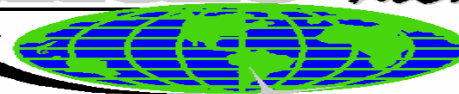


AGRIMENT SERVICES Inc.

Animal Waste Management Systems



Corn Silage

Field Study Data Sheet: CRNCA04GA

Location: Bakersfield, California (Kern Co.)

Area Treated:

Product Used: ASI Phosphate Reduction@ 2 gallons / acre

Timing of Application: Preplant and incorporated

Sewage sludge applied @ 60 tons per acre to all treatments

Date: June – Nov 2004

Non-Treated Area:

Applied By: Broadcast

ASI Contact: Geno Kennedy

Soil analysis: Preplant soil samples taken 6/3/04

Treatment	pH 1:1 paste	Cond. mS/cm	CEC me/100g	Organic matter %	N ppm	P ppm	Ca ppm	Mg ppm	K ppm	Na ppm	S ppm
ASI Phosphate Reduction	7.5	0.88	27.08	1.76	28	462	4032	345	233	550	236
Control	7.7	0.50	28.10	1.72	27	477	4184	318	208	679	140

Treatment	% Base Saturation					Trace Elements (ppm)					
	Ca	Mg	K	Na	Other	B	Fe	Mn	Cu	Zn	Al
ASI Phosphate Reduction	74.45	10.62	2.21	8.83	3.90	1.31	152	42	18.78	22.96	677
Control	74.45	9.43	1.90	10.51	3.70	1.43	162	45	19.65	23.18	654

Soil analysis: Post harvest soil samples taken 11/10/04

Treatment	pH 1:1 paste	Cond. mS/cm	CEC me/100g	Organic matter %	N ppm	P ppm	Ca ppm	Mg ppm	K ppm	Na ppm	S ppm
ASI Phosphate Reduction	7.6	0.80	24.54	2.12	31	338	3614	291	240	574	152
Control	6.8	1.33	29.68	2.90	39	436	4188	391	255	591	264

Treatment	% Base Saturation					Trace Elements (ppm)					
	Ca	Mg	K	Na	Other	B	Fe	Mn	Cu	Zn	Al
ASI Phosphate Reduction	73.63	9.88	2.51	10.17	3.80	1.21	158	42	16.87	18.57	876
Control	70.55	10.98	2.20	8.66	4.60	1.40	156	45	16.19	19.18	635

Feed analysis:

Treatment	% as received		Dry weight basis									
	Moisture content %	Dry matter %	Crude protein %	Digest protein %	Fiber %	TDN %	ENE Mcal /100lb	NE grain Mcal /lb	NE lact Mcal /lb	Digest energy Mcal /lb	NDF %	ADF %
ASI Phosphate Reduction #1	67.86	32.14	10.34	7.34	24.81	68.68	54.73	0.42	0.71	1.37	49.40	31.01
ASI Phosphate Reduction #2	61.10	38.90	12.03	8.54	26.25	67.51	52.90	0.41	0.70	1.35	53.00	32.81
Control Plot A	74.84	25.16	10.63	7.55	26.16	67.58	53.01	0.41	0.70	1.35	48.58	32.70
Control Plot B	70.96	29.04	9.47	6.73	24.31	69.09	55.36	0.43	0.71	1.38	48.20	30.39

Feed Analysis:

Treatment	Dry weight basis										
	N %	P %	K %	Ca %	Mg %	Na %	S %	Fe ppm	Mn ppm	Cu ppm	Zn ppm
ASI Phosphate Reduction #1	1.66	0.288	1.584	0.350	0.202	0.006	nd	424.2	32.2	4.6	33.3
ASI Phosphate Reduction #2	1.93	0.288	1.883	0.477	0.251	0.012	nd	645.7	41.6	7.6	45.8
Control Plot A	1.70	0.273	1.622	0.361	0.265	0.005	nd	384.8	25.5	5.5	32.1
Control Plot B	1.52	0.259	1.318	0.335	0.207	0.006	nd	355.8	24.3	5.0	27.2

Interpreting silage analysis:

Silage moisture should be between 60 – 70%.

Crude protein includes true protein and non-protein but no information about digestibility.

ADF is acid detergent fiber consists primarily of cellulose, lignin and acid detergent fiber crude protein.

Lower ADF values indicate better digestibility.

NDF is neutral detergent fiber contains cellulose, hemicellulose and lignin. Lower NDF means higher feed intake.

TDN is total digestible nutrients which represents the sum of digestible crude protein, digestible carbohydrates and digestible fat.

ENE is the estimated net energy for weight gain and milk production.

NE lactation is the net energy requirements for lactating cows.

NE grain is net energy value for increasing body tissue, growth or weight gain.

Silage yield and nutrients extracted from soil and biosolids:

Treatment	Fresh Yield lbs/acre	Dry Yield lbs/acre	Total pounds per acre of nutrients removed at harvest in the dry corn silage										Income \$30/ton/ac adjusted
			N	P	K	Ca	Mg	Na	Fe	Mn	Cu	Zn	
ASI Phosphate Red # 1	33480	10760	178.6	31.0	170.4	37.7	21.7	0.65	4.56	0.35	0.05	0.36	\$503.24
ASI Phosphate Reduction #2	34160	13288	256.5	38.3	250.2	63.4	33.4	1.59	8.58	0.55	0.10	0.60	\$570.26
Control Plot A	38700	9737	165.5	26.6	157.9	35.2	25.8	0.49	3.75	0.25	0.05	0.31	\$527.45
Control Plot B	37680	10942	166.3	28.3	144.2	36.7	22.7	0.66	3.89	0.27	0.05	0.30	\$541.62

Comments:

- Reduced moisture content of the silage in the ASI Phosphate Reduction treatment
- Increased nutrient removal by the crop with ASI Phosphate Reduction in N, P, K, Ca, Fe, Mn
- When adjusted for moisture content, ASI Phosphate Reduction averaged higher in income per acre