Abstract:

In order to study the effects of chemical and nano- biofertilizer on quantitative and qualitative yield of sunflower cultivars, an experiment was conducted in the field of Agricultural Research Institute of Zabol University (chah nime) at cropping season of the year 2014 asfactorial based on randomized complete block design with three replications. Treatments consisted of five levels of chemical fertilizer and nano-biofertilizer includes: 100 percent of the recommended amount of fertilizer (A), 75 percent of the recommended amount of fertilizer with nano-biofertilizer (B), 50 percent of the recommended amount of fertilizer with nano-biofertilizer (C), 25 percent of the recommended amount of fertilizer with nano-biofertilizer (D), nano-biofertilizer alone (E) and three cultivars of sunflower includes: master and two land races of shahrood and sabzevar. The results showed that B treatment enhanced many quantitative characteristics, such as diameter, and weight of tray weight, 1000-seed weight, yield and plant height, protein content and was. The best amount of chlorophyll and stem weight was belong to A treatment. The results showed that protein content of seed increased by reducing of fertilizer consumption but had no effect on seed oil percentage. Among the cultivars, land race of Sabzevar had highest protein and lowest oil percentage. It can be stated with 25% reduction of chemical fertilizers, while maintaining high performance, environmentally adverse effects resulting from the use of chemical fertilizers to minimize and take a step towards the development of sustainable agriculture.

Keyword: Nano- biofertilizer, Chemical fertilizer, yield, Sunflower

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Effect of nano- biologic and chemical fertilizers different levels on quantitative and qualitative yield of sunflower varieties

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