



Tropentag, September 14-16, 2010, Zurich

“World Food System —
A Contribution from Europe”

Effect of *Azotobacter* Inoculation, Dry Bread Yeast Suspension and Varying Levels of Urea on Growth of Potato cv. Desiree

TAHA SARHAN¹, OMAR KHALEDA ABDULLAH²

¹University of Duhok, College of Agriculture, Horticulture, Iraq

²University of Mosul, College of Agriculture and Forestry, Iraq

Abstract

The present study was carried out at the research field of the Agriculture Research station, Zakho, Duhok Governorate during 2005 and 2006 growing season. A factorial randomised complete block design was selected for the experiment which contained 24 treatments with three replicates to test the effect of *Azotobacter* inoculation, dry bread yeast suspension and different levels of urea on the growth of potato (*Solanum tuberosum*) cv. Desiree. Duncan multiple test at 0.05 level was used to detect differences among means. The experiment counted three factors: un-inoculation and inoculation with *Azotobacter*, four levels of dry bread yeast suspension (0, 2, 4 and 6 g ml⁻¹ and utilisation of nitrogen mineral fertilisation (urea) at rates of (0, 25, and 50 kg donum⁻¹; 1 donum equals 2500 m²).

The results showed that the vegetative growth was significantly increased in terms of plant height, areal stem number, leaf area, total chlorophyll content of leaves and dry matter percentage as a result of *Azotobacter* inoculation, bread yeast suspension, and the application of urea as compared to the control during both growing seasons.

The dual interaction between *Azotobacter* inoculation and bread yeast suspension, *Azotobacter* with urea, and yeast suspension with urea improved the vegetative growth of potato during both growing seasons.

Inoculating potato plants with *Azotobacter* in combination either with a suspension of bread yeast at a rate of 6 g ml⁻¹ or fertilising them with 50 kg urea donum⁻¹, appeared to be the most effective treatments in improving the vegetative growth traits of potato.

Keywords: *Azotobacter*, bread yeast, potato