

Harvested on October 25, 2011

2011 Protocol for Biodiversity Study

2
 LTER at Kellogg Biological Station, Michigan State University

Harvested two 30" row Soybean rows, each row was 90' long.

System	Treatment	----- Plot Numbers -----				----- Crop Rotation -----
		Rep 1	Rep 2	Rep 3	Rep 4	
A	B1	106	201	303	401	Fall Fallow
A	B2	102	206	316	402	Spring Fallow
B	B3	111	203	306	403	Wheat covers A & C - Corn covers A & C - Soybeans cover B
B	B4	104	220	307	404	Corn covers A & C - Soybeans cover B - Wheat covers A & C
B	B5	114	217	312	405	Soybeans cover B - Wheat covers A & C - Corn covers A & C
C	B6	107	207	317	406	Wheat cover A - Corn cover A - Soybeans
C	B7	105	219	305	407	Corn cover A - Soybeans - Wheat cover A
C	B8	118	214	310	408	Soybeans - Wheat cover A - Corn cover A
D	B9	119	205	314	409	Wheat - Corn - Soybeans
D	B10	117	209	320	410	Corn - Soybeans - Wheat
D	B11	110	216	309	411	Soybeans - Wheat - Corn
E	B12	109	202	313	412	Soybeans - Corn
E	B13	113	212	319	413	Corn - Soybeans
E	B14	115	204	304	414	Soybeans - Wheat
F	B15	112	213	301	415	Corn cover A - Corn cover A - Corn cover A
F	B16	101	210	308	416	Soybeans cover C - Soybeans cover C - Soybeans cover C
F	B17	116	211	302	417	Wheat cover A - Wheat cover A - Wheat cover A
G	B18	108	208	311	418	Corn - Corn - Corn
G	B19	103	218	315	419	Soybeans - Soybeans - Soybeans
G	B20	120	215	318	420	Wheat - Wheat - Wheat
H	B21	100	200	300	421	Continuous Fallow

*Cover A: Red Clover
 Cover B: Crimson Clover
 Cover C: Cereal Rye

System	----- Descriptions -----
A	Fallow system: No crop is planted. Plots are tilled once a year.
B	One annual crop with two cover crops. Three year crop rotation.
C	One annual crop with one cover crop. Three year crop rotation.
D	One annual crop with no cover crop. Three year crop rotation.
E	One annual crop with no cover crop. Two year crop rotation.
F	One annual crop with one cover crop. Monoculture cropping system (no crop rotation).
G	One annual crop with no cover crop. Monoculture cropping system (no crop rotation).
H	Continuous fallow system: No cover, no crop growth. Plots are tilled as needed (2 - 6 times) a year to prevent plant growth from becoming established.

Research Objective: Incorporating biological diversity into weed management. Determine the impact of crop rotation and cover crops on weed communities in row crops.

Notes: **All plots will be managed like the LTER main site treatment 4 plots.**

No herbicides and no synthetic nitrogen will be used on any treatment.

This study was established in 2000. In 2000 and 2001 some treatments received fertilizer and herbicides.

Beginning in 2002 all treatments and plots have been treated like the LTER main site treatment 4, no herbicides and no synthetic fertilizer.

Plot size = 30' x 90' (9 meters x 27meters).

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 2011.

