

Ray Bange, western Kansas irrigated producer, Eric Moore, independent agronomist, review 3 years of Exactrix test plots with Idaho producers... Less Is More.



Exactrix test plots, randomized and replicated 3 times, measured with a scale, using an independent agronomist, produces a new understanding of nutrient efficiency.



Exactrix owners receive \$1000 for valuable nutrient management data. Results of test plots indicate nutrients are over applied.... Why? Non uniform application of the "old fashioned" metering systems and poor timing.

**Wheat.. considered Exactrix TAPPS No-Tillage Systems compared to Tillage Systems.**



Annual No-till winter wheat. Exactrix dual product TAPPS



Contrasting Systems, Quinter, KS, 2006, side by side comparison. Economics visually explained.



Summer fallow winter wheat-tillage system was sold to crop insurance for a 6 bushel per acre.

**Corn.. considered Exactrix TAPPS No-Tillage Systems compared to Tillage Systems.**



Annual No-till corn on winter wheat stubble of 2006 with Exactrix TAPPS rotational band loading. On the left pre-plant nutrients applied no-till with Exactrix Deere wing injection.



Contrasting Systems, Quinter, KS, 2007, Same two fields from 2006 in a side by side comparison.



The Exactrix owner was so proud of the decision to implement Exactrix technology that he called our staff to visually see the results as shown in these photos.

2003

**CORN**

Exactrix Test Data supplied by producer Ray Bange, Colby, KS. and Eric Moore, Agronomist.

Exactrix-Gram, \$1,000 paid to all Exactrix producers generating randomized and replicated plots to determine nitrogen use efficiency.

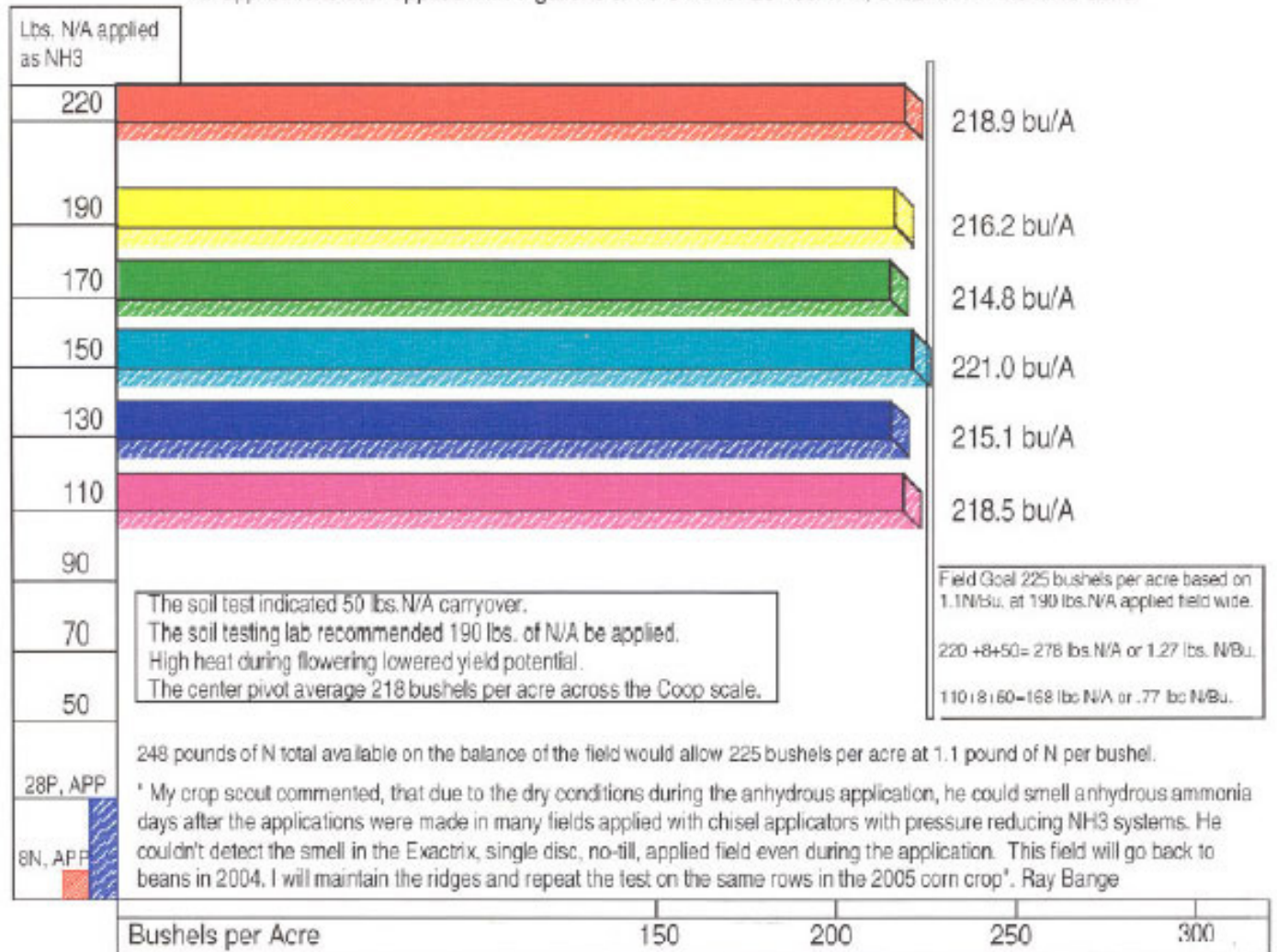
November 2003.

