

FIELD EXPERIMENT HISTORY

Title: Tillage in Corn and Soybean Production Systems
Experiment: 17Tillage **Trial ID:** 3055 **Year:** 2007
Personnel: J. G. Lauer, J.M. Gaska, K. D. Kohn, J.T. Hopf
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: 396 **Previous Crop:** Corn / Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 4 /27/07 **pH** 6.7 **OM (%)** 2.7 **P (ppm)** 10 **K (ppm)** 88

Plot Management

Tillage Operations: See Factors

| | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|-------------------------|--|------------------------|---|
| Fertilizer: | | | |
| Preplant : | 9-23-30 | 200 | 11/7 /06 |
| Starter : | 9-23-30 | 200 | 5/2/2007 |
| Post plant : | 28-0-0 | 210 | 5/9/2007 |
| Manure: | N/A | N/A | N/A |
| Herbicide: | Gramoxone Inteon 1 qts/a 5/9/07 Dual II Mag 16 oz/a 5/9/07 Credit Systemic Extra 32 oz/a 6/11/07 | Insecticide: | Force 3G 4.4 lbs/A 5/2/07 |
| Irrigation: | None | Hybrid/Variety: | Corn: Dekalb DKC5020 Soybean: Kaltenberg KB248 |
| Planting Date: | Corn: 5/2/07 Soybean: 5/3/07 | Row Width: | 30" |
| Planting Method: | Kinze 2000 Interplant planter | Planting Depth: | Corn: 1.5" Soybean: 1" |
| Harvest Date: | Corn: 10/2/07 Soybean: 10/24/07 | Harvest Method: | C: Kincaid plot combine S: Almaco plot combine |

Experimental Design

Design: RCB split split plot **Replications:** 4
Plot Size Seeded: 10' x 55' **Experiment Size:** 4.5 Acres
Harvest Plot Size: 5' x 50'
Factors/Treatments:

| <u>Rotation:</u> | <u>Tillage For All Rotation:</u> | <u>Fertilizer Timing</u> |
|------------------|---|--------------------------|
| Continuous Corn | CP: Fall chisel plow +1 spring field cultivator. Spring 1-13 wave coulter with trash whippers | Fall |
| Corn / Soybean | T1: Fall Strip-Till, knife 9in., Full Berm, - Spring 1-13 wave coulter | Spring |
| Soybean / Corn | T2: Fall Strip-Till, knife 9in., No Berm, - Spring 1-13 wave coulter | |
| | T3: Fall Strip-Till, knife 6in., Full Berm, - Spring 1-13 wave coulter | |
| | T4: Fall Strip-Till, knife 6in., No Berm, -Spring 1-13 wave coulter with trash whippers | |
| | NT: Spring 1-13 wave coulter | |

Results: Tables C-47 and C-48.

