2015 KARTA PRESENTATION

January 22-23, 2015
Salina, KS

Rodney Doane

An Evaluation of the Haney Soil Test Method

Haney soil test explained

- Haney claims a traditional soil test does not account for nutrients that can be mineralized by soil biology.
- Haney claims he has developed a test that does through a carbon burst respiration measurement and other soil health indicators.
- If true reductions of inputs especially nitrogen can be realized without decreasing OM or P & K soil test levels while maintaining normal yields then net revenues could be increased.
- In fall of 2013 soil samples were taken and sent to Haney.
- In spring of 2014 soil sample were taken again and sent to Haney.

Fall 2013 Sample

Sample ID all lbs per acre	N lbs per acre	P205 lbs per acre	K20 lbs per acre	Nutrient value per acre	Crop / Yield Goal	NO3-N Only (traditional testing) lbs per acre
Heartland Soil Doane Stub 35-5-15	64.43	19.49	218.81	$131.43		48.82
Heartland Soil Doane CC 35-5-15	36.90	20.02	259.85	$134.40		9.61
Heartland Soil Doane Stob 11-6-14	67.03	57.92	289.92	$184.24		42.78
Heartland Soil Doane CC 11-6-14	33.84	37.25	241.21	$135.76		4.70

Spring 2014 Sample

SAMPLE ID all lbs per acre	N lbs per acre	P205 lbs per acre	K20 lbs per acre	Nutrient value per acre	Crop	Yield Goal	NO3-N Only (traditional testing) lbs per acre
Rodney Doane CC 11-6-14	74.70	25.57	252.57	$161.39			49.66
Rodney Doane Stub 11-6-14	49.81	17.72	241.21	$137.33			40.69
Rodney Doane CC 35-5-15	57.34	16.82	230.89	$136.16			39.14
Rodney Doane Stub 35-5-15	76.10	18.99	266.80	$161.86			51.74

Run of Haney's test on Milo

SAMPLE ID all lbs per acre	N lbs per acre	P205 lbs per acre	K20 lbs per acre	Nutrient value per acre	Crop	Yield Goal	lbs N needed	lbs P205 needed	lbs K20 needed	NO3-N Only (traditional testing) lbs per acre	Additional N (SHT) lbs per acre	$ nitrogen saved per acre
Rodney Doane CC 11-6-14	74.70	25.57	252.57	$161.39	sorghum	120	21.3	34.4	0.0	49.66	25.04	$12.52
Rodney Doane Stub 11-6-14	49.81	17.72	241.21	$137.33	sorghum	120	46.2	42.3	0.0	40.69	9.12	$4.56
Rodney Doane CC 35-5-15	57.34	16.82	230.89	$136.16	sorghum	120	38.7	43.2	0.0	39.14	18.20	$9.10
Rodney Doane Stub 35-5-15	76.10	18.99	266.80	$161.86	sorghum	120	19.9	41.0	0.0	51.74	24.36	12.18

Soil Health all ppm	Solvita CO2-C	1-day C	Organic N	Organic C:N	Soil Health Calculation	Cover crop mix	Total Nitrogen lbs\acre	Inorganic N	Organic N	Total Phosphate lbs/acre	Inorganic P	Organic P
	44.83	200.73	18.34	10.95	7.94	60% Legume 40% Grass	89.20	52.52	36.68	32.58	17.90	14.68
	12.83	161.44	15.62	10.34	4.42	80% Legume 20% Grass	72.56	41.32	31.24	31.90	15.37	16.53
	28.08	240.24	23.09	10.41	7.41	70% Legume 30% Grass	87.08	40.90	46.18	26.09	11.71	14.38
	40.70	201.28	19.44	10.35	7.89	60% Legume 40% Grass	91.83	52.94	38.88	27.39	11.55	15.85

