

Organic Research Interests – J. Diane Knight

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I am currently involved in a number of research projects with organic applications. In collaboration with Dr. Shirliffe in the Department of Plant Sciences, recently a survey of 76 organically managed fields was completed that documented macronutrient fertility, soil physical properties, weed populations, crop rotation history, application of organic amendments, and various tillage practices specific to the surveyed fields. This research developed a unique data set documenting soil fertility and weed status on organic farms in Saskatchewan.

The information from the survey was used to develop a suite of small plot field experiments located on three organically managed sites in Saskatchewan. My focus is on evaluating several organic amendments and green manure crops for their affect on soil fertility and quality. In addition, a range of cereal crop varieties are being evaluated for yield potential on low input soils.

Other research projects that have organic applications involve development and evaluation of microbial inoculants. One project compared different rhizobial inoculant formulations for alfalfa production. Another study is examining the development of compost into a carrier for rhizobial as well as other microbial inoculants. In addition to rhizobial inoculant research, I am involved in research evaluating the fungal inoculant *Penicillium bilaiae* for improving P solubility in low P soils. *Penicillium bilaiae* is an accepted organic input in Saskatchewan, and has very good potential for improving soil P solubility in inherently low P organically managed soils.