**Table 47. Tillage, Rotation, and Fertilizer in Corn and Soybean Production Systems - Corn
Arlington, WI - 2007**

| Tillage | Fertilizer | Rotation | Yield bu/A | Moisture % | Test Weight lbs/bu | Grower | | Lodged | | Harvest plants/ plants/A | Residue Cover | Silk DAP no. Days | Grain Composition | | | Ethanol per bu gallons | |
|---------|------------|----------|---------------|---------------|--------------------------|----------------|------------|------------|-----------|--------------------------------|------------------|-------------------------|-------------------|-------------|--------------|------------------------------|-----|
| | | | | | | return \$/A | Total % | Stalk % | Root % | | | | Oil % | Starch % | Protein % | | |
| | CC | | 208 | 21.7 | 52.6 | 669 | 0.5 | 0.2 | 0.3 | 32307 | 51.9 | 77.7 | 3.3 | 61.2 | 7.1 | 2.92 | 605 |
| | CS | | 225 | 20.0 | 53.4 | 748 | 0.2 | 0.0 | 0.1 | 33164 | 31.1 | 73.6 | 3.4 | 61.0 | 7.2 | 2.91 | 655 |
| CP | | | 219 | 20.5 | 53.5 | 705 | 0.1 | 0.0 | 0.1 | 32474 | 13.4 | 75.1 | 3.4 | 61.0 | 7.2 | 2.91 | 637 |
| NT | | | 213 | 22.2 | 52.7 | 701 | 0.8 | 0.3 | 0.5 | 32583 | 58.4 | 77.5 | 3.4 | 61.0 | 7.1 | 2.91 | 620 |
| T1 | | | 215 | 21.0 | 52.7 | 703 | 0.3 | 0.1 | 0.1 | 32757 | 44.2 | 75.4 | 3.4 | 61.1 | 7.2 | 2.91 | 625 |
| T2 | | | 216 | 20.8 | 52.6 | 708 | 0.4 | 0.1 | 0.3 | 33127 | 48.1 | 75.6 | 3.4 | 61.1 | 7.1 | 2.91 | 628 |
| T3 | | | 219 | 19.8 | 53.1 | 724 | 0.4 | 0.2 | 0.2 | 32191 | 42.1 | 74.9 | 3.4 | 61.0 | 7.1 | 2.91 | 639 |
| T4 | | | 217 | 21.0 | 53.5 | 711 | 0.1 | 0.1 | 0.1 | 33280 | 42.9 | 75.2 | 3.4 | 61.1 | 7.1 | 2.91 | 632 |
| CP | CC | | 216 | 20.5 | 53.3 | 690 | 0.1 | 0.0 | 0.1 | 32060 | 14.4 | 76.4 | 3.4 | 61.2 | 7.0 | 2.92 | 631 |
| CP | CS | | 222 | 20.5 | 53.6 | 720 | 0.1 | 0.0 | 0.1 | 32888 | 12.4 | 73.9 | 3.5 | 60.8 | 7.3 | 2.90 | 642 |
| NT | CC | | 203 | 24.2 | 52.0 | 654 | 1.2 | 0.4 | 0.8 | 32234 | 71.4 | 79.5 | 3.4 | 61.0 | 7.1 | 2.91 | 592 |
| NT | CS | | 223 | 20.2 | 53.3 | 749 | 0.3 | 0.1 | 0.1 | 32931 | 45.5 | 75.5 | 3.4 | 61.1 | 7.1 | 2.91 | 649 |
| T1 | CC | | 206 | 22.1 | 52.2 | 661 | 0.5 | 0.3 | 0.3 | 32365 | 53.4 | 77.9 | 3.3 | 61.1 | 7.3 | 2.91 | 598 |
| T1 | CS | | 224 | 19.8 | 53.1 | 745 | 0.0 | 0.0 | 0.0 | 33149 | 35.0 | 73.0 | 3.4 | 61.0 | 7.0 | 2.91 | 653 |
| T2 | CC | | 208 | 21.6 | 51.9 | 672 | 0.3 | 0.1 | 0.1 | 32452 | 61.5 | 78.0 | 3.3 | 61.2 | 7.0 | 2.92 | 608 |
| T2 | CS | | 224 | 20.1 | 53.2 | 743 | 0.5 | 0.0 | 0.5 | 33803 | 34.8 | 73.1 | 3.4 | 60.9 | 7.2 | 2.90 | 648 |
| T3 | CC | | 209 | 20.4 | 52.8 | 680 | 0.8 | 0.4 | 0.4 | 31842 | 52.1 | 77.1 | 3.3 | 61.2 | 7.0 | 2.92 | 610 |
| T3 | CS | | 230 | 19.2 | 53.4 | 767 | 0.0 | 0.0 | 0.0 | 32539 | 32.0 | 72.8 | 3.4 | 60.9 | 7.2 | 2.91 | 668 |
| T4 | CC | | 203 | 21.8 | 53.2 | 656 | 0.0 | 0.0 | 0.0 | 32888 | 58.5 | 77.1 | 3.3 | 61.2 | 7.0 | 2.92 | 594 |
| T4 | CS | | 231 | 20.2 | 53.8 | 766 | 0.2 | 0.1 | 0.1 | 33672 | 27.3 | 73.3 | 3.4 | 61.0 | 7.1 | 2.91 | 671 |
| Fall | | | 216 | 20.9 | 52.9 | 706 | 0.2 | 0.1 | 0.1 | 32626 | 42.7 | 75.7 | 3.4 | 61.0 | 7.2 | 2.91 | 628 |
| Spring | | | 217 | 20.9 | 53.0 | 711 | 0.5 | 0.1 | 0.3 | 32844 | 40.3 | 75.6 | 3.4 | 61.1 | 7.1 | 2.91 | 633 |
| Fall | CC | | 205 | 21.6 | 52.6 | 659 | 0.4 | 0.2 | 0.2 | 32133 | 52.5 | 77.7 | 3.3 | 61.1 | 7.1 | 2.92 | 597 |
| Fall | CS | | 227 | 20.1 | 53.3 | 752 | 0.1 | 0.0 | 0.0 | 33120 | 33.0 | 73.7 | 3.5 | 60.9 | 7.2 | 2.90 | 658 |
| Spring | CC | | 211 | 21.8 | 52.5 | 679 | 0.6 | 0.2 | 0.4 | 32481 | 51.3 | 77.6 | 3.3 | 61.2 | 7.0 | 2.91 | 614 |
| Spring | CS | | 224 | 19.9 | 53.6 | 744 | 0.3 | 0.0 | 0.3 | 33207 | 29.3 | 73.5 | 3.4 | 61.0 | 7.1 | 2.91 | 652 |
| Fall | | | 214 | 21.0 | 53.3 | 685 | 0.1 | 0.0 | 0.1 | 32365 | 13.1 | 75.5 | 3.5 | 60.9 | 7.2 | 2.91 | 621 |
| CP | Spring | | 224 | 20.0 | 53.7 | 725 | 0.1 | 0.0 | 0.1 | 32583 | 13.6 | 74.8 | 3.4 | 61.1 | 7.1 | 2.91 | 652 |
| NT | Fall | | 212 | 21.8 | 52.7 | 698 | 0.7 | 0.3 | 0.4 | 33062 | 58.1 | 77.3 | 3.4 | 61.0 | 7.2 | 2.91 | 616 |
| NT | Spring | | 215 | 22.6 | 52.6 | 704 | 0.8 | 0.3 | 0.5 | 32104 | 58.8 | 77.8 | 3.4 | 61.1 | 7.0 | 2.91 | 625 |
| T1 | Fall | | 207 | 20.9 | 53.0 | 677 | 0.1 | 0.1 | 0.0 | 32583 | 47.8 | 75.4 | 3.4 | 61.0 | 7.2 | 2.91 | 603 |
| T1 | Spring | | 222 | 21.0 | 52.3 | 729 | 0.4 | 0.1 | 0.3 | 32931 | 40.6 | 75.5 | 3.4 | 61.1 | 7.1 | 2.91 | 647 |
| T2 | Fall | | 223 | 20.4 | 52.8 | 734 | 0.3 | 0.1 | 0.1 | 32278 | 48.6 | 75.5 | 3.4 | 61.0 | 7.2 | 2.91 | 648 |
| T2 | Spring | | 208 | 21.2 | 52.4 | 681 | 0.5 | 0.0 | 0.5 | 33977 | 47.6 | 75.6 | 3.3 | 61.2 | 7.0 | 2.92 | 608 |
| T3 | Fall | | 223 | 19.9 | 52.8 | 737 | 0.1 | 0.1 | 0.0 | 32714 | 45.8 | 75.1 | 3.4 | 60.9 | 7.2 | 2.91 | 651 |
| T3 | Spring | | 215 | 19.7 | 53.4 | 710 | 0.7 | 0.3 | 0.4 | 31668 | 38.4 | 74.8 | 3.3 | 61.2 | 7.0 | 2.91 | 627 |
| T4 | Fall | | 215 | 21.2 | 53.2 | 704 | 0.0 | 0.0 | 0.0 | 32757 | 43.0 | 75.4 | 3.4 | 61.2 | 7.1 | 2.91 | 627 |

