

## Abstract

In order to Evaluate organic manure, biological and chemical fertilizers on quantitative and qualitative characteristics of isabgol, an experiment in a randomized complete block design with 4 replicates was performed at University of Zabol in 2011 crop year. Fertilizers included vermicompost ( $10 \text{ t ha}^{-1}$ ), manure ( $20 \text{ t ha}^{-1}$ ), Biological fertilizer of phosphate-E-barvar 2 ( $100 \text{ g ha}^{-1}$ ), Biological fertilizer of phosphate-E-barvar 3 ( $100 \text{ g ha}^{-1}$ ), Triple super phosphate ( $50 \text{ Kg ha}^{-1}$ ), and control. After harvesting, the seeds were devoluted to the laboratory and the viability of seed were examined. Results showed that effect of fertilizers on root length, fresh and dry weight of root, spike length, number of spikes per plant, number of seed per spike, crop yeald, seed yeald per hectare and fresh and dry weight of plant was highly significant, and this effect was significant on plant height, number of plant tiller and thousand grain weight. The effect of organic fertilizers on these propertiese was highest than others. The effect of organic fertilizer on seed qualitative traits such as mucilage percentage, inflation factor, inflation rate, nutrient contant in seeds (nitrogen, phosphorus and potassium), and seeds protein and carbohydrate was highest than other fertilizers. High performance fluorescence, variable fluorescence, fluorescence maximum, number of Chlorophyll reading, Chlorophyll a and the least initial fluorescence was from treatment of the organic manure, and the highest Chlorophyll b related to vermicompost. The effect of fertilizers on chlorophyll b and total chlorophyll was very significant and the vermicompost effect was highest than others. Iridoid glycoside in the leaves of isabgol were measured by GC. Fertilizers had different effect on substance ingrediente. the Results showed that the effect of fertilizers on this active ingredients was highly significant. So the highest concentration of arborescoside and geniposidic acid was obtained from Biological fertilizer of phosphate-E-barvar 2, and Catalpol, Aucubin and echinacoside was obtained from Biological fertilizer of phosphate-E-barvar 3. Organic fertilizer Produced heighest majoroside and verbacoside. gardoside and melittoside was obtained at the control. Highest mussaenosidic acid related to Triple super phosphate. The effect of fertilizers on the capability of seed was also very significant, that the greatest root length, root dry weight and germination rate was obtained at the Biological fertilizer of phosphate-E-barvar 2, and the low electrical conductivity (the highest seed power) related to Biological fertilizer of phosphate-E-barvar 3. The effect of the organic manure on the lenth of stems, shoot dry weight and germination, was highest than other fertilizers.

**Keywords:** Iridoid, chlorophyll index, quantitative and qualitative characteristics, seed capabilities



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