

AgroLiquid Pro-Germinator Trial

Company: Basin Fertilizer & Chemical Co.
Acres: 44
Crop: Russet Norkotah Potatoes
Season: 2015

Objective:

To compare AgroLiquid Pro-Germinator against conventional 10-34-0 applied in-season based on tissue samples through solid-set irrigation

Methods:

Prior to planting, a dry fertilizer blend was spread evenly across the full 44 acres. The grower planted Russet Norkotah's north-south in a 44 acre field with his conventional planter fertilizer mix. Prior to the first tissues being pulled, a fertigation was made with 5 gal of 10-34-0 per acre applied to both halves. Once weekly tissue sampling began, fertigation recommendations were made and applied based on tissue results. One fertigation saw the West ½ receive an additional 1 gal of 12-0-0-26 (Thiosul), which increased the total cost for the West ½ treatment. The East ½ of the field (22 acres) was fertigated with 10-34-0, while the West ½ (22 acres) received Pro-Germinator. This was the *only* difference in management for the season.

Pro-Germinator treatment:

- 7.5 gal/Ac @ \$70.88/Ac
 - 86.25 lbs of Phosphorus based on efficiency (20 lbs actual Phosphorus)

10-34-0 treatment:

- 17.05 gal/Ac @ \$68.20/Ac
 - 68 lbs of actual Phosphorus

Negating the efficiency value of Pro-Germinator, the Pro-Germinator treatment received 48 lbs less Phosphorus than the 10-34-0 treatment

Summary:

Total Fertigation Cost per Acre:

<u>Pro-Germinator:</u>	<u>\$291.39</u>
<u>10-34-0:</u>	<u>\$286.11</u>
<u>Difference:</u>	<u>\$5.28/Ac</u>

Note: the Pro-Germinator cost an additional \$2.68/Ac over the 10-34-0 and that side of the treatment also received an additional gallon of 12-0-0-26 @ \$2.60/Ac, giving us the additional \$5.28/Ac cost of treatment

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Company: **Basin Fertilizer & Chemical Co.**
 Acres: **44**
 Crop: **Russet Norkota Potatoes**
 Season: **2015**

Ty Hulse
 Basin Fertilizer

Control:	Distances Travelled (in ft.)		Total Length (in ft.)	Width Dug (in ft.)	Area Dug (sq. ft.)	Area Dug (in acres)	Yield/Acre (275 sack T/L)	Yield/Acre 15% dirt
10-34-0	641	1542	2183	9	19647	0.4510	610	521
22 Acres	831	1419	2250	9	20250	0.4649	592	506
	856	1572	2428	9	21852	0.5017	548	468
	869	1357	2226	9	20034	0.4599	598	511
	218	1572	1790	9	16110	0.3698	744	635
	983	1572	2555	9	22995	0.5279	521	445
Average			2239	9	20148	0.4625	602	514
Grower Estimate			1800	12	21600	0.4959	555	474

Trial:	Distances Travelled (in ft.)		Total Length (in ft.)	Width Dug (in ft.)	Area Dug (sq. ft.)	Area Dug (in acres)	Yield/Acre (275 sack T/L)	Yield/Acre 15% dirt
Pro-Germ	872	550	1422	12	17064	0.3917	702	600
22 Acres	1012	470	1482	12	17784	0.4083	674	576
	1091	762	1853	12	22236	0.5105	539	460
	800	737	1537	12	18444	0.4234	649	555
	824	902	1726	12	20712	0.4755	578	494
	659	672	1331	12	15972	0.3667	750	641
	600	926	1526	12	18312	0.4204	654	559
Average			1554	12	18646	0.4281	649	555
Grower Estimate			1500	12	18000	0.4132	666	569

Grower estimate: 1,500 ft to fill Pro-Germ & 1,800 ft to fill 10-34-0

Totals:	Average Yield (sacks/Ac)		Difference (sacks/Ac)	Gross increase over 10-34-0 at \$7/cwt
	10-34-0	Pro-Germ		
Actual:	514	555	+ 41	\$ 287.00 /Ac
Grower:	474	569	+ 95	\$ 665.00 /Ac

