



All Variable Rate Planter

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Historical Background of CO₂

Life on earth evolved in times when CO₂ levels were about 400% higher than at present. The current level of 386 ppm is not far above the 200 ppm level at which plants stop growing because of carbon dioxide starvation. Nurserymen know this and use gas burners to increase the CO₂ level in their greenhouses and plant nurseries to 1,000 ppm or more. If the atmosphere reached this level there would be massive improvement in plant growth, with benefits for the whole environment. There is no danger to humans at this level - the CO₂ levels in submarines may reach 8,000 ppm without problems for humans, and our exhaled breath has about 40,000 ppm of CO₂.





Why This Is Important

There is concern among fertilizer producers and dealers the new rules the EPA has imposed on farmers in Florida will set a precedent for nationwide nutrient management regulations. The EPA decided this week to set numerical criteria for nitrogen and phosphate in soil based on nutrient levels in ground waters. This is the first time the EPA has tried to override a state nutrient management program.

The Brock Report - Nov. 19, 2010

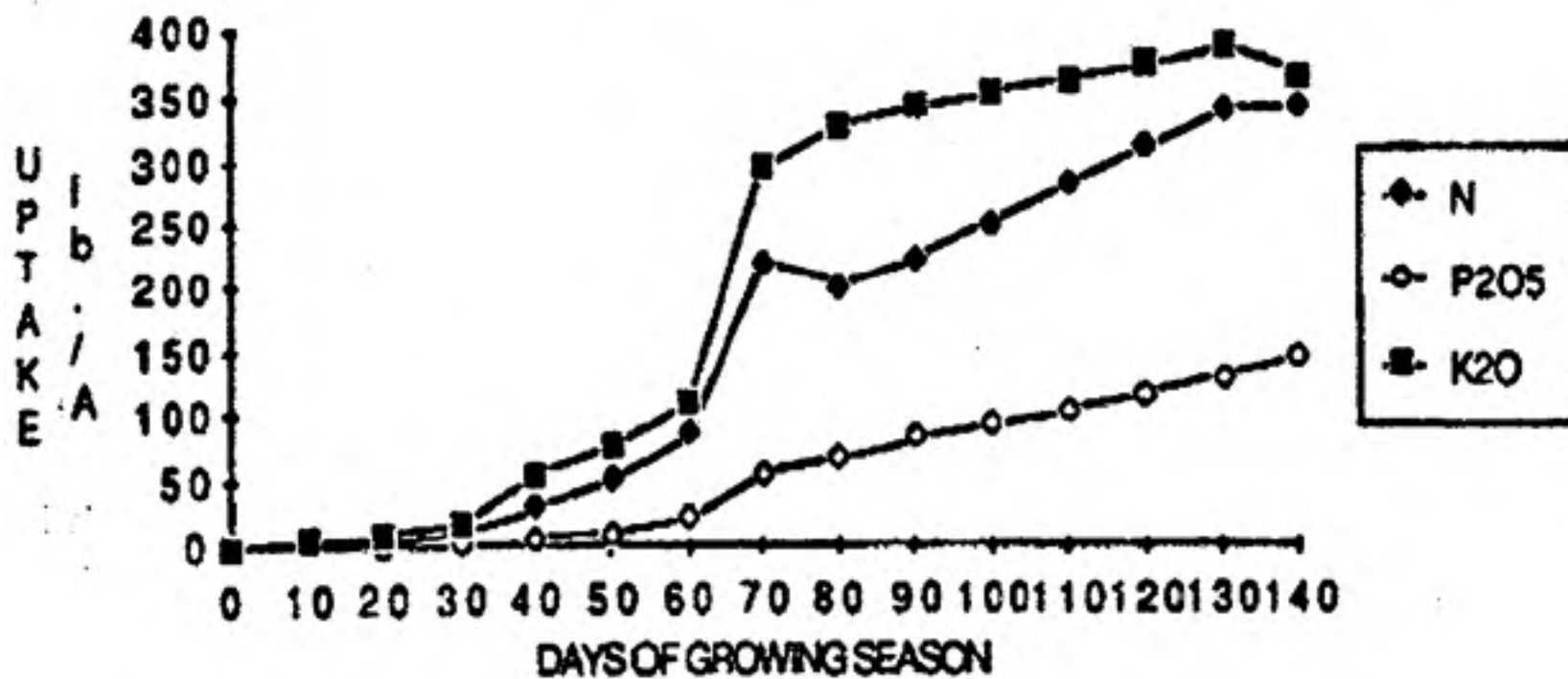


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Yield = 308 bu/A





Solution

Table 1. Average effects of tillage, fertilizer placement method, and annual phosphorus and potassium rates on corn and soybean grain yields during 2004 and 2005.