(continued)

**Table C-48. Tillage and Fertilizer in Corn and Soybean Systems - Soybean
Arlington, WI - 2007.**

| Tillage treatment | Fertilizer | Yield | Moisture | Residue Cover | Grower return |
|-----------------------|------------|-------|----------|---------------|---------------|
| | | bu/A | % | % | \$/A |
| | Fall | 63.9 | 12.7 | 57.3 | 612 |
| | Spring | 64.4 | 12.6 | 55.9 | 617 |
| CP | | 59.8 | 12.6 | 18.1 | 559 |
| NT | | 60.9 | 12.7 | 81.9 | 591 |
| T1 | | 67.3 | 12.6 | 59.8 | 646 |
| T2 | | 67.8 | 12.7 | 60.1 | 650 |
| T3 | | 68.1 | 12.7 | 60.0 | 654 |
| T4 | | 61.2 | 12.7 | 59.6 | 586 |
| CP | Fall | 58.8 | 12.7 | 18.3 | 549 |
| CP | Spring | 60.8 | 12.5 | 18.0 | 569 |
| NT | Fall | 63.3 | 12.8 | 83.5 | 616 |
| NT | Spring | 58.4 | 12.7 | 80.3 | 567 |
| T1 | Fall | 63.0 | 12.6 | 59.3 | 604 |
| T1 | Spring | 71.7 | 12.6 | 60.3 | 689 |
| T2 | Fall | 67.3 | 12.8 | 62.3 | 646 |
| T2 | Spring | 68.2 | 12.7 | 58.0 | 655 |
| T3 | Fall | 68.6 | 12.8 | 59.8 | 658 |
| T3 | Spring | 67.6 | 12.6 | 60.3 | 649 |
| T4 | Fall | 62.4 | 12.8 | 60.8 | 599 |
| T4 | Spring | 59.9 | 12.6 | 58.5 | 574 |
| mean | | 64.2 | 12.7 | 56.6 | 614 |
| Probability(%) | | | | | |
| Tillage (T) | | 0.0 | 79.1 | 0.0 | 0.0 |
| Fertilizer (F) | | 68.3 | 12.5 | 42.8 | 68.3 |
| T x F | | 7.8 | 88.4 | 93.3 | 7.8 |
| LSD (0.05) | | | | | |
| Tillage (T) | | 3.8 | 0.2 | 5.2 | 37.1 |
| Fertilizer (F) | | NS | NS | NS | NS |
| T x F | | NS | NS | NS | NS |
| CV(%) | | | | | |
| | | 7 | 2 | 11 | 7 |

FIELD EXPERIMENT HISTORY

Title: 17 Tillage On-Farm Trials
Experiment: 17Tillage **Trial ID:** 3057 **Year:** 2007
Personnel: J. G. Lauer, K. D. Kohn, J.T. Hopf
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: 26 **Previous Crop:** Corn **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 4 /27/07 **pH** 6.3 **OM (%)** 3.8 **P (ppm)** 68 **K (ppm)** 79

Plot Management

Tillage Operations: See Factors

| | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|-------------------------|--|------------------------|---------------------------|
| Fertilizer: | Preplant : 9-23-30 | 200 | 11/1 /06 |
| | Starter : 9-23-30 | 200 | 5/2/2007 |
| | Post plant : 28-0-0 | 210 | 5/9/2007 |
| | Manure: N/A | N/A | N/A |
| Herbicide: | Gramoxone Inteon 1 qts/a 5/9/07 Dual II Mag 16 oz/a 5/9/07 Credit Systemic Extra 32 oz/a 6/11/07 | Insecticide: | Force 3G 4.4 lbs/A 5/2/07 |
| Irrigation: | None | Hybrid/Variety: | Pioneer 35F40 |
| Planting Date: | 5/2/07 | Row Width: | 30" |
| Planting Method: | Kinze 2000 Interplant planter | Planting Depth: | 1.5" |
| Harvest Date: | 10/5/07 | Harvest Method: | Kincaid plot combine |

Experimental Design

Design: RCB split plot **Replications:** 3
Plot Size Seeded: 30' x100' **Experiment Size:** 30' x100'
Harvest Plot Size: 5' x 100'
Factors/Treatments:

Rotation:

Continuous Corn

Tillage + Fertilizer Treatments

1. Fall Strip-Till, Knife 9 in., Fertilizer 7 in., Full Berm
2. Fall Strip -Till, Knife 6 in., Fertilizer 4 in., Full Berm
3. Fall Strip - Till, Knife 9 in., No Fertilizer, Full Berm
4. Fall Strip - Till, Knife 6 in., No Fertilizer, Full Berm
5. Fall Strip - Till, Knife 9 in., Fertilizer 7 in., No Berm
6. Fall Strip - Till, Knife 6 in., Fertilizer 4 in., No Berm
7. Fall Strip - Till, Knife 9 in., No Fertilizer, No Berm
8. Fall Strip - Till, Knife 6 in., No Fertilizer, No Berm
9. No Till, Fertilizer applied with Planter
10. Fall Chisel plow, 2 spring field cultivations, fertilizer applied with planter