		Total Nutrients Applied/Ac								
Field	\$/Ac	N	P	K	S	Zn	Mn	Cu	Fe	Humic
West 1/2	\$ 291.39	117.7	106.5	43.1	86.4	0.6	0.6	0.3	0.8	14.1
East 1/2	\$ 286.11	129.4	88.2	40.6	83.4	0.6	0.6	0.3	0	14.1
Difference from West 1/2 to East 1/2		-11.7	18.3	2.5	3	0	0	0	0.8	0
+ \$ 5.28/Ac for West 1/2										

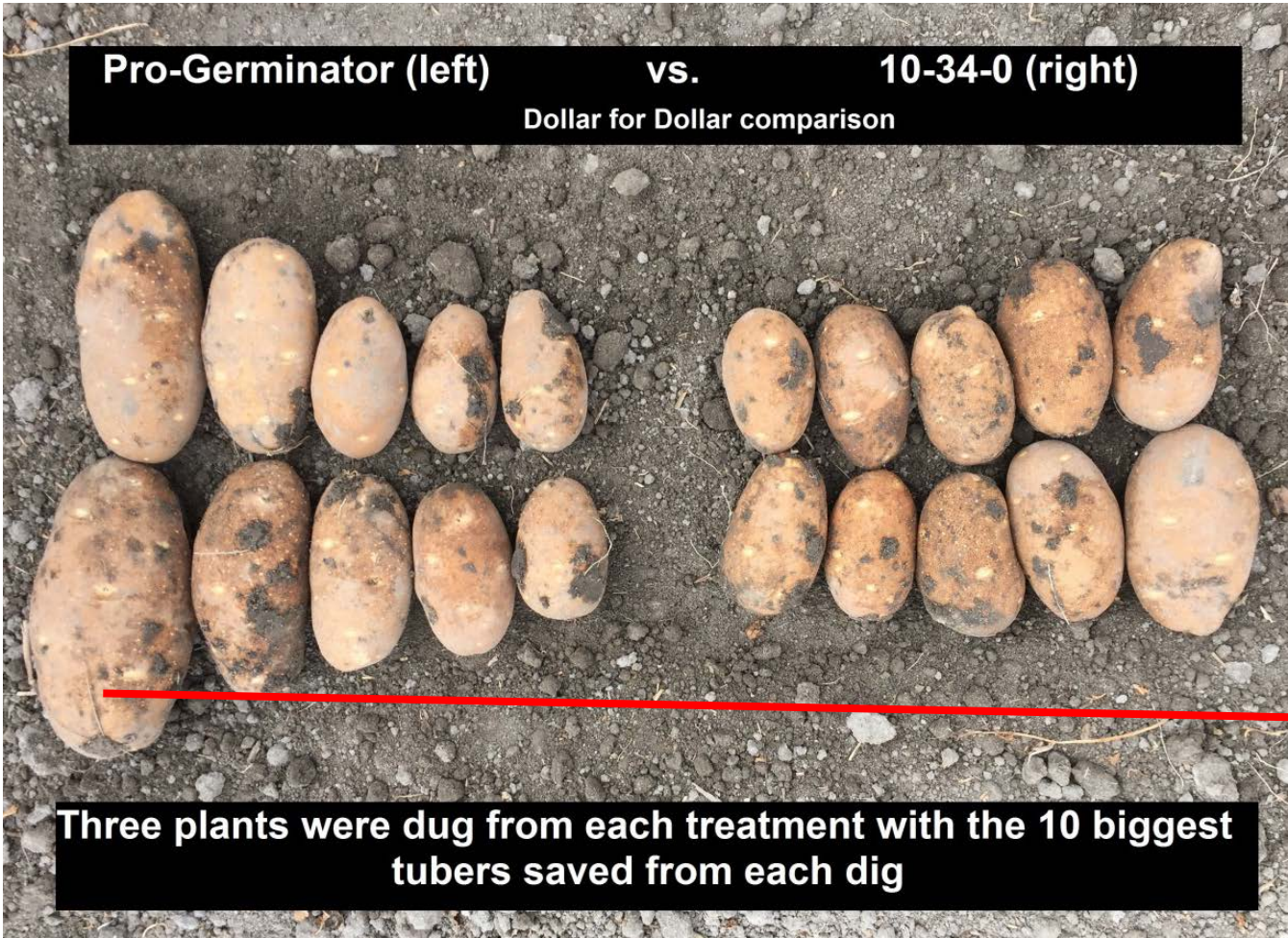
(this total also includes the 5 gal 10-34-0 applied to both halves prior to tissue results)

