2004 EXACTRIX TEST PLOT DATA

Bryce Naber, Greg Christo, Albion, Nebraska Irrigated No-Till Corn, 15” Band Spacing, Spring Pre-Plant

CORN

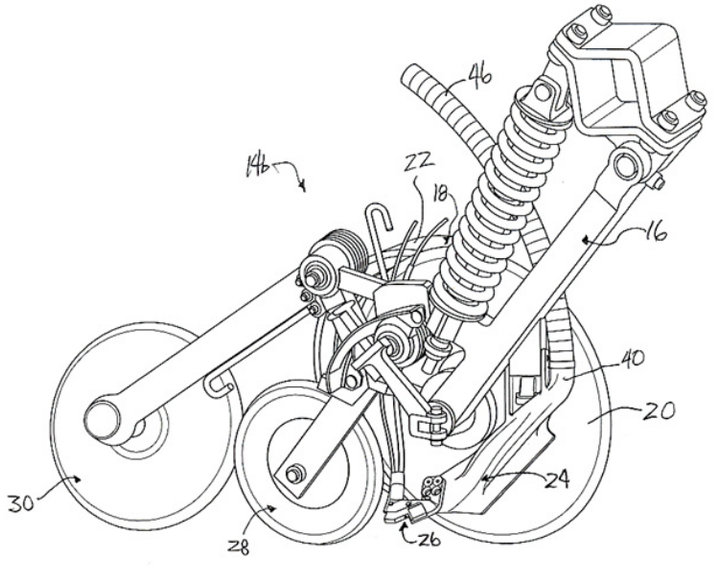
Test Plots Confirm. The soil test lab recommended rate vs. Exactrix rate results in $27,000 of additional revenue per 1,000 acres of corn. First Year Data, Three Year Program.

Bryce Naber, Producer, Albion, Nebraska, 402 843 8600, Greg Christo, Independent Agronomist handled the weigh wagons. We do not use yield monitors since they can vary 5%.

Randomized and replicated 3 times and averaged, Using Exactrix 2KD Weigh Master at 1% CV, and Exactrix 2KM at 1% CV for APP/ATS applied on 15" band spacing. Rainfall pattern was 1 in 50 years, Bryce had 3 rainstorms averaging 3" to 5", the pivots did not run during July, growing season conditions were cool and wet. Some dryland pivot corners produced as much corn as the pivots. Spring pre-plant applied single disc. N as NH3 at 25 cents, P as 10-34-0 at 30 cents and S as Thiosul at 20 cents. Corn on Soybean Rotation, 50 Lb./A. nitrogen credit. The Ortho Ratio was selected to feed the crop according to it’s needs....The Ortho Ratio was developed by Jim and Gordon Thorpe at Chevron Chemical. TAPPS was formulated to assure top nutrient efficiency. ATS was used to stabilize the band.

Nutrients	Yield	Nutrient Cost	Cost/Bu.	Gross Return	Gross Margin	Percent of Gross	Marginal Dollar Return
Rate Exactrix NPS	Bu./A.	$/A.	Cents/Bu.	$/A.@$1.75/Bu.	$NPS -Gross	$NPS/Gross Income	MRP App.1, MEY App. 2
App 1, 86N, 36P, 21S	170.7	36.50	21.47	298.72	262.22	12.21%	MRP, $10.50 not invested lost $20.30 Last $1 = $2
App 2, 108N, 48P, 28S	188.3	47.00	24.96	329.52	282.52	14.26%	MEY, $10.50 invested gained $20.32
App 3, 135N, 60P, 30S	191.5	57.75	30.15	335.25	277.38	17.27%	$10.75 invested lost $5.14
App 4, 162N, 72P, 42S	200	70.50	32.25	350.00	279.50	20.14%	$23.50 invested lost $3.02
App 5, 200N, 72P, 42S	202.2	80.00	39.56	354.37	274.35	22.57%	$33.00 invested lost $8.17
App 6, 162N, 0P, 0S	184	40.50	22.01	322.00	282.00	12.5%	$6.50 not invested lost $7.52 Not sustainable, P & S Required

The point of diminishing returns appears to cross over with the maximum economic yield between App 1 and App 2 rate of 108N, 48P,28S
Greg Christo feels that P and S will be reduced in the next set of plots, corn on corn at the same location next year.
It would appear that the best returns are between 13% and 14% of the gross income for nutrients at 2004 fall pricing.
The recommended soil testing lab rate App. 5 of 200 pounds N is $27,000 of lost income. So 1,000 acres of corn results in $27,000 lost net income...