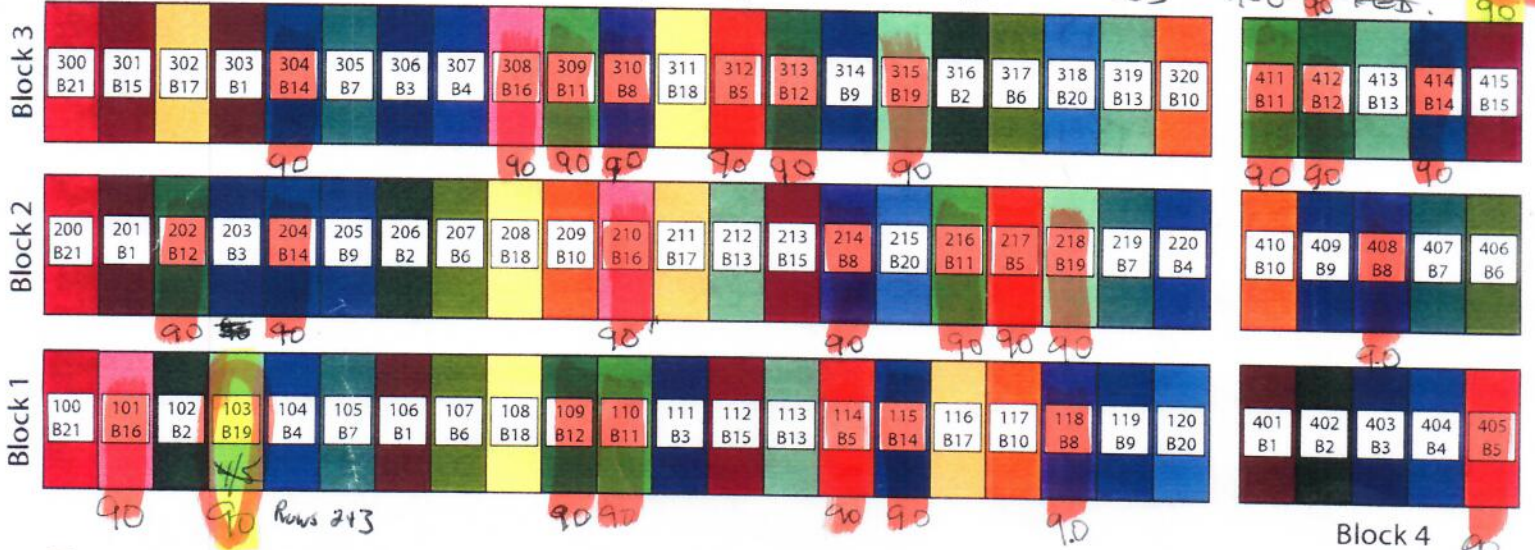
Harvested on 10/25/2011

Row LENGTHS

KBS LTER Biodiversity Study

10/18/2011

ALL PLOTS ARE 90' AND ROWS 7/8 UNLESS



Treatment Description System

B1	F _{fall}	A
B2	F _{spring}	A
B3	C _{cov2} - S - W _{cov2}	B
B4	S - W _{cov2} - C _{cov2}	B
* B5	W _{cov2} - C _{cov2} - S	B
B6	C _{cov1} - S - W _{cov1}	C
B7	S - W _{cov1} - C _{cov1}	C
* B8	W _{cov1} - C _{cov1} - S	C
B9	C - S - W	D
B10	S - W - C	D
* B11	W - C - S	D
* B12	C - S	E
B13	S - C	E
* B14	W - S	E
B15	C _{cov1}	F
* B16	S _{cov1}	F
B17	W _{cov1}	F
B18	C	G
* B19	S	G
B20	W	G
B21	T	H

Description Key

- F = Fallow
- S = Soybean
- C = Corn
- W = Wheat (red)
- T = Tilled and cultivated
- cov1 = 1-species cover (legume)
- cov2 = 2-species cover (legume + small grain)

Location within main LTER site

THESE ARE NOT ROWS #7-8; INSTEAD, THEY ARE ROWS RECORDED HERE. PLOTS { 103 - 4/5 (416 - 6/7



System Key	Trt	Total Species	Species/year
A	B1-2	10	5-7
B	B3-5	5	1-3
C	B6-8	4	1-2
D	B9-11	3	1
E	B12-14	2	1
F	B15-17	2	2
G	B18-20	1	1
H	B21	0	0

All treatments established May 2003
Each plot is 30' X 90' (9.1m x 27.4m)

Moisture Curve:

Soy beans

Map File: Biodiv2011Soy
Date: 10/25/11
Time: 3:15:58 PM

Range Row

1	1	plot 101	16.11	14.29	57.67	?
1	2	plot 103	0.00	0.00	0.00	
1	3	plot 109	25.62	14.61	57.50	
1	4	plot 110	29.91	13.65	57.89	
1	5	plot 114	27.04	14.50	57.53	
1	6	plot 115	22.39	13.91	57.83	
1	7	plot 119	30.97	14.35	57.51	

Not sure why this was 0.00 the plot had some soybeans

2	7	plot 218	24.96	13.13	58.04	
2	6	plot 217	30.25	12.59	58.27	
2	5	plot #216	25.47	12.68	58.16	
2	4	plot #214	30.64	12.81	58.10	
2	3	plot #210	26.64	12.65	58.13	
2	2	plot #204	14.32	12.45	58.29	
2	1	plot #202	20.99	13.11	58.03	
3	1	plot #304	16.81	12.70	58.09	
3	2	plot #308	10.85	12.67	58.21	
3	3	plot #309	24.55	13.05	58.04	
3	4	plot #310	32.53	12.66	58.20	
3	5	plot #312	25.00	12.58	58.28	
3	6	plot #313	28.03	12.49	58.38	
3	7	plot #315	19.63	12.72	58.21	

Moisture Curve:

Soy beans

Date: 11/2/11
Time: 2:55:29 PM

Range Row

Moisture Curve:

Soy beans

Map File: 111plot103bio
Date: 11/2/11
Time: 2:57:24 PM

Range Row

1	1	Plot #103	21.70	13.78	58.01	
---	---	-----------	-------	-------	-------	--

4	1	717	24.75	12.94	58.10	
4	6	416	25.14	13.67	57.87	
4	5	414	19.89	13.63	57.92	
Tare Warning!						
W: -0.03						
M: 1.50						
4	4	plot #412	27.46	13.07	57.96	
Tare Warning!						
W: -0.07						
M: 1.67						
4	3	plot #411	25.61	13.58	57.93	
4	2	plot #408	27.78	13.23	58.03	
4	1	plot #405	28.60	12.70	58.24	