RACHEL PIERCE#, and PETER VILA, Institute of Environmental and PhysicalSciences, Shepherd University, Shepherdstown, WV, 25443. **Effects of conservation tillage practices on nodulation of Phaseolus vulgaris roots.**

The cost of chemically produced nitrogen fertilizers can be cost prohibitive to farmers. One method of reducing the input of chemically based nitrogen fertilizers is to plant nitrogen fixing cover crops such as the important food crop Phaseolus vulgaris, the common bean. Cover crops also have the benefit of maintaining soil structure and can reduce erosion. The purpose of this study was to determine the effects of conservation tilling practices on nodulation of the common bean. Beans were grown in a randomized control split plot design of Wheat (Control), Rye and Clover (Treatments) utilizing Strip- and No-Till conditions. The beans were planted over the previous season's cover residue, which grew back during the study. Parameters measured were plant height (cm), leaf area (cm2), damage (%), and number of roots and nodules. Among cover crop plots, there was no difference in mean nodulation of bean plants (P=0.98). A positive correlation was found between nodulation and bean plant height (Wheat: P=0.003, Rye: P=0.01, Clover: P=0.004). In tilling practice, Strip Till was significantly higher in mean nodulation than No Till (P=0.002) and a positive correlation was found between nodulation and plant height in tilling practice (No Till: P=0.004 and Strip Till: P=0.001). Other factors that may interact with nodulation in beans are soil microbe inoculation and existing bacterial communities, root growth habits, soil nutrient content, as well as soil moisture and temperature; however, the importance of these factors may also vary depending upon the species and variety of legume.