Tillage	Phosphorus treatments (lb P ₂ O ₅ /acre)						Potassium treatments (lb K ₂ O/acre)					
	Check	Broadcast			Planter band		Check	Broadcast			Planter band	
		28	56	112	28	56		35	70	140	35	70
----- Soybean grain yield (bu/acre) -----												
Chisel	60.3	62.7	60.6	65.4	61.9	62	55.7	55.8	57.6	55.4	56.5	56.3
No-till	58.5	64.1	64.2	63.7	61.3	62.6	62.9	61.2	61.8	63	62.5	61.9
----- Corn grain yield (bu/acre) -----												
Chisel	211	222	218	226	225	226	211	210	212	208	218	215
No-till	204	216	218	221	221	220	206	217	207	210	218	214



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Crop Advances. Field Crop Reports

Table 3. Impact of placement and timing of P and K fertilizer on grain corn yields for 3 tillage systems on a silt loam soil following soybeans. Average of three experiments. Aneaster, 2001-2003.

Tillage	Fertilizer Strategy	Yield
Fall Strip	Fall - P and K; Planter - N only	120
	Fall - none; Planter - N,P,K	120
Fall Plow	Fall - P and K; Planter - N only	126
	Fall - none; Planter - N,P,K	133
No till	Fall - P and K; Planter - N only	109
	Fall - none; Planter - N,P,K	117
LSD (.10)		7.1

Table 4. Impact of placement and timing of P and K fertilizer on grain corn yields for 3 tillage systems on a silt loam soil following soybeans. Average of two experiments. Alma A, 2001-2002.

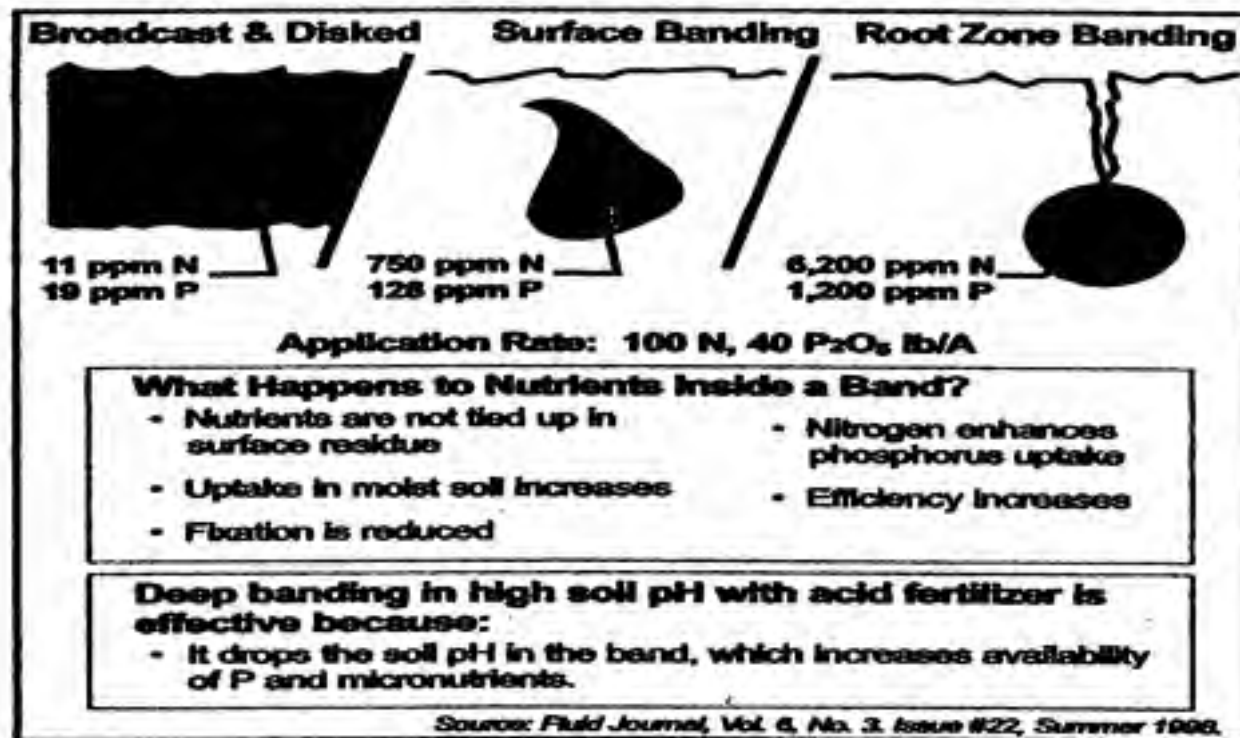
Tillage	Yield	Fall Fertilizer		Planter Fertilizer			
		Treatment	Yield	Treatment	Yield		
Fall Strip	143	None	138	N only	133		
		P and K	147	N,P,K	142		
Fall Plow	145	None	146	N only	143		
				N,P,K	150		
		P and K	143	N only	144		
				N,P,K	147		
No-till	141	None	142	N only	140		
				N,P,K	145		
		P and K	141	N only	146		
				N,P,K	147		
LSD (.10)							6.5
Averages	147	None	147	N only	138		
		P and K	144	N,P,K	145		
LSD (.10)							3.8