No difference in yield. 220 to 110 lbs. N/A.  
 Maximum Economic Yield: 118 lbs.N/A. 28 P.  
 Point of diminishing return: not determined.

Significant Placed Nutrient Advantage:

1. Exactrix low CV, uniform application.
2. Dual Placement, APP.

Ray Bange, Colby, KS. Center Pivot, Ridge Till, Soybean Rotation, Fall Applied 2002 for 2003.  
 Exactrix 2KFT, Single Disc Bourgault, 30' centers applied 6" from side of Ridge.  
 All applications dual applied with 7 gallons of 10-34-0 or 28 lbs. P/A, 8 lbs.N/A in the NH3 band.





2004, 2nd year.

No-Tillers, **Red Alert.**

**CORN**

Exactrix Test Data supplied by producer Ray Bange, Colby, KS. and Eric Moore, Agronomist.

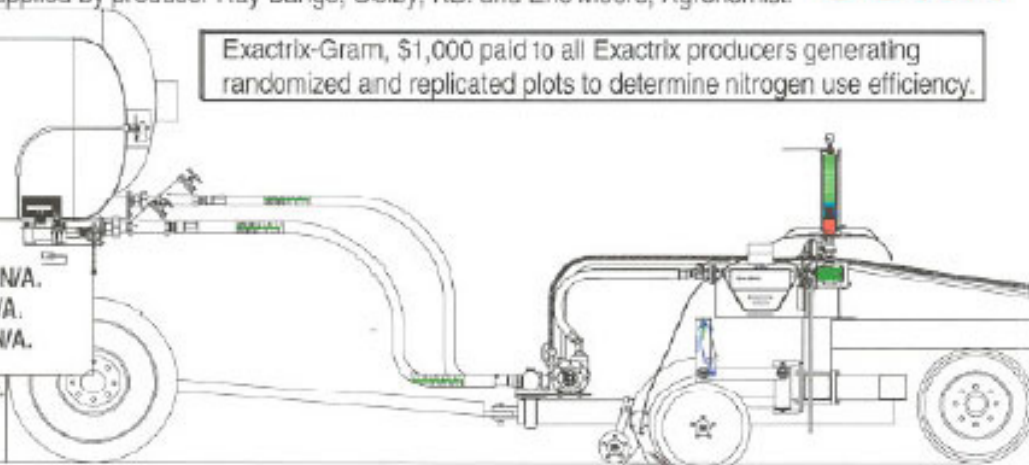
Exactrix-Gram, \$1,000 paid to all Exactrix producers generating randomized and replicated plots to determine nitrogen use efficiency.

November 2004.

