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ORIGINAL ARTICLE

Effects of Biological and Chemical Fertilizers Nitrogen on Growth, Yield Quality and Quantity in Cumin (*Cuminum Cyminum* L.)

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KEYWORDS

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ABSTRACT: Considering the importance of medicinal plants growth and biological application of fertilizers with sustainable agricultural production in order to eliminate or reduce chemical input to achieve desirable and sustainable quality, an experimental research was conducted based on a randomized complete block design with two factors of chemical nitrogen (46% urea nitrogen) at two levels (Zero, 25 and 50 kg/ha^{-1}), biological nitrogen (*Azotobacter*) with trade name Nitroxin at 2 levels inoculated and non-inoculated in 2011. The results of analysis of variance showed that the effects of biological fertilizers (*Azotobacter*) Nitroxin of chemical (urea 46%) nitrogen in different treatments on plant height, umbel number per plant, grain number per umbel, biological yield, grain yield, harvest index (HI) and essential oil yield were significant at P≤0.01. The results showed that the greatest plant highest (28.18 cm), biological yield (201.187 g.m^2), grain yield (75.600 g.m^2) and essential oil yield (2.115 g.m^2) were obtained by a treatment of Nitroxin + chemical nitrogen (25 kg/ha^{-1}). In general, the results of the present study revealed that application of biological fertilizers plays a remarkable role in improving yield quality and quantity in Cumin and can be viewed as a suitable replacement for chemical fertilizers.

INTRODUCTION

Medicinal plants are used to cure many ailments that are either non-curable or seldomly cured through modern systems of medicine.

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