Results:

As stated, tissue samples were pulled weekly for five consecutive weeks beginning July 15th and ending August 12th. The results (attached at the end of this report) show no significant differences. The Pro-Germinator side showed lower Phosphorus tissue levels only in the first and last results and neither are statistically significant. Overall, the tissue results did not show any difference which isn't a drawback or a concern as the purpose of the tissues was to ensure we weren't going backwards on the Pro-Germinator side as we were technically applying far less actual phosphorus than the 10-34-0 side. The difference showed in the tubers coming out of the field, both in size and yield. We would have liked to have seen a big difference in the tissue levels and maybe we will with future results.

The Pro-Germinator treatment cost an additional \$5.28/Ac but resulted in an additional 44 sacks of potatoes per acre with a larger size profile as well. Both treatments ended up with nearly identical nutrients applied, except for the Pro-Germinator received nearly 12 lbs *less* Nitrogen but 18 lbs *more* Phosphorus. Again, that is based on the perceived efficiency of the Phosphorus provided by Pro-Germinator. In all actuality, the Pro-Germinator side received 48 lbs less Phosphorus if the efficiency is to be negated. Due to the increase in yield and size profile, the efficiency of Pro-Germinator looks to be confirmed or at least worthy of further examination/experimentation.

- Market price: \$7.00/cwt fresh market potatoes
- Cost of investment: \$5.28/Ac
- Yield increase: 44 sacks/Ac
- Gross return: \$287.00/Ac
- Net return: \$281.72/Ac



Date	Pro-Germinator - West Half		10-34-0 - East Half	
	Product	Rate	Product	Rate
25-Jun	32-0-0	3 gal/Ac	32-0-0	3 gal/Ac
	12-0-0-26	5 gal/Ac	12-0-0-26	5 gal/Ac
	10-34-0	5 gal/Ac	10-34-0	5 gal/Ac
	Humic Acid	0.25 gal/Ac	Humic Acid	0.25 gal/Ac
	Zicron	0.25 gal/Ac	Zicron	0.25 gal/Ac
	Manron	0.25 gal/Ac	Manron	0.25 gal/Ac
3-Jul	32-0-0	3 gal/Ac	32-0-0	3 gal/Ac
	12-0-0-26	5 gal/Ac	12-0-0-26	5 gal/Ac
	Pro-Germinator	2.23 gal/Ac	10-34-0	5 gal/Ac
	Humic Acid	0.25 gal/Ac	Humic Acid	0.25 gal/Ac
	Zicron	0.25 gal/Ac	Zicron	0.25 gal/Ac
	Manron	0.25 gal/Ac	Manron	0.25 gal/Ac
	Copron	0.25 gal/Ac	Copron	0.25 gal/Ac
15-Jul	32-0-0	3 gal/Ac	32-0-0	3 gal/Ac
	12-0-0-26	5 gal/Ac	12-0-0-26	5 gal/Ac
	Pro-Germinator	2.14 gal/Ac	10-34-0	5 gal/Ac
	Humic Acid	0.25 gal/Ac	Humic Acid	0.25 gal/Ac
	Zicron	0.25 gal/Ac	Zicron	0.25 gal/Ac
	Manron	0.25 gal/Ac	Manron	0.25 gal/Ac
	Copron	0.25 gal/Ac	Copron	0.25 gal/Ac
20-Jul	32-0-0	5 gal/Ac	32-0-0	5 gal/Ac
	12-0-0-26	2 gal/Ac	12-0-0-26	2 gal/Ac
	Pro-Germinator	2.23 gal/Ac	10-34-0	5 gal/Ac
	Humic Acid	0.25 gal/Ac	Humic Acid	0.25 gal/Ac
	Zicron	0.25 gal/Ac	Zicron	0.25 gal/Ac
	Manron	0.25 gal/Ac	Manron	0.25 gal/Ac
	Sure-K	3 gal/Ac	Sure-K	3 gal/Ac
24-Jul	32-0-0	2.05 gal/Ac	32-0-0	2.05 gal/Ac
	12-0-0-26	5.11 gal/Ac	12-0-0-26	4.09 gal/Ac
	Pro-Germinator	0.91 gal/Ac	10-34-0	2.05 gal/Ac
	Magnesium	0.25 gal/Ac	Magnesium	0.25 gal/Ac
1-Aug	32-0-0	2 gal/Ac	32-0-0	2 gal/Ac
	12-0-0-26	3 gal/Ac	12-0-0-26	3 gal/Ac
12-Aug	32-0-0	1.14 gal/Ac	32-0-0	1.14 gal/Ac
	12-0-0-26	3 gal/Ac	12-0-0-26	3 gal/Ac
	KTS	2 gal/Ac	KTS	2 gal/Ac