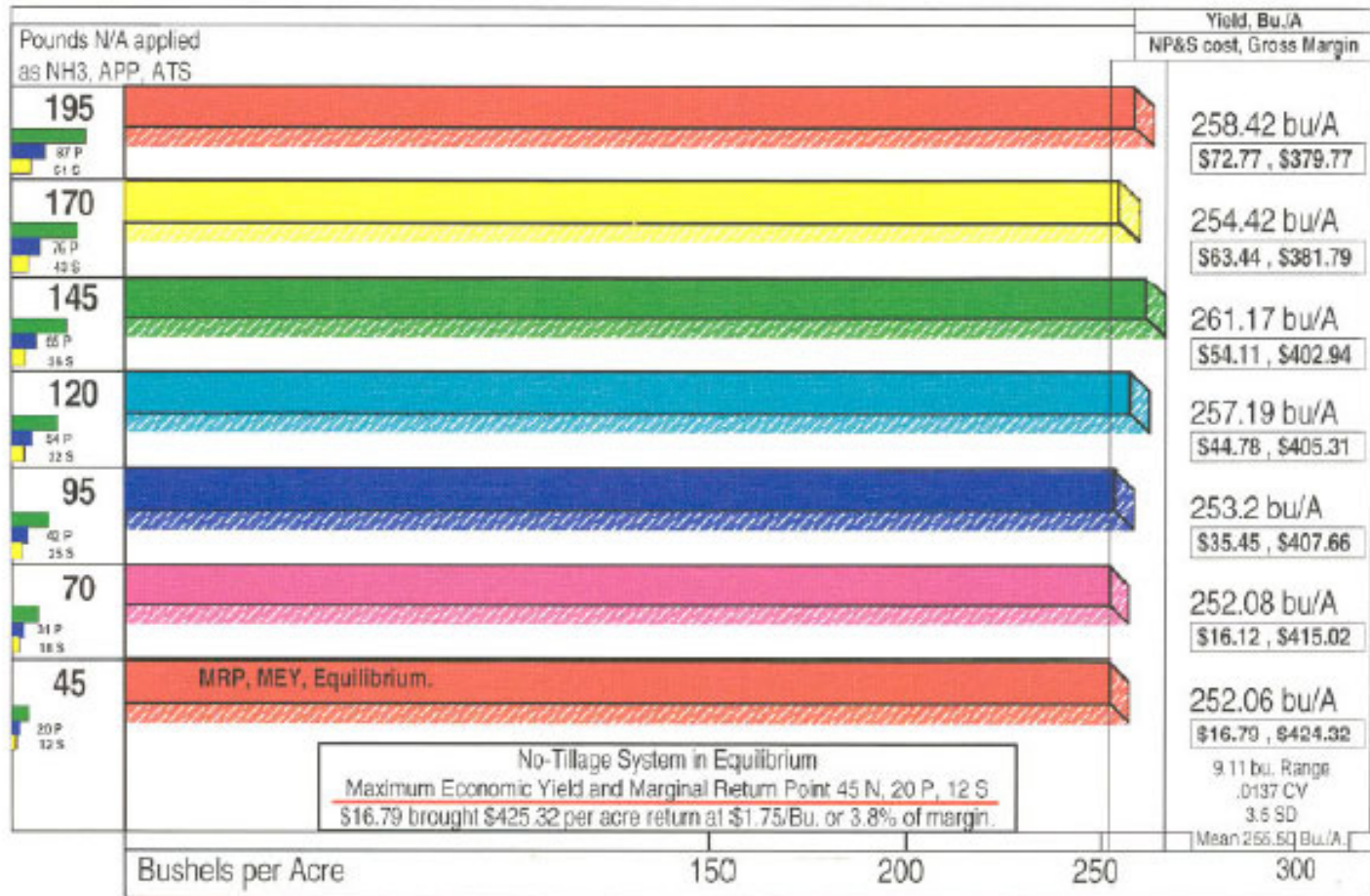
No difference in yield. 195 to 45 lbs. N/A.  
 Maximum Economic Yield: 45 lbs. N/A.  
 Point of diminishing return: 45 lbs. N/A.

Ridge Till, No-till nutrient placement.

1. Exactrix low CV, NH3 application.
2. Exactrix Delta P, Forming TAPPS.



Ray Bange, Colby, KS, Center Pivot, Ridge Till, Soybean Rotation, Spring Applied 30 days ahead of planting. Exactrix 2KFT, Single Disc Bourgault, 16" centers. Dual application of 10-34-0, APP and 12-0-0-26S, ATS was made with an Exactrix Delta P manifold forming TAPPS crystals in the no-till placed nutrient band. All applications were TAPPS dual applied maintaining an Ortho Ratio of 27-12-0-7S. Corn Soybean rotation on 30" centers. Soil lab recommendation for 200 bushel corn, 200 pounds N/A, 80 pounds P/A, 80 pounds of N expected from soybean credit and growing season mineralizations of N. S applied to stabilize the band and provide S for N and P efficiency. APP/ATS raised in Ortho Ratio to assure N performance. Seven years of continuous No-till/Ridge till in a 7.5 to 7.8 pH at a 1.5% to 2.5% OM in the top 8 inches. The Fall soil test shows increasing OM. Irrigated corn, Golden Harvest 9250, BT and Round-up Ready, 32,000 population. Growing season cool and wet with a warm September. Pounds N/Bu. at MEY, MRP, 179 lbs. N/Bu. Pounds N/Bu. supplied by OM 621 lbs./N/Bu. A total of 156 pounds of N/A, supplied by soybean legume and the Organic Matter soil life. Soil solution P also supplied by the soil life and OM at unexpected rates.



