Objectives

- Show effects of manure on subsequent organic crop yield and nutrient uptake
- Show soil nitrogen contents of organic vs non-organic systems in the 6th and 8th year of cropping system studies
Manure study

- Applied ~9 tons/acre of 3 year aged steer manure to one seeder pass of Perry’s CDRS ORG rotation in Sep 2009.

- Equated to 75 lb TOTAL $P_2O_5$/acre and ~400 lb TOTAL N/acre

- Manure was tilled in prior to seeding winter wheat
Effect of manure on 2010 winter wheat grain yield

Effect of manure on 2010 winter wheat grain protein


No difference
Effect of manure on 2010 weed biomass

Effect of manure on 2011 lentil grain yield

No difference

Cropping system effects on soil N after 8 years near Bozeman, CDRS

No differences among systems

ORG: LGM 1 in 4 years
Cropping system effects on soil N after 6 years near Bozeman, GGRS

**ORG: LGM 1 in 2 years**

* - sig higher than tilled fallow wheat

GGRS Cropping Systems
Summary

- Manure increased 2010 ww grain yield, but not protein, weeds, or 2011 lentil yield. Effect was likely from both N and P.
- LGM grown 1 in 4 years in organic systems resulted in similar soil N as conventionally fertilized systems.
- LGM grown 1 in 2 years resulted in higher soil N than conventional wheat-fallow.
For more Information:

Soil Fertility Website:
http://landresources.montana.edu/soilfertility

Questions?