2012 LTER Agronomic Protocol Kellogg Biological Station

Micro-plots in Treatment 4

In 2006 a new experiment was established within the LTER main site treatment 4 plots to determine how crop yield is influenced by weed populations and nitrogen availability. Six treatments were established as split-plots within the LTER main site treatments 3 and 4: three weed control treatments (business-as-usual vs. none vs. complete) x two fertilizer levels (none vs. same rate as T1).

Micro-plot definition: A sub plot or split plot treated differently from the LTER main site plots. The size of the LTER main site plots are one hectare.

Micro-plot size and location: Micro-plots were 15 feet wide by 50 feet long, only 40 feet of each plot was harvested; we removed 5 feet from both ends of each plot before harvest. Micro-plots were located in the northwest corner of all treatment 3 and 4 main site plots.

Descriptions of the six treatments used within the micro-plots follow:

Business as usual (normal) weed control + Fertilizer (BAU + Fert): if the main plot was rotary hoed, row cultivated, or band sprayed these plots received the same field operation and fertilizer was applied at the same rate as applied to the LTER main site treatment 1 plots.

Business as usual (normal) weed control – Fertilizer (BAU – Fert): if the main plot was rotary hoed, row cultivated, or band sprayed these plots received the same field operation and no fertilizer was applied.

Weed Free (complete) weed control + Fertilizer (WF + Fert): no weeds were allowed to become established and fertilizer was applied at the same rate as applied to the LTER main site treatment 1 plots.

Weed Free (complete) weed control – Fertilizer (WF – Fert): no weeds were allowed to become established and no fertilizer was applied.

No Weed Control + Fertilizer (NWC + Fert): plots were allowed to grow without any form of weed control and fertilizer was applied at the same rate as applied to the LTER main site treatment 1 plots.

No Weed Control – Fertilizer (NWC – Fert): plots were allowed to grow without any form of weed control and no fertilizer was applied.

2012 Treatment 4 randomization of micro-plots

Rep 1	NWC + Fert	BAU - Fert	WF + Fert	BAU + Fert	WF - Fert	NWC - Fert	N
Rep 2	WF + Fert	WF - Fert	NWC - Fert	BAU + Fert	BAU - Fert	NWC + Fert	↑
Rep 3	NWC - Fert	BAU + Fert	BAU - Fert	WF + Fert	NWC + Fert	WF - Fert	
Rep 4	BAU + Fert	BAU - Fert	WF + Fert	WF - Fert	NWC - Fert	NWC + Fert	
Rep 5	NWC - Fert	BAU + Fert	WF - Fert	WF + Fert	BAU - Fert	NWC + Fert	
Rep 6	WF - Fert	BAU + Fert	NWC + Fert	WF + Fert	NWC - Fert	BAU - Fert	