Layout of Plot

- 30 lbs of N for Haney test strips as 46-0-0
- 90 lbs of N for Standard test strips as 46-0-0
- P wasn't considered in test strips but
- All test strips received 60 lbs. mat. of MESZ(12-40-10-1)
- Pioneer 85G03 was planted on June 16th on 20 in. spacing using JD 1890/1910 air seeder
- Harvested on Nov. 4th using JD 9600 and 9750 both with GS1 yield monitors

Soil moisture before planting

Pictures of plot late July

Pictures from Labor Day

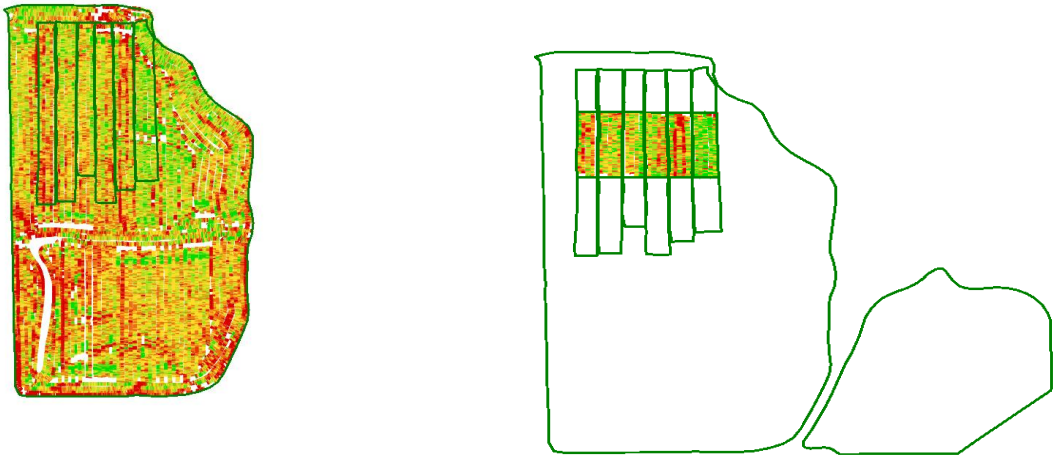
Pictures from Labor Day


Pictures from Labor Day

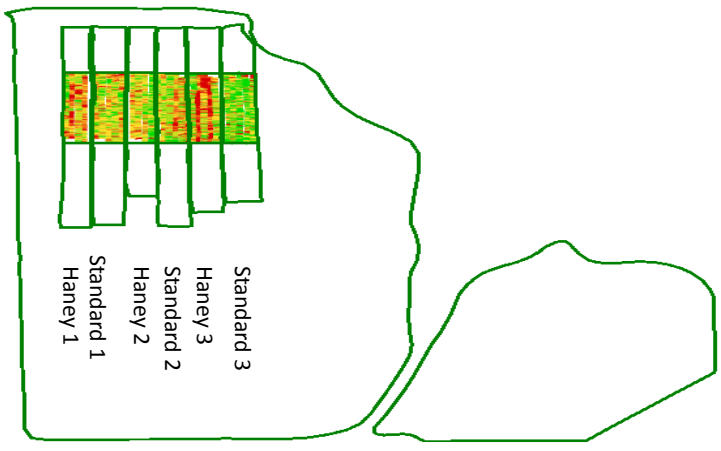
Standard 90 lbs N rate

Haney 30 lbs N rate

Yield Map and Plot brought into SST



Plot Layout



Avg. yield per Plot

- Haney 1 = 114.14
- Standard 1 = 120.28
- Haney 2 = 122.86
- Standard 2 = 116.44
- Haney 3 = 110.41
- Standard 3 = 130.00

Simple Avg. per test

- Haney test strips = 115.80
- Standard test strips = 122.24

Conclusions

- Haney test strips didn't reach goal of 120 bu/ac
- Standard test strips reached goal of 120 bu/ac @ 1.2 lbs N/bu
- Net income of Haney vs. Standard was nearly equal for N @ $0.55/lb.
- High STP appears to be important in Haney test
- Test definitely worth continuing for 2015
- Has potential to greatly impact cash flows and how N is applied

Thanks to:

- KARTA for grant, e-mail reminders, and tech support
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