If $10.50 savings from App 1 would have been invested in other inputs maybe a better return could be generated....opportunity costs...you can only borrow so much at the bank, always undersell fertilizer inputs since they are direct write off....it is like looking at empty Roundup cans when Roundup is $60 per gallon...Where did all the money go for the risks I took. Maybe a new tractor with a depreciation schedule would have been a better place to put $10.50 per acre every year for the next 7 years...at least you have something to sell when you are done. If you go for MEY the producer must consider opportunity costs and risk to make the investment.

Conclusions, Visions, Facts.

Corn Price going up.....Corn at $2.25, Nutrients the same cost.....$21,000 lost net income per 1,000 acres.
Nutrients going up.....Corn at $1.75, Nutrients up 25% by spring 2005 at MEY point or App 2.....$38,750 lost net income per 1,000 acres
If you own an Exactrix System.....you have leveraged Nitrogen. The placed N is 40% more crop available.
The Exactrix Terminal Injection Orifice is the key system element with controlled high pressure liquid release of NH3.
Corn must be $3.00 per bushel and nutrients the same to justify App 5.....200N
If corn prices continue downward and nutrients are going up pick App 1....86N
If corn prices remain the same and nutrients remain the same pick App 2.....108N
If corn prices remain same and nutrients are going up pick App 1....86N

If corn prices go up and nutrient prices also go up try to maintain a 12% to 14% nutrient margin to gross. Above 14% nutrient margin is risky with management issues.

Young Farmers (20 years or less)....If you have a high debt to asset ratio pick App 1....86 N, and take $10.50 per acre get a better tractor and always spring apply, planter apply or side dress.
Career Farmers.....If you have a low debt to asset ratio, if you are the banker, it is your money we are talking about,.... pick App 2.....108N

Fertilizer Dealers.....If you are the fertilizer dealer pick App 5...200N, and promote high yields and predict $3.00 corn by fall 2005.
Hybrid Seed Corn Dealers.....If you are seed corn dealer promoting seed corn in test plots use the Exactrix System and pick App 5....200N,.....economics don't count.

Soil Test Lab.....Timing of Nitrogen, Tillage System or history of no-tillage and Exactrix uniform single disc application should be taken into account before making a recommendation.
University Research Scientists.....You are right, timing of N, uniformity of N application, and No-tillage systems make all the difference and are the future of crop production.

If you do not own an Exactrix system, buy, rent and or have your fields custom applied.

Exactrix does apply 30% to 40% more crop useable N with a slight 5% to 10% yield increase as compared to pressure reducing NH3 system.

Exactrix does apply 30% to 40% more crop useable N and 40% more crop useable P and S when TAPPS is formulated...yield increases are normally in the 20% range with varying OM and varying pH. Data included indicates about 16 more bushel or about 9% more yield in this particular plot. The producer must supply P and S in someway due to the export of the crop. Dual placement makes the most sense with high fertilizer prices. S is no longer available from the atmosphere since the coal fired power plants no longer supply S to the crop.

Exactrix Fall applied No-till fields at Albion were not as effective as Exactrix spring applied fields. Uniformity and Timing is very important.

Exactrix releases one years worth of information....3 years of data is required....Irrigation offers better test results....This is the second year of data gathering.....other Exactrix test sites around the Corn Belt are reporting similar results. More data to come on Dec. 7 in Aurora, NE and Dec. 9. Garden City, KS. Exactrix does pay $1,000 to producers to develop their own test plot data.