

Abstract

In order to study the effects of nano-biological and chemical fertilizers' on Morphology and physiological characteristics of Borage; a split plot experiment in a randomized complete block design was conducted, with three replications at the Research Farm of Zabol University, located in Chahnymea, in 2015. Drought stress was main factors including control (90% of field capacity), moderate stress (70 percent of field capacity) and 50% of field capacity (high tension) (Measurement using T.D.R). The subplots were the fertilizer contains no fertilizer (control), consumption of 1 kg of fertilizer per hectare bio-nano (Byuzar), 5 kg per hectare fertilizer NPK Nano and combination of 50% of NPK Nano and 50% bio-nano. The results showed that the effect of fertilizer interaction in drought stress on plant height, flower number and amount of flavonoids was significant. The highest plant high and amount of flavonoids under the stress was obtained in the application of integrated fertilizer (50% nano-bio + 50% nano NPK). The highest production of flower was acheived in the use of nano NPK fertilizer under the 90% of field capacity. Drought stress affects the yield and resulted in yield decreasing. Among fertilizer treatments the greatest dry matter production was observed at the plant fertilized with nano NPK. In addition, drough influenced mucilage percentage and improved this parameter. Generally, if we seek for quantity target irrigation at 90 percent of FC and application of nano NPK and if we expect quality parameters irrigation at 50 percent of FC and 50 percent of nano NPK is suitable.

Key Word: Drought Stress, Mucilage, Flavonoide, Nano-bio-fertilizer



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Effects of nano bio and chemical fertilizers on morphological
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