2012 LTER Agronomic Protocol Kellogg Biological Station

Main Site Treatment 6: Management Summary Sheet

Growing Season: 2012

Rotation: Alfalfa Tillage: No-Till

Tillable Acres: 13.5 Current Crop: Alfalfa Previous Crop: Alfalfa (2011) Yield Goal: 5 tons/A

Planting Date: June 2009 Planting Population: 2,000,000 seeds/A Variety: WL 347 LH

Row Spacing: 7.5 inches Planting Depth: 0.5 inch Insecticide Used:

Harvest Date: Three cuttings

Tillage Operations Applied Last Year: None
Plots were harvested three times in 2011.
Fertilizer: Applied 200 lbs/A of (0-46-0) which provided 92 lbs/A of P_2O_5 /A.
Applied 460 lbs/A of 0-0-60 in split applications in April 2011 which provided 276 lbs/A K_2O/A to the plots.
Applied 3 lbs/A Boron Sulfate in April 2011 which provided 0.4 lbs/A B to the plots.

Tillage Operations and Fertilizer Applied This Year:
Cut alfalfa three times in 2012.

Tillage: None, No-Till. T6 plots have not been tilled since the establishment of the LTER. When reseeding alfalfa or cover crops **do not** till treatment 6.

Fertilizer: **Do not add any nitrogen to treatment 6.** Phosphorus must be applied without nitrogen, e.g. superphosphate, which may need to be specially ordered from the fertilizer dealer. Most fertilizer dealers will only have 11-52-0 or 18-46-0.

Apply phosphorus and potassium based on MSU soil test recommendations:
Broadcast P_2O_5 in the form of superphosphate (0-20-0) at 200 lbs/A (92 lbs P_2O_5 /A).
Broadcast K_2O in the form of potash (0-0-60) at 500 lbs/A (300 lbs of K_2O/A).
Boron 3 lbs/A

Weed/Insect Control:
Postemergence: Spring/Summer 2012 scout for weeds and make a herbicide applications if necessary.

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

pH:	**R1** 6.0, **R2** 6.1, **R3** 6.0, **R4** 6.3, **R5** 6.2, **R6** 6.7	Magnesium (Mg): ppm	**R1** 200, **R2** 226, **R3** 232, **R4** 218, **R5** 227, **R6** 201
Lime Index:	**R1** 69, **R2** 70, **R3** 69, **R4** 70, **R5** 70, **R6** 71	Calcium (Ca): ppm	**R1** 879, **R2** 961, **R3** 1014, **R4** 930, **R5** 991, **R6** 772
Nitrogen (N):	**Do not add any nitrogen to treatment 6.**	C.E.C.: (meq/100 g)	**R1** 7.4, **R2** 6.9, **R3** 8.4, **R4** 6.7, **R5** 7.0, **R6** 5.6
Phosphorus (P): ppm	**R1** 28, **R2** 19, **R3** 36, **R4** 23, **R5** 19, **R6** 34	% O.M.:	
Potassium (K): ppm	**R1** 73, **R2** 76, **R3** 92, **R4** 73, **R5** 69, **R6** 42	Others:	

Fertility -- Fertilizer Recommendation:

Lime ton/A:	**Avg. =** 1.7: **R1** 2.2, **R2** 2.2, **R3** 2.2, **R4** 1.1, **R5** 2.2, **R6** 0.0	K_2O lb/A:	**Avg. =** 278: **R1** 280, **R2** 270, **R3** 255, **R4** 275, **R5** 280, **R6** 310
Nitrogen lb/A:	**Avg. =** 0: **R1** 0, **R2** 0, **R3** 0, **R4** 0, **R5** 0, **R6** 0	Other:	Boron at 2 lbs/A for all replications
P_2O_5 lb/A:	**Avg. =** 78.3: **R1** 65, **R2** 100, **R3** 65, **R4** 75, **R5** 100, **R6** 65		

Differences from Prior Rotations: These plots are normally planted to alfalfa however we decided to plant winter wheat in 2008 before replanting to alfalfa in late summer of 2009.

Comments:
Normal management when plots are planted to alfalfa:
Cuttings per year: 3
Tillage: None, No-Till. T6 plots have not been tilled since the establishment of the LTER. When reseeding alfalfa or cover crops **do not** till treatment 6.

Fertilizer: **Do not add any nitrogen to treatment 6.** Phosphorus must be applied without nitrogen, e.g. superphosphate, which may need to be specially ordered from the fertilizer dealer. Most fertilizer dealers will only have 11-52-0 or 18-46-0.

Apply phosphorus and potassium based on MSU soil test recommendations:

*When pH is over 6.8 no lime index is given.

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.