Results: Tables C-49

**Table 49. Tillage and Fertilizer in Continuous Corn Production Systems
Field 26, WI - 2007**

| Treatment | Yield | | Moisture | | Test Grower | | Lodged | | Harvest | | Residue | | Silk | | Grain Composition | | Ethanol | |
|-----------------------|-------|------|----------|------|-------------|-------|--------|-------|----------|-----|---------|------|----------|------|-------------------|---------|---------|---------|
| | bu/A | % | lbs/bu | \$/A | Total | Stalk | Root | % | plants/A | % | Cover | DAP | no. Days | Oil | Starch | Protein | per bu | gallons |
| CP-Spring | 226 | 25.8 | 52 | 700 | 1 | 1 | 0 | 32757 | 22 | 78 | 3.4 | 59.8 | 8.0 | 2.90 | 657 | | | |
| NT-Spring | 211 | 28.1 | 51 | 663 | 1 | 0 | 1 | 33164 | 82 | 82 | 3.3 | 60.2 | 7.5 | 2.94 | 621 | | | |
| T1-Fall | 238 | 25.6 | 52 | 753 | 1 | 0 | 1 | 33686 | 64 | 80 | 3.3 | 60.4 | 7.6 | 2.93 | 699 | | | |
| T1-Spring | 240 | 25.7 | 52 | 758 | 3 | 0 | 3 | 32351 | 64 | 80 | 3.3 | 60.1 | 7.8 | 2.92 | 700 | | | |
| T2-Fall | 234 | 26.7 | 52 | 734 | 1 | 1 | 1 | 33628 | 61 | 79 | 3.4 | 60.2 | 7.8 | 2.91 | 682 | | | |
| T2-Spring | 236 | 26.3 | 52 | 744 | 0 | 0 | 0 | 34325 | 66 | 79 | 3.3 | 60.3 | 7.4 | 2.93 | 693 | | | |
| T3-Fall | 233 | 25.9 | 53 | 735 | 1 | 0 | 1 | 31654 | 63 | 79 | 3.3 | 60.0 | 7.9 | 2.91 | 678 | | | |
| T3-Spring | 248 | 25.8 | 52 | 784 | 0 | 0 | 0 | 32699 | 61 | 80 | 3.3 | 60.0 | 7.9 | 2.91 | 721 | | | |
| T4-Fall | 237 | 25.9 | 52 | 749 | 1 | 0 | 1 | 32699 | 64 | 79 | 3.3 | 60.3 | 7.7 | 2.93 | 695 | | | |
| T4-Spring | 234 | 26.3 | 51 | 738 | 1 | 0 | 1 | 33686 | 63 | 79 | 3.3 | 60.1 | 7.7 | 2.92 | 685 | | | |
| Probability(%) | | | | | | | | | | | | | | | | | | |
| Treatment | 6.6 | 5.8 | 21.3 | 6.7 | 13.6 | 40.0 | 18.9 | 11.2 | 0.0 | 0.7 | 90.5 | 4.8 | 0.5 | 10.9 | 11 | | | |
| LSD (0.05) | | | | | | | | | | | | | | | | | | |
| Treatment | NS | NS | NS | NS | NS | NS | NS | NS | 6 | 1.5 | NS | 0.4 | 0.3 | NS | NS | | | |

FIELD EXPERIMENT HISTORY

Title: 17 Tillage On-Farm Trials
Experiment: 17Tillage **Trial ID:** 3069 **Year:** 2007
Personnel: J. G. Lauer, K. D. Kohn, J.T. Hopf
Location: Arlington, WI **County:** Columbia
Supported By: HATCH

Site Information

Field: 27 **Previous Crop:** Soybean **Soil Type:** Plano Silt Loam
Soil Test: **Date:** 4 /27/07 **pH** 6.5 **OM (%)** 4.1 **P (ppm)** 109 **K (ppm)** 159

Plot Management

Tillage Operations: See Factors

| | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|---------------------|------------------|--------------------|--------------|
| Fertilizer: | | | |
| Preplant : | 9-23-30 | 200 | 11/1 /06 |
| Starter : | 9-23-30 | 200 | 5/2/2007 |
| Post plant : | 28-0-0 | 210 | 5/9/2007 |
| Manure: | N/A | N/A | N/A |

Herbicide: Gramoxone Inteon 1 qts/a 5/9/07 **Insecticide:** Force 3G 4.4 lbs/A 5/2/07
 Dual II Mag 16 oz/a 5/9/07
 Credit Systemic Extra 32 oz/a 6/11/07

Irrigation: None **Hybrid/Variety:** Pioneer 35F40

Planting Date: 5/2/07 **Row Width:** 30"

Planting Method: Kinze 2000 Interplant planter **Planting Depth:** 1.5"

Harvest Date: 10/5/07 **Harvest Method:** Kincaid plot combine

Experimental Design

Design: RCB split plot **Replications:** 3
Plot Size Seeded: 30' x100' **Experiment Size:** 30' x100'
Harvest Plot Size: 5' x 100'

Factors/Treatments:

Rotation:

Corn/Soybean

Tillage + Fertilizer Treatments

1. Fall Strip-Till, Knife 9 in., Fertilizer 7 in., Full Berm
2. Fall Strip -Till, Knife 6 in., Fertilizer 4 in., Full Berm
3. Fall Strip - Till, Knife 9 in., No Fertilizer, Full Berm
4. Fall Strip - Till, Knife 6 in., No Fertilizer, Full Berm
5. Fall Strip - Till, Knife 9 in., Fertilizer 7 in., No Berm
6. Fall Strip - Till, Knife 6 in., Fertilizer 4 in., No Berm
7. Fall Strip - Till, Knife 9 in., No Fertilizer, No Berm
8. Fall Strip - Till, Knife 6 in., No Fertilizer, No Berm
9. No Till, Fertilizer applied with Planter
10. Fall Chisel plow, 2 spring field cultivations, fertilizer applied with

