil, rice bran, Rotten manure and spent mushroom compost (SMC) were used in eight different compound and ratios. The experiment was performed in a completely randomized design with three replications.

Results

The results showed that the highest length and width of leaves and plant height was observed in the treatments of field soil alone, 1.3 field soil + 1.3 rice bran + 1.3 spent mushroom compost, 1.2 field soil + 1.2 spent mushroom compost, and the lowest amount was related to the treatment of 1.3 field soil + 1.3 Rotten manure + 1.3 rice bran. Also, the highest and the lowest percentages of seed emergence were observed in the treatment of 1.3 field soil + 1.3 rice bran + 1.3 spent mushroom compost, and 1.2 field soil + 1.2 Rotten manure, respectively. The highest of Cu and the lowest of Ca and Mn were obtained in 1.3 field soil + 1.3 Rotten manure + 1.3 spent mushroom compost. The lowest of Cu and Zn were observed in field soil + Rotten manure + rice bran + spent mushroom compost.

Discussions

The results indicated that the different culture media had various effects on the nutrients content. According to the results of this experiment, using spent mushroom compost in soil for different purposes will cause short and long term changes in soil properties. The existing high levels of organic matter and nutrients can have positive effects on the physical and chemical properties of soil and cultivated plants and can replace many conventional beds.

Keywords: Garden soil, Rice bran, Rotten manure, Spent mushroom compost.