Notes: Fall soil sampling: Typical OM top 4 inches 2.8%, 4-8 inches, 2.3%. The fall soil sampling showed OM up at least .6% from spring samples of 1.9%. Field wide average across the Coop Scale was 255.45 bushels per acre. Third year testing will include tissue test and stalk nitrate test. Plots were randomized and replicated 3 times using a weigh wagon. Each plot .51388 acres. Corn Moisture adjusted to 15.5%.

2005, 3rd year.

No-Tillers, **Red Alert.**

**CORN**

Exactrix Test Data supplied by producer Ray Bange, Colby, KS. and Eric Moore, Agronomist.

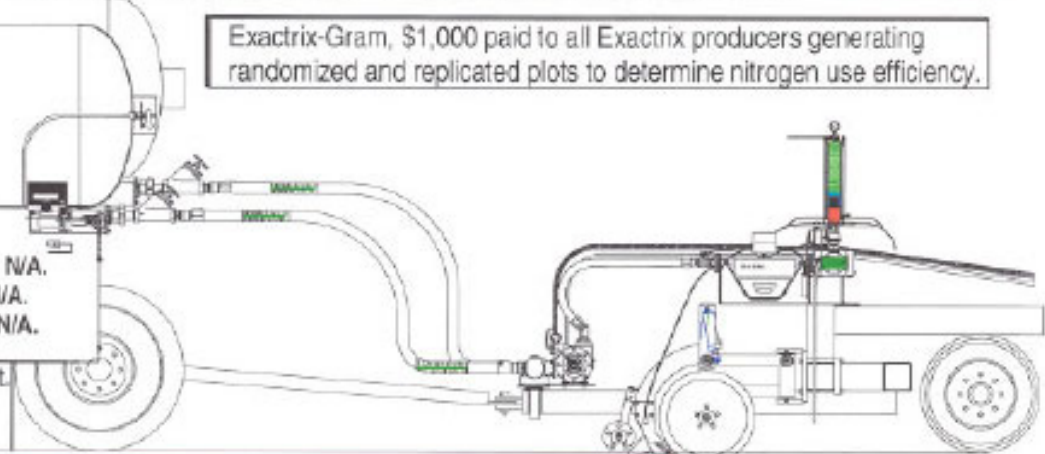
Exactrix-Gram, \$1,000 paid to all Exactrix producers generating randomized and replicated plots to determine nitrogen use efficiency.

November 2005.

No difference in yield. 195 to 90 lbs. N/A.  
Maximum Economic Yield: 45 lbs. N/A.  
Point of diminishing return: 45 lbs. N/A.

Ridge Till, No-till nutrient placement.

1. Exactrix low CV, NH<sub>3</sub> application.
2. Exactrix Delta P, Forming TAPPS.



Ray Bange, Colby, KS, Center Pivot, Ridge Till, Soybean Rotation, Spring Applied 30 days ahead of planting. Exactrix 2KFT, Single Disc Bourgault, 15" centers. Dual application of 10-34-0, APP and 12-0-0-26S, ATS was made with an Exactrix Delta P manifold forming TAPPS crystals in the no-till placed nutrient band.

All applications were TAPPS dual applied maintaining an Ortho Ratio of 27-12-0-7S. Corn Soybean rotation on 30' centers.

