University of Zabol

Graduate school
Faculty of Agriculture
Department of Horticultural Sciences

The Thesis Submitted for the Degree of Master of Science
In the field of Horticultural Science-Medicinal Plants

Title:

Effects of organic and chemical fertilizers on quantitative traits of seedless barberry in on-year (large yield)

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Abstract:

In order to investigate the effects of chemical, organic and biological fertilizers on quantitative and qualitative properties of Barberry herb, a split plot experiment in a randomized complete block design with three replications was conducted in commercial gardens in Qaynat city. , Was conducted during the crop year 1394-1395. The main plot of the experiment consisted of four fertilizer application methods (1-no fertilizer, 2 fertilizers, 3 organic fertilizers (bovine) and 4 to 50% fertilizer (plot 2) + 50% organic fertilizer (plot 3). The subplots included 1 - no biofertilizers and 3 fatty acids, 2 - organic fertilizers, 3 - acid - humic and 4 - bio fertilizers + earthworms. The measured characteristics included cub length, leaf length, number of cubes per spike, number of spikes per branch, fresh weight of 100 cubes, dry weight of 100 cubes, product yield, yield of the product with the branch, dry yield of the crop (yield Economic number), number of fertile branches per well, number of non-fertile branches per well, non-fertile branches to fertile branches, fruit juice index (MI), TSS index in fruit, pH of fruit, acidity The total fruit (TA), total carbohydrate / total acidity (TA) ratio in fruit, the amount of protein and carbohydrates, and the amount of photosynthetic pigmentation of leaves (chlorophyll a, b, total chlorophyll and carotenoids), anthocyanin, Nvyyd, phenol, ascorbic acid, the amount of mineral elements nitrogen, phosphorus and potassium fruits, ash, percentage of fruit dry weight were measured. Main and sub-fertilizer treatments had a significant effect at the probability level of one percent on most measured traits. The mean of data showed that the highest amount of anthocyanins, vitamin C, ash, pH and fruit length, as well as fresh and dry weight of 100 cubes, had more yield than shoots, and yielded more and dried cabbage. The application of 50% of the amount of chemical and animal fertilizer + phosphate-supplemented + 2 axiomyomic was applied. The highest amount of chlorophyll a, total chlorophyll and carotenoids of leaf, as well as flavonoid, phosphorus, potassium, carbohydrate, TSS, fruit juice index (MI) and sugar ratio to fruit acid and number of cabbage per spike, spike in branch and branch Fertilizer in Eshteh, was observed in livestock manure treatment + oxidative 2+ phosphate supplementation. The treatments were 50% (chemical manure + chemical) + ecosystems with the highest chlorophyll b leaf and the highest nitrogen, protein and dry matter of the fruit. The 2+ oxidation + phosphate fertilizer treatment had the maximum number of unloaded branches (fertile branch of the next year) and the ratio of fertile branch to load without straw. Ashidiosic treatments had the highest leaf length with vermicompost, Fertilizer + Phosphate Fertilizer 2 had the highest acidity of the fruits, and the oxidation + manure + had the highest total phenol content of the fruit. According to these findings, it can be said that 50% (manure + chemical) + phosphate supplemented + oxidative and manure + phosphate supplemented + 2 + oxidative, respectively, have positive effects on the traits related to yield and fruit quality, The best treatments were. Although 50% (manure + chemical +) + phosphate-containing 2 + phosphate treatment had the highest anthocyanin and vitamin C in fruit.

Key words: Animal manure, Anthocyanin, Barberry, Humic acid, Fertilizer phosphate 2, Medicinal plant, soluble solids.