Results: Tables C-50

**Table 50. Tillage and Fertilizer in Corn/Soybean Production Systems
Field 27, WI - 2007**

| Treatment | Yield | | Moisture | | Test | | Grower | | Lodged | | Harvest | | Residue | | Silk | | Grain Composition | | Ethanol | | |
|-----------------------|-------|------|----------|------|------|-------|--------|-------|----------|-----|----------|------|---------|---------|--------|---------|-------------------|--|---------|--|--|
| | bu/A | % | lbs/bu | % | \$/A | Total | Stalk | Root | plants/A | % | no. Days | Oil | Starch | Protein | per bu | gallons | | | | | |
| CP-Spring | 258 | 22.2 | 55 | 0 | 835 | 0 | 0 | 0 | 32699 | 2 | 76 | 3.4 | 60.2 | 7.6 | 2.92 | 756 | | | | | |
| NT-Spring | 252 | 23.4 | 54 | 0 | 830 | 0 | 0 | 33222 | 32 | 77 | 3.4 | 60.2 | 7.6 | 2.93 | 738 | | | | | | |
| T1-Fall | 250 | 23.3 | 54 | 1 | 814 | 1 | 0 | 33570 | 18 | 77 | 3.4 | 60.2 | 7.6 | 2.94 | 734 | | | | | | |
| T1-Spring | 251 | 22.9 | 54 | 1 | 821 | 1 | 0 | 34267 | 17 | 77 | 3.3 | 60.4 | 7.4 | 2.94 | 738 | | | | | | |
| T2-Fall | 255 | 22.9 | 54 | 2 | 833 | 2 | 0 | 33919 | 17 | 77 | 3.4 | 60.2 | 7.7 | 2.92 | 744 | | | | | | |
| T2-Spring | 253 | 22.6 | 54 | 2 | 829 | 2 | 0 | 33977 | 18 | 77 | 3.3 | 60.3 | 7.7 | 2.93 | 741 | | | | | | |
| T3-Fall | 245 | 23.0 | 54 | 0 | 801 | 0 | 0 | 33106 | 17 | 77 | 3.3 | 60.3 | 7.5 | 2.94 | 720 | | | | | | |
| T3-Spring | 256 | 23.1 | 54 | 2 | 835 | 2 | 1 | 33628 | 19 | 77 | 3.4 | 60.1 | 7.7 | 2.93 | 748 | | | | | | |
| T4-Fall | 235 | 22.2 | 55 | 1 | 770 | 1 | 0 | 33338 | 18 | 76 | 3.4 | 60.1 | 7.7 | 2.91 | 683 | | | | | | |
| T4-Spring | 250 | 22.9 | 54 | 3 | 818 | 3 | 0 | 31886 | 18 | 77 | 3.4 | 60.2 | 7.7 | 2.92 | 731 | | | | | | |
| Probability(%) | | | | | | | | | | | | | | | | | | | | | |
| Treatment | 13.3 | 11.7 | 18.7 | 11.7 | 24.5 | 39.4 | 11.2 | 41.3 | 23.3 | 0.0 | 20.8 | 71.4 | 72.9 | 63.2 | 3.4 | 14 | | | | | |
| LSD (0.05) | | | | | | | | | | | | | | | | | | | | | |
| Treatment | NS | NS | NS | NS | NS | NS | NS | NS | NS | 3 | NS | NS | NS | NS | 0.0 | NS | | | | | |

FIELD EXPERIMENT HISTORY

Title: 17 Tillage On-Farm Trials
Experiment: 17Tillage **Trial ID:** 3058 **Year:** 2007
Personnel: J.G. Lauer, K.D. Kohn, J.T. Hopf, G.L. Hopf
Location: Howards Grove, WI **County:** Sheboygan
Supported By: Hatch

Site Information

Field: Hopf 1 **Previous Crop:** Corn **Soil Type:** Kewaunee Silt Clay Loam
Soil Test: **Date:** 5 /09/07 **pH** 7.5 **OM (%)** 3.1 **P (ppm)** 53 **K (ppm)** 95

Plot Management

Tillage Operations: See Factors

| | | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|--------------------|---------------------|------------------|--------------------|--------------|
| Fertilizer: | Preplant : | 9-23-30 | 200 | 11/3 /06 |
| | Starter : | 9-23-30 | 200 | 5/12/2007 |
| | Post plant : | 28-0-0 | 150 | 6 /11/07 |
| | Manure: | N/A | N/A | N/A |

Herbicide: Glyphomax 22 oz/a 6/2/07

Insecticide:

Irrigation: None

Hybrid/Variety: Dekalb DKC4288

Planting Date: 5/12/07

Row Width: 30"

Planting Method: Case IH 955 minimum-till early

Planting Depth: 1.5"

Harvest Date: 10/17/07

Harvest Method: Kincaid plot combine

Experimental Design

Design: RCB split plot

Replications: 3

Plot Size Seeded: 30' x100'

Experiment Size: 3.44 Acres

Harvest Plot Size: 5' x 100'

Factors/Treatments:

Rotation:

Continuous Corn

Tillage + Fertilizer Treatments

1. Fall Strip-Till, Knife 9 in., Fertilizer 7 in., Full Berm
2. Fall Strip -Till, Knife 6 in., Fertilizer 4 in., Full Berm
3. Fall Strip - Till, Knife 9 in., No Fertilizer, Full Berm
4. Fall Strip - Till, Knife 6 in., No Fertilizer, Full Berm
5. Fall Strip - Till, Knife 9 in., Fertilizer 7 in., No Berm
6. Fall Strip - Till, Knife 6 in., Fertilizer 4 in., No Berm
7. Fall Strip - Till, Knife 9 in., No Fertilizer, No Berm
8. Fall Strip - Till, Knife 6 in., No Fertilizer, No Berm
9. No Till, Fertilizer applied with Planter
10. Fall Chisel plow, 2 spring field cultivations, fertilizer applied with planter