Solution

Plant Nutrient Placement Effects Availability and Efficiency



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Dad's No-Till Planter 1969



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Today's Planter



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Spike Wheels for Nitrogen



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Nitrogen Control



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Piston Pump



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Row Fertilizer Control



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Row Control



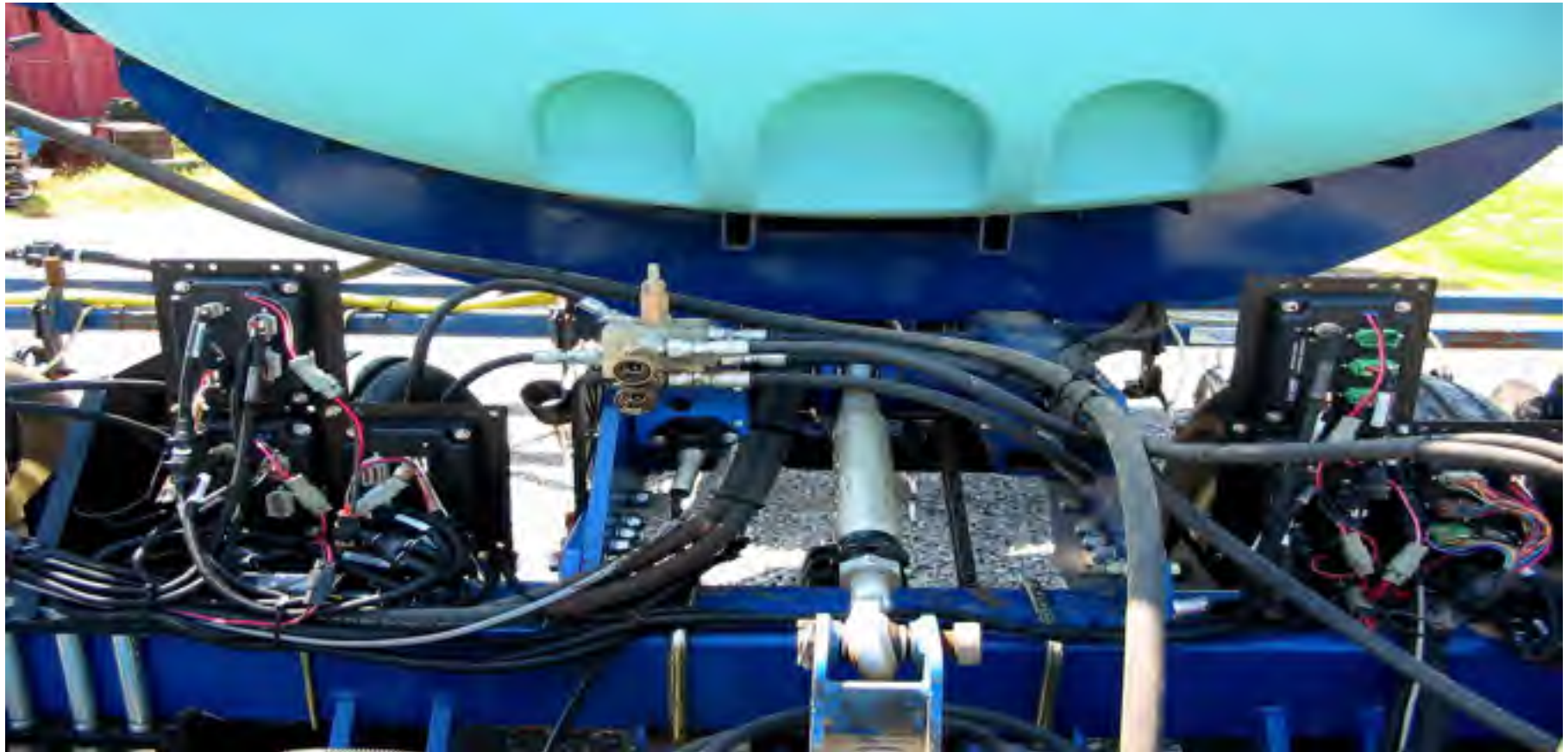
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Control Modules



