

2012 LTER Agronomic Protocol Kellogg Biological Station

Main Site Treatment 3: Reduced Inputs of Commercial Fertilizer/Herbicide Management Summary Sheet

Growing Season: 2012

Rotation: Soybeans – Winter Wheat – Corn Tillage: Conventional

Tillable Acres: 13.5 Current Crop: Soybeans Previous Crop: Corn Yield Goal: 45 bu/A

Planting Date: May 2012 Planting Population: 180,000 seeds/A Variety: Pioneer 92Y30

Row Spacing: 15 inches Planting Depth: 1 inches Insecticide Used: none

Cover Crop Cereal Rye

Harvest Date: September – October 2012

Tillage Operations Applied Last Year:

Plots were chisel plowed and soil finished before corn was planted. Corn was harvested in October 2011. Corn stubble was fall mowed. Cereal rye was planted after corn harvest.

Tillage Operations and Fertilizer Applied This Year:

Tillage: Spring chisel plow: Soil finish as needed before planting. Plant soybeans anytime after May 5th. After soybean harvest soil finish and plant winter wheat, variety Pioneer 25R39. Plant winter wheat after the Hessian fly-free date, September 20th for Kalamazoo County.

Soybean Fertilizer: Spring 2012: 92 lbs/A of 0-0-60 (55 lbs of K₂O/A) (before chisel plowing, if possible).

Spring 2012: 60 lbs/A of 11-52-0 (6.6 lbs/A N, and 31.2 lbs P₂O₅/A) before chisel plowing.

Winter Wheat Fertilizer: Fall 2012: No fertilizer will be applied in the fall of 2012.

Spring 2013: Broadcast **To Be Determined** of 28% nitrogen.

The amount on nitrogen applied to treatment 3 should be 3/5 of the total amount applied to treatment 1.

The 3/5 rate of nitrogen should be based on the total amount applied to treatment 1. i.e. The amount of nitrogen applied in the fall of 2012 and spring of 2013, not just the amount applied in the spring of 2013.

Cover Crop: None

Weed/Insect Control:

Preemergence: None

Postemergence: Scout for weeds and make a 10-12 inch band application of Roundup OriginalMax at 22 fl oz/Acre and ammonium sulfate at 17 lbs/100 gals of water when weeds are 2-6 inches.

Insect control: Scout for aphids. If needed an insecticide application can be used to control aphids.

Soil Sample Analysis: Results from samples taken in the autumn of 2010.

pH:	<u>R1 5.9, R2 5.8, R3 6.1, R4 5.9, R5 5.8, R6 6.0</u>	Magnesium (Mg): ppm	<u>R1 163, R2 137, R3 160, R4 168, R5 166, R6 149</u>
Lime Index:	<u>R1 69, R2 68, R3 69, R4 69, R5 68, R6 69</u>	Calcium (Ca): ppm	<u>R1 777, R2 684, R3 859, R4 808, R5 809, R6 867</u>
Nitrogen (N):	_____	C.E.C.: (meq/100 g)	<u>R1 6.7, R2 7.2, R3 7.2, R4 7.0, R5 8.1, R6 7.0</u>
Phosphorus (P): ppm	<u>R1 16, R2 45, R3 33, R4 19, R5 20, R6 34</u>	% O.M.:	_____
Potassium (K): ppm	<u>R1 106, R2 108, R3 131, R4 134, R5 115, R6 99</u>	Others:	_____

Fertility -- Fertilizer Recommendation:

Lime ton/A: <u>Avg. = 1.8: R1 2.2, R2 2.2, R3 1.1, R4 2.2, R5 2.2, R6 1.1</u>	K ₂ O lb/A: <u>Avg. = 46.7: R1 55, R2 55, R3 35, R4 25, R5 55, R6 55</u>
Nitrogen lb/A: <u>Avg. = 0: R1 0, R2 0, R3 0, R4 0, R5 0, R6 0</u>	Other: _____
P ₂ O ₅ lb/A: <u>Avg. = 22.5: R1 30, R2 0, R3 25, R4 30, R5 30, R6 20</u>	

Differences from Prior Rotations:

Comments:

On the LTER protocol soil sample analysis in prior years, up to and including 2007, was reported in lbs/acre. In 2008 and upcoming years soil sample analysis will be reported in ppm on the LTER protocol.

This is a working protocol used for planning purposes. Due to potential changes in chemicals, fertilizer, varieties planted, planting dates etc... please refer to the agronomic field log for actual field operations that take place during 2012.