Results: Tables C-51

**Table 51. Tillage and Fertilizer in Continuous Corn Production Systems
Hopf 1, WI - 2007**

| Treatment | Yield | | Moisture | | Test | | Grower | | Lodged | | Harvest | | Residue | | Grain Composition | | Ethanol | | |
|-----------------------|-------|------|----------|------|-------|-------|--------|----------|--------|------|---------|---------|---------|---------|-------------------|--|---------|--|--|
| | bu/A | % | lbs/bu | % | Total | Stalk | Root | plants/A | Cover | Oil | Starch | Protein | per bu | gallons | | | | | |
| CP-Spring | 173 | 23.1 | 51 | 1 | 1 | 0 | 27356 | 13 | 3.0 | 59.9 | 7.9 | 2.91 | 503 | | | | | | |
| NT-Spring | 141 | 23.9 | 49 | 2 | 2 | 0 | 28401 | 82 | 3.1 | 60.1 | 7.6 | 2.92 | 412 | | | | | | |
| T1-Fall | 164 | 22.2 | 50 | 1 | 1 | 0 | 32002 | 66 | 3.1 | 60.2 | 7.5 | 2.94 | 481 | | | | | | |
| T1-Spring | 176 | 22.9 | 51 | 1 | 1 | 0 | 27356 | 63 | 3.1 | 60.1 | 7.7 | 2.93 | 514 | | | | | | |
| T2-Fall | 164 | 23.0 | 50 | 1 | 1 | 0 | 31131 | 62 | 3.1 | 60.5 | 7.4 | 2.95 | 483 | | | | | | |
| T2-Spring | 167 | 21.2 | 51 | 1 | 1 | 0 | 28111 | 63 | 3.1 | 60.2 | 7.5 | 2.93 | 489 | | | | | | |
| T3-Fall | 170 | 22.0 | 51 | 1 | 1 | 0 | 28924 | 65 | 3.1 | 60.4 | 7.5 | 2.94 | 498 | | | | | | |
| T3-Spring | 162 | 21.2 | 50 | 2 | 2 | 0 | 27937 | 64 | 3.2 | 60.3 | 7.5 | 2.93 | 473 | | | | | | |
| T4-Fall | 171 | 23.5 | 51 | 2 | 2 | 0 | 28575 | 66 | 3.0 | 60.6 | 7.6 | 2.93 | 501 | | | | | | |
| T4-Spring | 172 | 22.4 | 51 | 1 | 1 | 0 | 28866 | 68 | 3.1 | 60.3 | 7.8 | 2.92 | 502 | | | | | | |
| Probability(%) | | | | | | | | | | | | | | | | | | | |
| Treatment | 59.6 | 77.3 | 42.7 | 72.4 | 36.6 | 43.9 | 47.4 | 5.7 | 0.0 | 24.4 | 43.9 | 59.3 | 77.7 | 63 | | | | | |
| LSD (0.05) | | | | | | | | | | | | | | | | | | | |
| Treatment | NS | NS | NS | NS | NS | NS | NS | NS | 6 | NS | NS | NS | NS | NS | | | | | |

FIELD EXPERIMENT HISTORY

Title: 17 Tillage On-Farm Trials
Experiment: 17Tillage **Trial ID:** 3070 **Year:** 2007
Personnel: J.G. Lauer, K.D. Kohn, J.T. Hopf, G.L. Hopf
Location: Howards Grove, WI **County:** Sheboygan
Supported By: Hatch

Site Information

Field: Hopf 2 **Previous Crop:** Soybean **Soil Type:** Kewaunee Silt Clay Loam
Soil Test: **Date:** 5 /09/07 **pH** 7.7 **OM (%)** 2.8 **P (ppm)** 13 **K (ppm)** 80

Plot Management

Tillage Operations: See Factors

| | | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|--------------------|---------------------|------------------|--------------------|--------------|
| Fertilizer: | Preplant : | 9-23-30 | 200 | 11/3 /06 |
| | Starter : | 9-23-30 | 200 | 5/7/2007 |
| | Post plant : | 28-0-0 | 120 | 28-0-0 |
| | Manure: | N/A | N/A | N/A |

Herbicide: Glyphomax 22 oz/a 5/31/07

Insecticide:

Irrigation: None

Hybrid/Variety: Dekalb DKC4288

Planting Date: 5/7/07

Row Width: 30"

Planting Method: Case IH 955 minimum-till early

Planting Depth: 1.5"

Harvest Date: 10/17/07

Harvest Method: Kincaid plot combine

Experimental Design

Design: RCB split plot

Replications: 3

Plot Size Seeded: 30' x100'

Experiment Size: 3.44 Acres

Harvest Plot Size: 5' x 100'

Factors/Treatments:

Rotation:

Corn/Soybean

Tillage + Fertilizer Treatments

1. Fall Strip-Till, Knife 9 in., Fertilizer 7 in., Full Berm
2. Fall Strip -Till, Knife 6 in., Fertilizer 4 in., Full Berm
3. Fall Strip - Till, Knife 9 in., No Fertilizer, Full Berm
4. Fall Strip - Till, Knife 6 in., No Fertilizer, Full Berm
5. Fall Strip - Till, Knife 9 in., Fertilizer 7 in., No Berm
6. Fall Strip - Till, Knife 6 in., Fertilizer 4 in., No Berm
7. Fall Strip - Till, Knife 9 in., No Fertilizer, No Berm
8. Fall Strip - Till, Knife 6 in., No Fertilizer, No Berm
9. No Till, Fertilizer applied with Planter
10. Fall Chisel plow, 2 spring field cultivations, fertilizer applied with

