Effect of Micronutrient Nutrition on Disease Incidence in Grain Legumes. (S04-johnson013717-Poster)

Authors:

- S.E.Johnson* - *Cornell University*
- J.M.Duxbury - *Cornell University*
- J.G.Lauren - *Cornell University*

Abstract:

Grain legumes have shown response to B and Zn fertilization when grown on micronutrient-deficient soil, and there is some evidence of a role for Zn and/or B in plant disease resistance. Observation of apparent decrease in disease incidence in the Zn/B-treated plots during agronomic experiments with chickpea and lentil indicated that part of the reason for the observed Zn response might be improved disease resistance, as well as plant nutrition improvement. Another study was then done in micronutrient deficient soil in pots to test the effects on disease incidence of different methods of supplying Zn to plants. Chickpea, lentil, and soybean were grown with the following treatments: in vivo Zn-enriched seeds (enriched by excess Zn fertilizer application to soil during previous season), Zn fertilizer application to soil (of present unenriched crop), priming of seeds in Zn solutions, and two controls of water-primed seeds (no Zn treatment) and unprimed unenriched unfertilized seeds (no Zn or priming treatment). Emergence, seedling mortality, and seedling vigor were observed during a 1-month growth period. The in vivo enriched seeds were found to have the poorest emergence and highest mortality of all the treatments. Water-primed seeds were as healthy as Zn-primed seeds, and no significant effect of any Zn treatment on disease incidence was observed.

Corresponding Author Information:

Sarah Johnson
Cornell University
915 Bradfield Hall, Soil and Crop Sciences
Ithaca, NY 14853

phone: 607-255-1730
e-mail:
sarah@ecomail.com.np

Presentation Information:

Presentation Date: Monday, November 11, 2002

Presentation Time: 9:00-11:00 am
Poster Board Number: 1526

Keywords:
micronutrient deficiency, disease resistance, seed enrichment, grain legume