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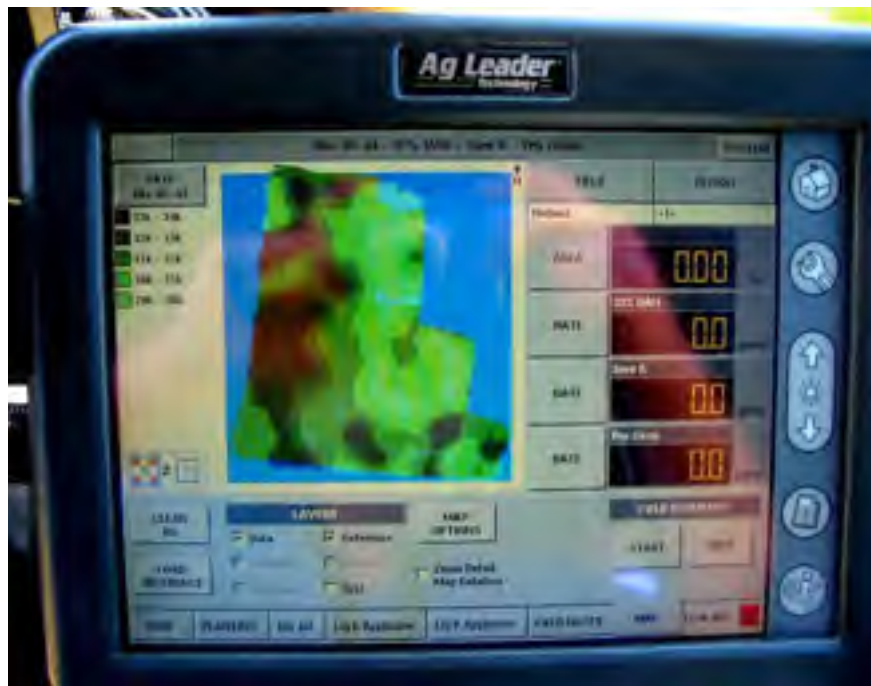


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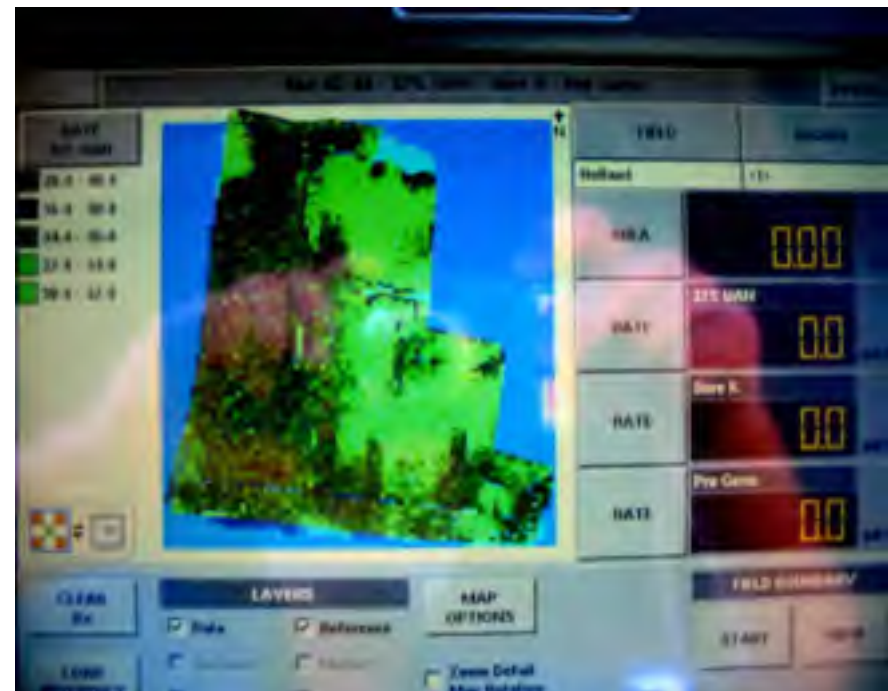


Variable Maps

Corn Pop



Nit Rate



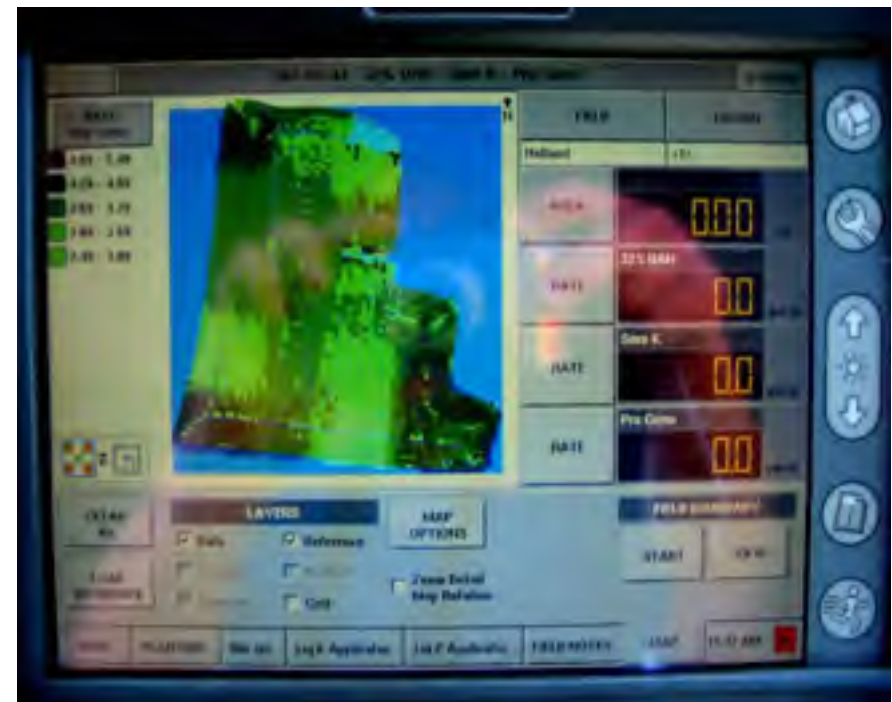
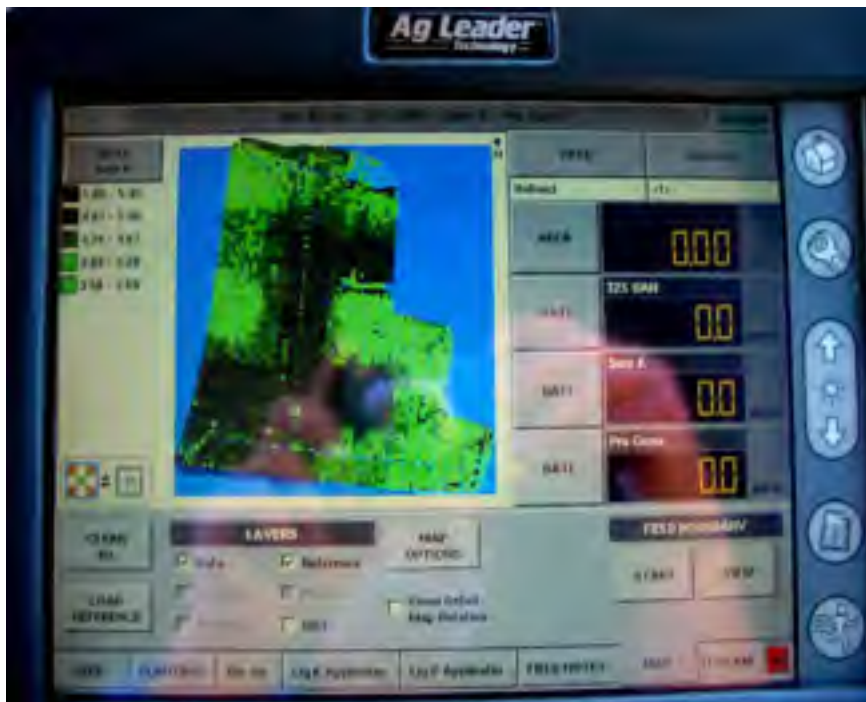
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Variable Maps

K Rate

P Rate



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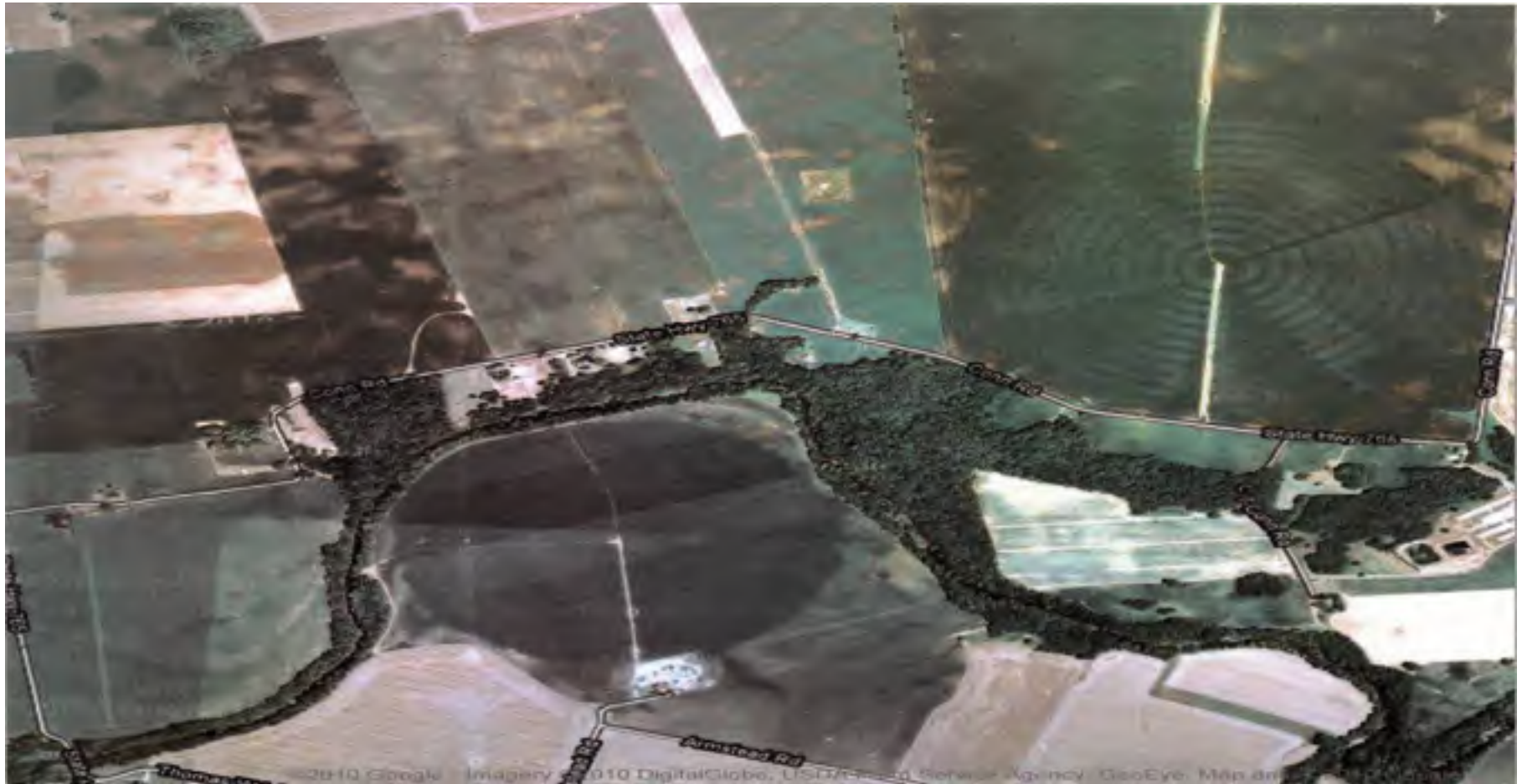
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Pivot Pattern Differences



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Suppliers List

Equipment for variable rate liquids - <http://www.surefireag.com/>

Fertilizer tubes for planter - <http://www.totally-tubular.net/index.htm>

Fertilizer pinch valves - <http://www.richwayind.com/fertcontrol/fertcontrols.pdf>

Agro Culture Liquid Fertilizer - <http://www.agroliquid.com>

No-till attachments on planter - <http://www.martinandcompany.com>

Planter controller and monitor - <http://www.agleader.com>

Spike wheel fertilizer application equipment - <http://www.spikewheel.com/products.htm>

T&L Irrigation dealer, Russellville, KY. – yield & design maps - <http://www.randkpivots.com/home>



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Thank You

