Tillage X Fertility Study.

02-19A-W330

OBJECTIVE: Evaluate effects of tillage and fertility in a corn soybean rotation.

SUMMARY:

TILLAGES/FERTILIZATION	WEEDS	CROP
ALTERNATE	chickweed, common	corn, field
CONTINUOUS CHISEL	henbit	
CONTINUOUS CONVEN-TILL		
CONTINUOUS NO-TILL		
N 175 LB/A		
NO FERTILIZER		
NPK 175-50-150 LB/A		

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Tillage x Fertility Study.

Project Code: 02-19A-W330 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 US
Trial Status: Final **Updated:** 11-4-02

Objective:
Evaluate effects of tillage and fertility in a corn soybean rotation.

Weed	Code	Common Name	Scientific Name
1.	STEME	chickweed, common	Stellaria media (L.) Vill.
2.	LAMAM	henbit	Lamium amplexicaule L.

Crop 1: ZEAMX corn, field **Variety:** Pioneer 33P69LL
Planting Method: Seeded **Planting Date:** 5-29-02
Rate: 28000 S/A **Depth:** 1.5 IN
Row Spacing: 30 IN

Plot Width, Unit: 20 FT **Plot Length, Unit:** 25 FT **Reps:** 4
Tillage Type: See treatment list **Study Design:** Split-plot
Previous Crop, Year: GLXMA, 2001

Field Prep./Maintenance: See treatment list

APPLICATION DESCRIPTION

	A
Application Method:	NA
Application Timing:	NA

CROP STAGE AT EACH APPLICATION

	A	
Crop 1 Code, Stage:	ZEAMX	NA
Height, Unit:	NA	NA

WEED STAGE AT EACH APPLICATION

	A
Weed 1 Code:	NA

APPLICATION EQUIPMENT

	A
Appl. Equipment:	NA
Operating Pressure:	NA

NOTES:
Harvested Oct-21-02, (2) 30 inch rows by 22 ft.

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Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Height Inch 9-17-02	ZEAMX Plants 000/A 9-17-02	ZEAMX Yield bu/A 10-21-02	STEME Control Percent 4-15-02	LAMAM Control Percent 4-15-02
1	CONTINUOUS CONVEN-TILL									83	28.2	108	70	70
1	NO FERTILIZER													
2	CONTINUOUS CONVEN-TILL									87	27.6	138	91	91
2	N 175 LB/A													
3	CONTINUOUS CONVEN-TILL											180	0	0
3	NPK 175-50-150 LB/A													
4	CONTINUOUS CONVEN-TILL									94	30.9	176	0	0
4	NPK 175-50-150 LB/A													
5	CONTINUOUS CONVEN-TILL											173	0	0
5	NPK 175-50-150 LB/A													
6	ALTERNATE/NO-TILL 2000-01									84	29.4	127	54	54
6	NO FERTILIZER													
7	ALTERNATE/NO-TILL 2000-01									88	28.3	164	88	88
7	N 175 LB/A													
8	ALTERNATE/NO-TILL 2000-01											203	0	0
8	NPK 175-50-150 LB/A													
9	ALTERNATE/NO-TILL 2000-01									96	29.8	187	0	0
9	NPK 175-50-150 LB/A													
10	ALTERNATE/NO-TILL 2000-01											183	0	0
10	NPK 175-50-150 LB/A													
11	CONTINUOUS CHISEL									81	30.0	125	35	35
11	NO FERTILIZER													
12	CONTINUOUS CHISEL									83	30.6	148	48	48
12	N 175 LB/A													
13	CONTINUOUS CHISEL											170	0	0
13	NPK 175-50-150 LB/A													
14	CONTINUOUS CHISEL									93	28.4	182	0	0
14	NPK 175-50-150 LB/A													
15	CONTINUOUS CHISEL											171	0	0
15	NPK 175-50-150 LB/A													

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code	ZEAMX Height Inch 9-17-02	ZEAMX Plants 000/A 9-17-02	ZEAMX Yield bu/A 10-21-02	STEME Control Percent 4-15-02	LAMAM Control Percent 4-15-02
16	CONTINUOUS NO-TILL NO FERTILIZER									74	31.1	115	55	55
17	CONTINUOUS NO-TILL N 175 LB/A									78	30.0	134	94	94
18	CONTINUOUS NO-TILL NPK 175-50-150 LB/A											201	0	0
19	CONTINUOUS NO-TILL NPK 175-50-150 LB/A									101	31.3	209	0	0
20	CONTINUOUS NO-TILL NPK 175-50-150 LB/A											207	0	0
LSD (P=.05)										3.7	2.24	21.6	30.5	30.5
Treatment F										36.399	2.562	16.948	11.230	11.230
Treatment Prob(F)										0.0001	0.0165	0.0001	0.0001	0.0001

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Trial Comments

1. Protocol: SIU, continuous tillage treatments since 1970.
2. Alternate/No-till 2000-01 = 2 years of no-till (2000 and 2001), 1 year conventional tillage (2002), then repeated.
3. Fertility treatments were modified in 2000 to better reflect current trends in corn production.
4. For NPK plots 0-50-150 applied 5-3-02.
5. For tilled plots, tillage was plow and chisel on 5-23-02.
6. Blanket application of Touchdown + Bicep II Magnum + Aatrex at 1.0 + 3.3 + 0.9 lbai/A, applied PRE on 5-30-02.
7. For NPK and N only plots, 175-0-0 applied 6-2-02.
8. Weed control is a result of tillage and or fertility.