

FIELD MANAGEMENT OF FIELDS O AND B2 AT MEIGS

The following management strategy developed for fields O and B2 at the Meigs Farm. With the current research needs, field O is currently certified Organic and field B2 is not certified however, management of the fields will be as if they are both certified organically. The following rotation accomplishes several common goals; builds the soil fertility, reduces weed production, evens out plot cause variations, and limits the financial impact on total farming operations. The rotation builds soil fertility with the help of cover crops that either fix nitrogen or make other nutrients more available. Using fast growing, high biomass producing cover crops, different soil and vegetation management methods, weed growth and seed production will be reduced i.e. tillage, mowing. This rotation also tries to even out any previous research affects that might cause abnormal variation in soil properties with the use of grid soil sampling and applying soil amendments only to problem areas. All these goals are reached by limiting the negative financial impact on the farm with the incorporation of wheat into the rotation.

Grid soil sampling will be performed using ½ acre grids the fall prior to seeding wheat. Deficient areas will be identified and necessary applications of Rock Phosphate and Sulfate of Potash will be made to bring soil levels up to a uniform level according to A & L Great Lakes Laboratories, Inc. soil test results. Applications of manure obtained from the ASREC will be applied at 8-10 tons/acre over non-plot area if soil test results are medium or less on 50% or more of the sample points. Soil pH will be maintained at 6.5 based on soil samples used for fertility testing. An area will be designated in field O as low fertility and no fertilizer inputs will be added. To further analyze the nutrient levels of the system, tissue samples will be collected on the legume cover crops in the bulk areas and analyzed for total N, P, K, Mg, Ca, S, Na, Fe, Al, Ma, B, Cu, and Zn.

Each field will be split north and south into 2 sub fields. Each subfield will be managed as a separate field with the east subfield beginning the rotation in year 1, and the west sub field beginning the rotation in year 2. This Rotation cycle will begin the spring of 2013. In the fall of 2012 the non-research areas in Field O will be moldboard plowed and left fallow over the winter. Alfalfa will be seeded in the spring of 2013 per Kevin Gibsons request to all bulk area in field O east and west. The alfalfa stand will be evaluated during the summer and fall of 2013 and determined if it should be moved into the rotation cycle or left in alfalfa longer.

Produce produced in the Organic area will not be marketed; it may be donated to soup kitchen or consumed by those involved with the production. Wheat and other grain produced in the area may be marketed with the bulk conventional crop produced on the farm.

Record Keeping

To maintain Organic certification, accurate records must be kept. Farm staff will maintain records of activities performed and inputs applied by farm staff. Primary investigators will maintain records of activities performed and inputs applied by their staff. At the conclusion of each growing season, these records will be combined in a joint file.

Management Goals

- Increase soil fertility
- Suppression of weed growth and productivity
- Remove any research caused plot variation

Research Area Protocol

Research Areas can be obtained anytime during the season.

Any area that is released from research must be maintained in the bulk area management for at least 1 rotation cycles (2 years) before being eligible for research again.

An area released from research, will be deep tilled (deep chiseled or subsoil) and returned into the rotation cycle at the point of the surrounding area.

Bulk Area Management

Bulk area will be rain fed, due to lack of man power and equipment
Cover crop seeding rates will be determined from Midwest Cover Crops Council online selector tool.

Crop Rotation Cycle

Yr. 1 Fall planted Wheat, frost seeded red , summer seeded Sorghum x sudangrass

Yr. 2 Fall planted Hairy Vetch/Rye mowed prior to seed set followed by Summer seeded Buckwheat

Yr. 3 Research or back to year 1

Wheat

(Moldboard plowed and disc prior to drilling, harvested and grain sold with other farm wheat, straw can be baled if not weedy. Manure applied prior to final seed bed preparation if needed)

Allows farm to recoup a portion of cost

Easy to grow organically

Easy to market

Red Clover

(Frost seeded, mowed with rotary mower after wheat harvest as needed to prevent weed seed production)

Easy to establish

Gives continuous cover growth after wheat harvest

Nitrogen fixation of 100+ lbs.

Summer seeded Sorghum x sudangrass (or sudangrass)

(No-till drilled into standing clover the end of July; Mow 9-12" using flail mower as needed to prevent weed seed production)

No-till into frost seeded clover

Quick growth and alleopathic properties suppresses weed growth

Capture N from clovers

Easy to terminate

Grows in high temp when clovers can struggle

High biomass producer

Fall planted Hairy vetch/Rye/oilseed Radish mix

(Disc clover Sorghum x sudangrass prior to drilling if weed populations are significant, otherwise no-till into flail mowed 0-1" height cover)

High biomass production (Rye)

Weed suppression through vegetative growth and alleopathic properties (Rye)

High N fixation 150+ lbs. (Hairy vetch)

Easy to establish

Easy to terminate

Early spring growth

Commonly used with growers

Summer seeded Buckwheat

(Drill into worked seeded bed if perennial weeds are problem, otherwise no-till into mowed hairy vetch/rye cover prior to seed production of either crop. After buckwheat sets seed, lightly disc to allow for reseeding and another cycle. If perennial weeds become problematic, Moldboard plow after first buckwheat crop and manage a stale seedbed until wheat planting)

Weed Suppression through quick growth

Easy to terminate

Potentially frees P and K

Capture N from Hairy vetch

Fast decomposition

Short growth cycle

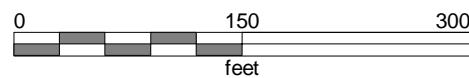
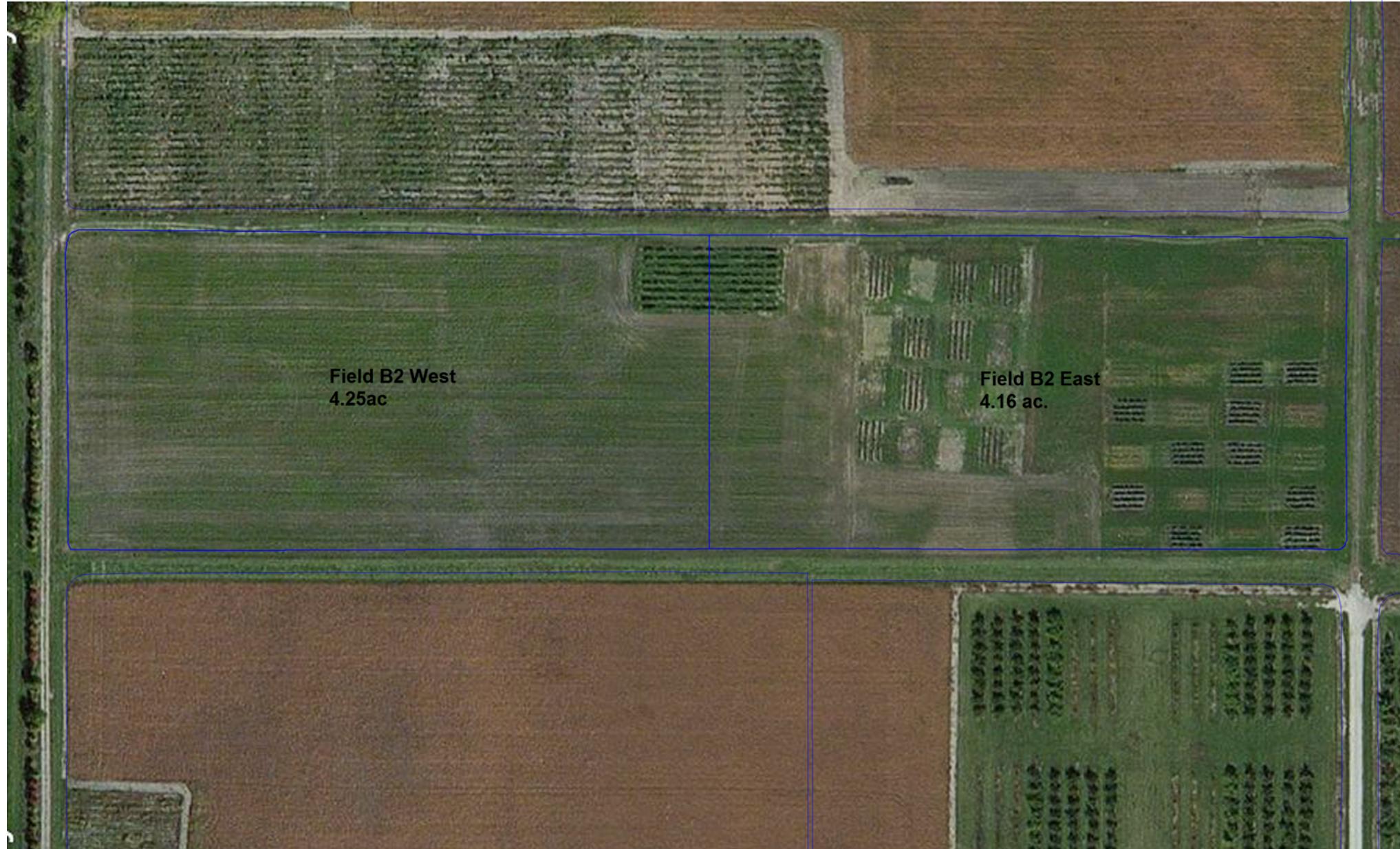
Flail mowing procedure

Mow at designated height allowing residue to be spread uniformly on the ground

Rotary mowing procedure

Mow using batwing mower at 3-4" in height letting residue fall where it may

Meigs Field B2



Meigs Field O



0 200 400
feet