Fertilizer Program Comparison in Irrigated Strip-Till Corn. Irrigation Research Foundation. Yuma, CO

Experiment Info:	
Planted:	05/15/15
Harvest:	10/31/15
Yield Goal:	250 bu/A
Target Fert.:	190-40-10
Variety:	G07B39-311A
Population:	34,000
Row Width:	30"
Prev. Crop:	soybeans
Plot Size:	4 row x 300'
Replications:	strips

Soil Test Values (ppm):	
pH:	6.7
CEC:	6.3
%OM:	0.7
Bray P1:	
Bicarb P:	20.3
K:	269
S:	5.3
%K:	11
%Mg:	25
%Ca:	60
%H:	(4% Na)
Zn:	1.5
Mn:	6.3
B:	--

Objective:

Compare different fertilizer programs and nutrient placement in irrigated strip till corn.

The Irrigation Research Foundation is a non-profit rersearch farm set up for the purpose of research under intensive crop management in Northeastern Colorado. Yield potential is very high, but one thing that confounds crop production in this area is the likelihood of summer hail, which occurred this year in late August. None the less, yields were collected for program evaluation. The intent was to compare standard fertilizer programs to that of AgroLiquid for corn, as well as evaluation of program comparisons through strip till (Orthman 1tRIPr) and planter application. Additionally, the AgroLiquid program was tested as nitrogen through the strip till and the balance applied in furrow through the planter vs all of the fertilizer through the strip till. Another treatment tested the complete AgroLiquid program through the strip till, with a "starter" (low) rate through the planter in addition. Again, the hail reduced yields by some 100+ bu/A, but some trends can be seen in this report.

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	Strip Till	Planter	Yield -Bu/A
1	Standard IRF	Standard IRF	153.1
2	Standard IRF	AgroLiquid Planter	159.7
3	15 gal High NRG-N	AgroLiquid Planter	161.2
4	15 gal High NRG-N	Standard IRF	147.4
5	Full AgroLiquid	No planter fertilizer	156.6
6	Full AgroLiquid	Starter AgroLiquid	160.4

Strip Till fertilizers

Standard IRF:
17-8-1-4.8S
10 gal/A at 4" and
13 gal/A at 10"

Full AgroLiquid
15 gal/A High NRG-N +
5 gal/A Pro-Germ. +
2 qt/A Micro 500 +
2 qt/A accesS

21 total gal/A:
10 gal/A at 4" and
11 gal/A at 10"

Planter fertilizers

Standard IRF:
15.7-8.9-2.6-2.6S-0.1Zn
18 gal/A 2x2

AgroLiquid Planter:
5 gal/A Pro-Germ. +
2 qt/A Micro 500 +
2 qt/A eNhance In-Furrow

Starter AgroLiquid:
2 gal/A Pro-Germ. +
1 qt/A Micro 500 +
1 qt/A eNhance In-Furrow

Applied to all plots: 40 gal/A 28-0-0-5 in 6 apps, 5/15 thru 7/28.
10.46" irrigation plus 14.44" rainfall during season.
Hail storm on 8/20 caused severe leaf stripping and reduced yield potential. But hopefully yields reflect relative performance.

Standard IRF Strip Till fertililzer:
blend of water, potash, 10-34-0, ammonium thio-sulfate, 32% UAN
Standard IRF planter fertilizer:
blend of water, 32% UAN, zinc, KTS, ATS, 10-34-0
(fertilizers prepared by local dealer)

Conclusions:

- Highest yield was with High NRG-N with strip tillage and AgroLiquid planter program applied in-furrow (trt 3). This enabled reduced gallons per acre applied compared to the standard programs.
- Having all of the fertilizer applied with strip tillage (trt 5) was not as effective as having the P, K and micros applied with the planter (trt 3). Even having a "starter" application applied in-furrow (trt 6) had a yield increase.
- The AgroLiquid in-furrow planter treatment with the Standard IRF strip-till (trt 2) yielded higher than the Standard IRF planter and Standard IRF strip-till (trt 1). Similarly, with the 15 gal High NRG-N strip-tillage, the AgroLiquid Planter (trt 3) far out-yielded the Standard IRF planter (trt 4). Thus, use of AgroLiquid improved yield where part of the treatment was of the Standard, but best yield was obtained when both components