	Pro-Germinator - West Half		10-34-0 - East Half	
	Product	Rate	Product	Rate
Totals:	32-0-0	19.18 gal/Ac	32-0-0	19.18 gal/Ac
	12-0-0-26	28.11 gal/Ac	12-0-0-26	27.09 gal/Ac
	Pro-Germinator	7.50 gal/Ac	10-34-0	22.05 gal/Ac
	10-34-0	5 gal/Ac	Humic Acid	1 gal/Ac
	Humic Acid	1 gal/Ac	Zicron	1 gal/Ac
	Zicron	1 gal/Ac	Manron	1 gal/Ac
	Manron	1 gal/Ac	Copron	0.5 gal/Ac
	Copron	0.5 gal/Ac	Magnesium	0.25 gal/Ac
	Magnesium	0.25 gal/Ac	Sure-K	3 gal/Ac
	Sure-K	3 gal/Ac	KTS	2 gal/Ac
	KTS	2 gal/Ac		

WESTERN LABORATORIES, INC.

P.O. Box 1020 • 211 Highway 95 • Parma, ID 83660
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Dealer:

Grower:

Variety:

Field id:

10-34-0 Treatment

Acres: 22.5

Area:

Monitor No:

531

SV No:

MX Nutrient Monitoring Program 2015

LABORATORY NO		4944	6147	7411	8381	9022							
DATE		7/15	7/22	7/29	8/5	8/12							
PLANT NUTRIENTS	SUFFICIENCY RANGE	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS	YOUR RESULTS
Nitrates	7840	18426	17819	15727	14720	17237							
Phosphorus	.2 - .55	0.49	0.43	0.53	0.40	0.26							
Potassium	7.5 - 15	10.26	11.03	10.32	7.64	10.17							
Sulfur	.2 - .5	0.30	0.32	0.27	0.25	0.33							
Calcium	.45 - 2	0.88	0.94	0.78	0.96	1.49							
Magnesium	.4 - 1.7	0.26	0.17	0.29	0.31	0.35							
Zinc	23 - 55	23	25	51	30	42							
Manganese	33 - 70	60	52	50	18	28							
Copper	5 - 30	9	6	6	6	6							
Iron	75 - 350	321	138	262	280	220							
Boron	21 - 55	29	25	28	29	25							

SOIL NO ₃ POUNDS													
SOIL NH ₄ POUNDS													
TOTAL LBS SOIL N													

HIGH	•										
SUFFICIENT		•	•	•	•		•		•	•	•
DEFICIENT						•		•			
ELEMENT	N	P	K	S	Ca	Mg	Zn	Mn	Cu	Fe	B

	RECOMMENDATIONS IN POUNDS PER ACRE										
	N	P	K	S	Ca	Mg	Zn	Mn	Cu	Fe	B
FOLIAR						0.25		0.2			
WATER RUN						5		0.2			5

