# Interactions Between Bradyrhizobium japonicum, Forage and Roundup-Ready Soybean Cultivars. (S03-hashem175817-Poster)

#### Authors:

- F.M.Hashem\* University of Maryland Eastern Shore, Princess Anne, MD
- R.B.Dadson University of Maryland Eastern Shore, Princess Anne, MD
- B.M.Green University of Maryland Eastern Shore, Princess Anne, MD
- A.L.Allen University of Maryland Eastern Shore, Princess Anne, MD

- J.Joshi University of Maryland Eastern Shore, Princess Anne, MD
- T.Devine USDA-ARS, Beltsville, MD

# Abstract:

Soybean growth in the Delmarva region is often limited by the competitiveness of Bradyrhizobium japonicum inoculants to compete with the mediocre microbial strains present in the soil. Interactions between elite B. japonicum strains TA11NOD+, 532C, SEMIA 5039, NS-1, and SOY 212, and forage and Roundup Ready soybean genotypes were examined in field trials in Delmarva region. Strain TA11NOD+ was the best microsymbiont with both the forage soybean cv. Tyrone and the Roundup Ready soybean cv. AG 4602, producing 309 and 303 nodules/plant, 1.4 and 3.34 umol C2H4/plant/ha. and 2.2 and 3.8 t/ha, respectively. A combination of strains 532C, NS-1, and SOY 212 produced the highest nodule number, nodule mass and seed yield with cv. AG4902. To

overcome the competition problem, selected rhizobiophages were used to reduce the competitive ability of ineffective native B. japonicum strains in nodulating soybean. This resulted in decreased nodule occupancy by undesirable indigenous bacteria strains by 44% and increased nodule occupancy by introduced strains by 55%. This study shows that soybean growth was greatly influenced by bradyrhizobia strains under Delmarva climatic conditions.

#### **Corresponding Author Information:**

Fawzy Hashem	phone: (410)651-6628
University of Maryland	fax: (410)651-7656
Eastern Shore	e-mail:
30921 Martin Court	fmhashem@mail.umes.edu
Princess Anne, MD 21853	

## **Presentation Information:**

Presentation Date: Tuesday, November 12, 2002 Presentation Time: 9:00-11:00 am Poster Board Number: 2215

### **Keywords:**

Soybean, Biological nitrogen fixation, Forage soybean, Legume inoculants