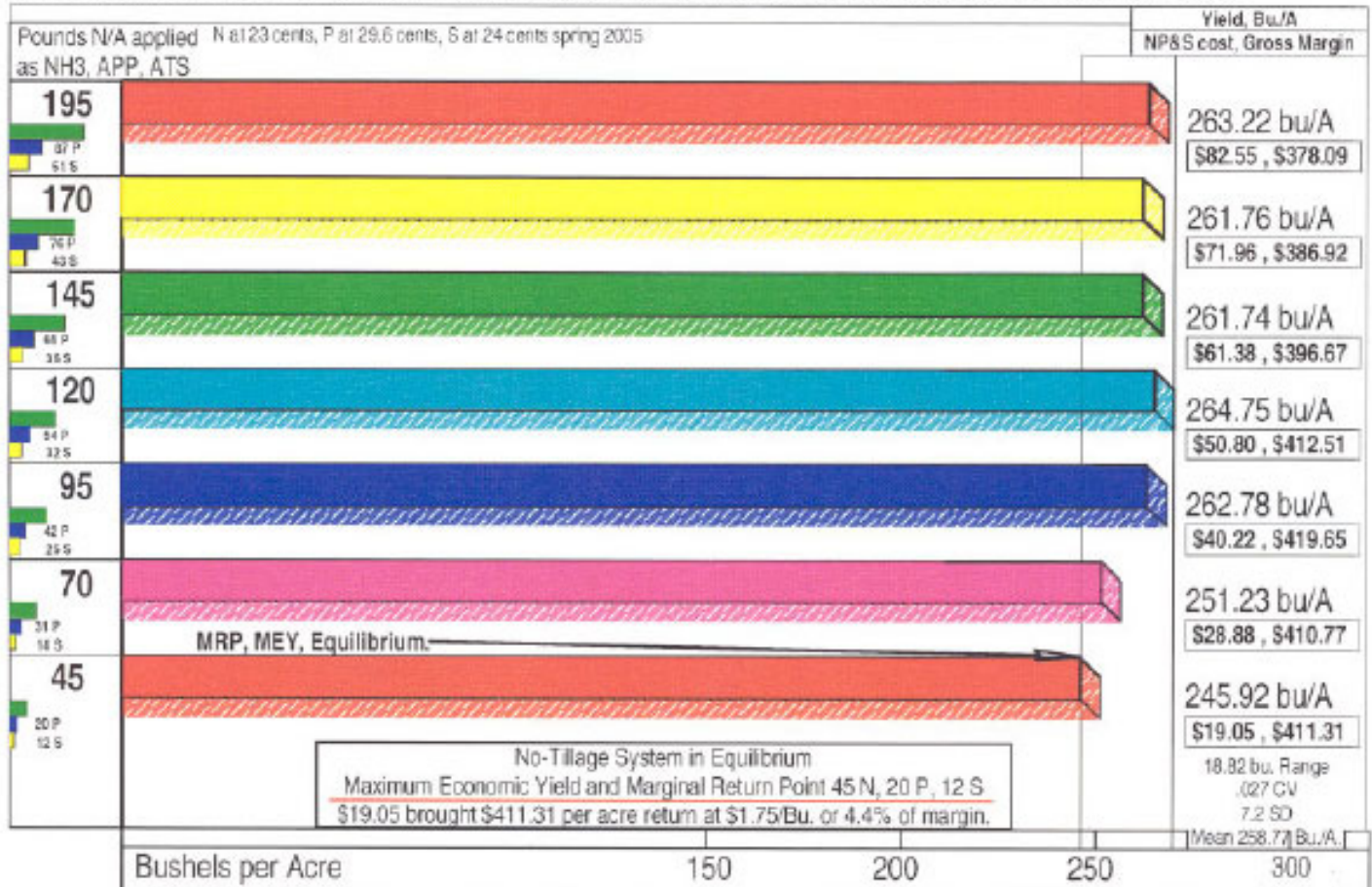
Soil lab recommendation for 200 bushel corn, 200 pounds N/A, 80 pounds P/A, 80 pounds of N expected from soybean credit and growing season mineralizations of N. S applied to stabilize the band and provide S for N and P efficiency. APP/ATS raised in Ortho Ratio to assure N performance.

Nine years of continuous No-till/Ridge till in a 7.5 to 7.8 pH at a 1.9% OM at planting to 2.5% OM fall test in the top 6 inches. The Fall soil test shows increasing OM.

Irrigated corn, Golden Harvest 9250, BT and Round-up Ready, 32,000 population, Weather considered abnormal with hot dry August winds.

Pounds N/Bu. at MEY, MRP, 183 lbs. N/Bu. Pounds N/Bu. supplied by OM .617 lbs. N/Bu.

A total of 152 pounds of N/A. supplied by soybean legume and the Organic Matter soil life. Soil solution P also supplied by the soil life and OM at unexpected rates.



Notes: Fall soil sampling: Typical OM top 4 inches 2.8%, 4-8 inches, 2.3%. The fall soil sampling showed OM up at least .8% from spring samples of 1.9%.

Third year testing will include tissue test and stalk nitrate test.

Plots were randomized and replicated 3 times using a weigh wagon. Each plot at .51388 acres. Corn Moisture adjusted to 15.5%.

Test: Ray Bange, Nov. 2005