Results: Tables C-52

**Table 52. Tillage and Fertilizer in Corn/Soybean Production Systems
Hopf 2, WI - 2007**

| Treatment | Yield | | Moisture | | Test Weight | | Grower return | | Lodged | | Harvest | | Residue | | Grain Composition | | Ethanol | |
|-----------------------|-------|------|----------|------|-------------|-------|---------------|----------|--------|------|---------|---------|---------|---------|-------------------|---------|---------|--|
| | bu/A | % | lbs/bu | % | Total | Stalk | Root | plants/A | Cover | Oil | Starch | Protein | per bu | gallons | per A | gallons | | |
| CP-Spring | 148 | 19.0 | 53 | 0 | 0 | 0 | 0 | 29969 | 2 | 3.1 | 60.7 | 7.0 | 2.97 | 441 | | | | |
| NT-Spring | 144 | 18.5 | 53 | 0 | 0 | 0 | 30144 | 30 | 3.1 | 60.8 | 7.1 | 2.97 | 429 | | | | | |
| T1-Fall | 148 | 18.5 | 53 | 0 | 0 | 0 | 30782 | 16 | 3.2 | 60.6 | 7.0 | 2.97 | 438 | | | | | |
| T1-Spring | 148 | 18.8 | 53 | 0 | 0 | 0 | 31305 | 15 | 3.2 | 60.8 | 7.1 | 2.97 | 439 | | | | | |
| T2-Fall | 157 | 18.6 | 53 | 0 | 0 | 0 | 29969 | 15 | 3.1 | 60.4 | 7.3 | 2.96 | 465 | | | | | |
| T2-Spring | 165 | 18.5 | 53 | 0 | 0 | 0 | 29737 | 16 | 3.1 | 60.5 | 7.0 | 2.96 | 488 | | | | | |
| T3-Fall | 147 | 18.4 | 54 | 0 | 0 | 0 | 30434 | 17 | 3.2 | 60.4 | 7.1 | 2.95 | 434 | | | | | |
| T3-Spring | 148 | 18.1 | 53 | 0 | 0 | 0 | 29272 | 16 | 3.1 | 60.6 | 7.1 | 2.97 | 440 | | | | | |
| T4-Fall | 155 | 17.8 | 54 | 0 | 0 | 0 | 29911 | 18 | 3.1 | 60.5 | 7.1 | 2.97 | 459 | | | | | |
| T4-Spring | 142 | 18.9 | 53 | 0 | 0 | 0 | 30318 | 17 | 3.1 | 60.7 | 7.0 | 2.97 | 422 | | | | | |
| Probability(%) | | | | | | | | | | | | | | | | | | |
| Treatment | 97.8 | 49.5 | 85.5 | 97.3 | 16.6 | 55.2 | 55.2 | 73.4 | 0.0 | 58.4 | 97.5 | 71.0 | 98.2 | 98 | | | | |
| LSD (0.05) | | | | | | | | | | | | | | | | | | |
| Treatment | NS | NS | NS | NS | NS | NS | NS | NS | 3 | NS | NS | NS | NS | NS | | | | |

FIELD EXPERIMENT HISTORY

Title: 17 Tillage On-Farm Trials
Experiment: 17Tillage **Trial ID:** 3071 **Year:** 2007
Personnel: J.G. Lauer, K.D. Kohn, J.T. Hopf, G.L. Hopf
Location: Howards Grove, W **County:** Sheboygan
Supported By: Hatch

Site Information

Field: Hopf 3 **Previous Crop:** Wheat **Soil Type:** Kewaunee Silt Clay Loam
Soil Test: **Date:** 5 /09/07 **pH** 7.7 **OM (%)** 2.5 **P (ppm)** 8 **K (ppm)** 87

Plot Management

Tillage Operations: See Factors

| | <u>Analysis:</u> | <u>Rate lbs/A:</u> | <u>Date:</u> |
|--------------------------------------|------------------|--------------------|--------------|
| Fertilizer: Preplant : | 9-23-30 | 200 | 11/3 /06 |
| Starter : | 9-23-30 | 200 | 5/7/2007 |
| Post plant : | 28-0-0 | 150 | 28-0-0 |
| Manure: | N/A | N/A | N/A |

Herbicide: Glyphomax 22 oz/a 6/1/07

Insecticide:

Irrigation: None

Hybrid/Variety: Dekalb DKC4288

Planting Date: 5/7/07

Row Width: 30"

Planting Method: Case IH 955 minimum-till early

Planting Depth: 1.5"

Harvest Date: 10/17/07

Harvest Method: Kincaid plot combine

Experimental Design

Design: RCB split plot

Replications: 3

Plot Size Seeded: 30' x100'

Experiment Size: 3.44 Acres

Harvest Plot Size: 5' x 100'

Factors/Treatments:

Rotation:

Corn/Wheat

Tillage + Fertilizer Treatments

1. Fall Strip-Till, Knife 9 in., Fertilizer 7 in., Full Berm
2. Fall Strip -Till, Knife 6 in., Fertilizer 4 in., Full Berm
3. Fall Strip - Till, Knife 9 in., No Fertilizer, Full Berm
4. Fall Strip - Till, Knife 6 in., No Fertilizer, Full Berm
5. Fall Strip - Till, Knife 9 in., Fertilizer 7 in., No Berm
6. Fall Strip - Till, Knife 6 in., Fertilizer 4 in., No Berm
7. Fall Strip - Till, Knife 9 in., No Fertilizer, No Berm
8. Fall Strip - Till, Knife 6 in., No Fertilizer, No Berm
9. No Till, Fertilizer applied with Planter
10. Fall Chisel plow, 2 spring field cultivations, fertilizer applied with

