

2008 LTER Agronomic Protocol Kellogg Biological Station

Micro-plots in Treatments 3 and 4

In 2006 a new experiment was established within the LTER main site treatments 3 and 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.

Not to Scale

2007 Treatment 3 randomization of micro-plots

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

N
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2007 Treatment 4 randomization of micro-plots

Rep 1	NWC + Fert	BAU - Fert	WF + Fert	BAU + Fert	WF - Fert	NWC - Fert
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

N
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CONFIRMED APPLICATION REPORT

DATE: 05/03/10

REENTRY DATE/TIME: DRY

DESCRIPTION OF AREA: T3 & T4 MICROPLOTS

WEATHER CONDITIONS:

SUNNY PARTLY SUNNY PARTLY CLOUDY CLOUDY RAINY

TIME: 10:30
AIR TEMPERATURE: 61
WIND DIRECTION: WSW
WIND VELOCITY: 5-10
RELATIVE HUMIDITY: 63%
AM PM
°F °C
mph %

COMMENTS:

JOB PERFORMED:

PLANT/TRANSPLANT IRRIGATE SPRAY FERTILIZE OTHER

PURPOSE OF APPLICATION:

EQUIPMENT USED:

AIR-BLAST HAND SPRAYER HANDGUN CO2 BOOM SPRAYER OTHER

SPECIFIC INFORMATION:

Table with 4 columns: NAME/FORMULATION, RATE, TOTAL PRODUCT, and CROP/CHEMICAL/FERTILIZER/INOCULUM/MANURE/OTHER. Includes handwritten entry for WINTER WHEAT and 19-17-0 fertilizer.

OTHER COMMENTS:

Equipment used: JD 5220 tractor traveling 4.6 mph (gear C1, 1450 rpm) with a pull type Top Air Sprayer equipped with a hydraulic centrifugal sprayer pump and a Raven 440 automatic carrier control unit. Turbo TeeJet 11005 nozzles were used, spaced 30 inches apart with a total boom length of 30 feet. 10-20 psi was used. Application rate was 15 gallons / acre.

INDIVIDUAL PERFORMING WORK:

SIGNATURE

TELEPHONE:

RESEARCH PROJECT LEADER:

TELEPHONE: