

**Influence of Ammonium Sulfate and Ammonium Sulfate Nitrate in a Rotation of Potatoes, Winter Wheat
Double Cropped Soybeans, Notill & Stripill Corn and Single Crop Soybeans**
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Summary of Study

Location of Study: University of Maryland Lower Eastern Shore Research & Education Center, Salisbury
Facility, near Salisbury, Maryland

Soil Type: Galestown Loamy Sand

Previous Crop: Single Crop Notill Soybeans

Potato Variety Used: Kennebec, B size potato stock was used for planting.

Spacing: 11"

Plot Size: 3 – 36" rows by 25 feet long.

Harvest Area: Center row of each plot by 15' long.

Replications: 4, in a randomized complete block design

Tillage: Chisel Plow/Disk

Soil Test, Fall 2009: Composite Sample of the experimental area.

P-314(VH), K-81(M), pH-6.0, OM-0.8% VL(ENR in lbs/a = 61), CEC-3.5, Zn-5.5(H), SO₄S-9(VL)

Potato Treatments and Yields for 2010

Notill and Stripill Corn(Year 1), Single Crop Notill Soybeans(Year 2), Potatoes(Year 3)

Treatments:

	Fertilizer Materials Applied in Pounds/acre – Preplant and Sidedressing		Effect of corn Tillage on Potato Yields	Potato Yields Reported in lbs/Acre				
	Pre Plant	Sidedress before Hilling		Rep 1	Rep 2	Rep 3	Rep 4	Ave.
1.	200 lbs/a Calcium Nitrate(15-0-0-19) 217 lbs/a of Triple Super Phosphate 0-46-0 150 lbs/a of Muriate of Potash 0-0-60	160 lbs/a Calcium Nitrate(15-0-0-19) 50 lbs/a of Muriate of Potash(0-0-60)	NT Corn ST Corn	19,166 17,424	20,328 15,585	19,940 17,980	26,426 16,359	21,465 16,837
2.	200 lbs/a Calcium Nitrate(15-0-0-19) 217 lbs/a of Triple Super Phosphate (0-46-0) 150 lbs/a of Murate of Potash (0-0-60) 148 lbs/a of Urea(46-0-0)	160 lbs/a Calcium Nitrate(15-0-0-19) 50 lbs/a of Murate of Potash(0-0-60) 126 lbs/a of Urea(46-0-0)	NT Corn ST Corn	26,523 29,427	22,845 23,716	24,292 24,878	21,393 21974	23,763 24,999
3.	200 lbs/a Calcium Nitrate(15-0-0-19) 217 lbs/a of Triple Super Phosphate (0-46-0) 150 lbs/a of Murate of Potash (0-0-60) 154 lbs/a of Ammonium Sulfate(21-0-0-24) 78 lbs/a of Urea	160 lbs/a Calcium Nitrate(15-0-0-19) 50 lbs/a of Murate of Potash (0-0-60) 66 lbs/a of Urea(46-0-0) 131 lbs/a of Ammonium Sulfate(21-0-0-24)	NT Corn ST Corn	32,412 25,612	29,524 25,515	28072 24,297	28,088 28,540	29,524 25,991
4.	200 lbs/a Calcium Nitrate(15-0-0-19) 217 lbs/a of Triple Super Phosphate(0-46-0) 150 lbs/a of Murate of Potash(0-0-60) 153 lbs/a of Ammonium Sulfate(21-0-0-24) 106 lbs/a of Ammonium Nitrate(The AMS & AN equal 262 lbs/a of ASN(26-0-0-14)	160 lbs/a Calcium Nitrate(15-0-0-19) 50 lbs/a of Murate of Potash (0-0-60) 131 lbs/a of Ammonium Sulfate(21-0-0-24) 91 lbs/a of Ammonium Nitrate(34-0-0) (The AMS & AN above equals 225 lbs/a of ASN)	NT Corn ST Corn	28,556 25,652	28,169 23,426	29,895 26,426	28,088 26,233	28,677 25,434

Conclusions:

1. On average no till corn in the rotation increased potato yields by 2,542 lbs/a above strip till corn.
2. On average treatments 3 and 4 with ammonium sulfate increased potato yields by 3026 lbs/acre over treatment 2 with urea as the primary nitrogen source. There was no ammonium sulfate in treatment 2.
3. Treatments 3 and 4 on average yielded about the same, 27,758 and 27,056 respectively with treatment yielding slightly better than treatment 4 by 702 lbs/acre. The primary nitrogen source in treatment 3 was a blended of Urea and ammonium sulfate. The primary nitrogen source in treatment 4 was a blend of ammonium nitrate and ammonium sulfate. The blend of ammonium nitrate and ammonium sulfate was in a ratio to equal ammonium sulfate nitrate(26-0-0-14).