Results: Tables C-53

**Table 53. Tillage and Fertilizer in Corn/Wheat Production Systems
Hopf 3, WI - 2007**

| Treatment | Yield bu/A | Moisture % | Test Grower | | Lodged | | Harvest plants/A | Residue Cover | Grain Composition | | | Ethanol per bu | | |
|-----------------------|---------------|---------------|------------------|----------------|------------|------------|---------------------|------------------|-------------------|----------|-------------|-------------------|--------------|------------------|
| | | | Weight lbs/bu | return \$/A | Total % | Stalk % | | | Root % | Oil % | Starch % | | Protein % | gallons per A |
| CP-Spring | 139 | 18.8 | 54 | 436 | 0.3 | 0.3 | 0.0 | 32118 | 1 | 3.1 | 60.8 | 7.2 | 2.96 | 411 |
| NT-Spring | 133 | 19.8 | 53 | 436 | 0.0 | 0.0 | 0.0 | 30957 | 75 | 3.1 | 60.6 | 7.2 | 2.96 | 395 |
| T1-Fall | 136 | 20.7 | 52 | 436 | 0.0 | 0.0 | 0.5 | 31828 | 58 | 3.1 | 60.5 | 7.2 | 2.95 | 403 |
| T1-Spring | 143 | 19.8 | 52 | 461 | 0.0 | 0.0 | 0.5 | 28924 | 58 | 3.2 | 60.7 | 7.1 | 2.95 | 422 |
| T2-Fall | 128 | 18.6 | 54 | 413 | 0.0 | 0.0 | 1.0 | 33106 | 61 | 3.2 | 61.0 | 6.7 | 2.97 | 380 |
| T2-Spring | 119 | 19.3 | 53 | 380 | 0.0 | 0.0 | 1.3 | 33338 | 57 | 3.1 | 60.8 | 7.2 | 2.96 | 351 |
| Probability(%) | | | | | | | | | | | | | | |
| Treatment | 60.0 | 14.5 | 19.6 | 63.9 | 45.8 | 45.8 | 52.3 | 2.9 | 0.0 | 47.6 | 19.3 | 50.8 | 17.3 | 63 |
| LSD (0.05) | | | | | | | | | | | | | | |
| Treatment | NS | NS | NS | NS | NS | NS | NS | 2591 | 9 | NS | NS | NS | NS | NS |

FIELD EXPERIMENT HISTORY

Title: Corn Tillage Study
Experiment: 17 Tillage **Trial ID:** 07C53 **Year:** 2007
Personnel: M.G. Bertram
Location: Marshfield, WI **County:** Wood
Supported by: Marshfield Ag. Research Station

Site Information

Field: N5 **Previous Crop:** Soybean **Soil Type:** Withee silt loam
Soil Test : **Date:** 10/31/06 **pH** 6.8 **SOM (%)** 3.0 **P (ppm)** 55 **K (ppm)** 126

Plot Management

Tillage Operations: varies Cultivate 6/12/07
Fertilizer:

| | <u>Analysis</u> | <u>Rate</u> | <u>Date</u> |
|-------------------|-----------------|-------------|-------------|
| Preplant | none | N/A | N/A |
| Starter | 9-11-30 | 150 lb/A | 5/8/2007 |
| Post plant | 28-0-0 | 27 gal/A | 6/12/2007 |
| Manure | none | N/A | N/A |

Herbicide: Outlook 14 oz/A **Insecticide:** None
 Hornet 2.4 oz/A
 Atrazine 1 qt/A

Irrigation: None **Hybrid:** Dekalb DKC37-14
Planting Date: 5/8/2007 **Planting Depth:** 1.5" **Row Width:** 30"
Target Plant Density: 35,000 plants per acre **Planting Method:** John Deere 1750 planter
Harvest Date: 11/9/2007 **Harvest Method:** John Deere combine

Notes:

Experimental Design

Design: RCB **Replications:** 3
Plot Size Seeded: 540' x 30' **Experiment Size:** 7.25 A
Harvest Plot size: 538' x 30'

Factors/Treatments:

| <u>Tillage</u> | Fall | Spring |
|------------------------|-------------|-------------------------------|
| Fall chisel | Chisel plow | Field Cultivator |
| Fall strip till | Strip Till | Field Cultivator |
| Spring chisel | None | Chisel plow, Field Cultivator |
| Spring field cultivate | None | Field Cultivator |

Results: Table C-54.

**Table C-54. Corn Tillage Study - 2007
Marshfield, WI**

| Tillage | Emergence Population | | | | | Harvest Population ppa | Broken Stalks % | Test Weight lb/bu | Grain | | Partial Return* |
|-------------------------------|----------------------|--------|--------|-------|----------|---------------------------|--------------------|----------------------|-------|------|-----------------|
| | 24-May | 26-May | 30-May | 1-Jun | Moisture | | | | Yield | | |
| | --- ppa --- | | | | | | | | % | | |
| Fall chisel | 32990 | 33222 | 33686 | 33803 | 33571 | 21 | 58.1 | 15.7 | 139 | 393 | |
| Fall strip till | 32176 | 32990 | 33106 | 33454 | 33222 | 26 | 58.3 | 15.6 | 141 | 399 | |
| Spring chisel | 32176 | 32757 | 32873 | 33222 | 32176 | 22 | 57.7 | 15.7 | 139 | 394 | |
| Spring field cultivate | 27762 | 29969 | 31479 | 31944 | 31131 | 19 | 58.2 | 15.5 | 139 | 406 | |
| Mean | 31276 | 32235 | 32786 | 33106 | 32525 | 22 | 58 | 15.6 | 140 | 398 | |
| <u>Probability (%)</u> | | | | | | | | | | | |
| Tillage | 0.7 | 3.2 | 22.6 | 29.6 | 33.5 | 35.8 | 10.8 | 38.1 | 41.0 | 15.2 | |
| <u>LSD 10%</u> | | | | | | | | | | | |
| Tillage | 1924 | 1716 | NS | NS | NS | NS | 0.4 | NS | NS | 10 | |
| <u>C.V. (%)</u> | | | | | | | | | | | |
| | 4 | 3 | 4 | 3 | 5 | 21 | 0 | 1 | 2 | 2 | |

* Partial return after tillage assumes \$3/bu corn price. Tillage prices from 2004 WI Ag. Custom Rate Guide
Chisel plow- \$13.30/A; Strip till- \$14.90-A; Field cultivate- \$10.20/A