

INFLUENCE OF BIO AND CHEMICAL NITROGEN FERTILIZERS ON THE GROWTH, YIELD AND ACTIVE CONSTITUENTS OF Ammi visnaga L. Plant

S.A. El-Shafie, S.A. El-Kholy, M.M. Mazrou, M.M.M. Afify
Horticulture Dept. Faculty of Agric. Minufiya University,,

ABSTRACT:

This investigation was carried out at the Experimental Farm of the Faculty of Agriculture Minufiya University during two successive seasons of 2003/2004 and 2004/2005 for studying the effect of inoculation Ammi visnaga L. seeds with different N.F.B. strains such as Azospirillum lipoferum, Azotobacter chroococcum and the mixture between (Azospirillum + Azotobacter) separately or in combinations with urea as chemical fertilization at a rates of (0, 40, 80 and 120 kg/fed). The obtained results appeared that, the inoculation treatments with different N.F.B strains resulted in significantly taller plants, more branches number, heavier fresh herb of whole plant as well as wheavier both fresh and dry herb without umbels, in comparison with the uninoculated seeds during the two experimental seasons. The treatment of Azotobacter gave the best results in this trait. Also, both fresh and dry weights of umbels/plant were at the highest value when Ammi visnaga L. seeds treated with Azotobacter. Otherwise, both fruit yield per plant and per feddan reached to the maximum value when the seeds were inoculated with Azotobacter. Also, both khellin and visnagin yield were increased by the application of different N.F.B strains. The best results in this respect was obtained by inoculation the seeds with Azotobacter. In addition, the measured vegetative growth, umbels/yield as well as fruit yield per plant and per feddan was increased by fertilizing the plants with urea at the lowest dose (40 kg/fed) during the first and second seasons. Meanwhile, both khellin and visnagin yield followed the same abovementioned trend during the two experimental seasons. Otherwise, the best growth parameters, umbels/yield. Fruit yield as well as both total khellin and visnagin yield/plant and fed. were produced by the combination treatments between Azotobacter chroococcum + lower and or moderate urea doses (40 and or 80 kg/fed) in compared with the other combinations and the untreated plants (control) during the two experimental seasons.

Key words: Ammi visnaga L. bacterial strains, urea fertilization, Khellin, visnagin.