# Soil Physical Properties as Affected by Winter Cover Crops in No-till and Conventional Tillage. (S06stipesevic115915-Oral)

Authors:

- B.Stipesevic\* Purdue University, Dept. of Agronomy
- E.J.Kladivko Purdue University, Dept. of Agronomy

### Abstract:

A winter cover crop may enhance soil tilth in corn-soybean rotations by protecting the soil surface and improving soil physical properties by its root growth, thus promoting subsequent cash crop growth. The objective of this study was to determine effects of a winter wheat cover crop on soil physical properties of two Indiana soils under a corn-soybean rotation within either notill or conventional (spring chisel) tillage systems. During the years 2000, 2001 and 2002, the winter wheat cover crop plots were split into two cover crop kill dates ('early' and 'late'). Compared with the control, both cover crop treatments increased soil wet aggregate stability and water retention at -10 kPa water potential during the first two years. The air-filled porosity at -5 kPa water potential was improved in the late kill-date treatment during both years and in the early kill-date treatment in the second year only. Shear vane (years 2000 and 2002) and cone penetrometer (years 2001 and 2002) resistances were lowered by both cover crop treatments on one site only. Higher soil moisture content in cover crop treatments resulted in better early growth of corn in five of six site-years.

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

Bojan Stipesevic Purdue University Dept. of Agronomy, 1150 Lilly Hall West Lafayette, IN 47906 phone: 765-4963318 e-mail: bojans@purdue.edu

# **Presentation Information:**

Presentation Date: Tuesday, November 12, 2002 Presentation Time: 8:45 am

## **Keywords:**

Tillage systems, Winter Cover Crop, Corn-Soybean rotation, Soil Physical

properties