

RESEARCH FOR RESULTS



Overview: This is a test conducted by Johnny's Select Seeds to determine the effectiveness of SoilBiotics 1r – Seed Treatment in improving vegetable seed germination and stands.

Location: Red Fire Farm, Montague, Ma

Date Visited: 5/16/19

Enhancement Tested: 1r Seed Treatment, from Soil Biotics

Crops Treated: Spinach (pages 1-3), Red and Golden Beets (page 4), and Carrots (pages 4-5)

- **Spinach:**

- Kolibri (SRIJ), 80% JSS Germ.
- 2 Plantings
 - ✦ **4/24/19:** Two beds, one seeded with treated seed, the other seeded w/ untreated seed
 - ✦ **5/1/19:** One bed, three rows seeded with treated seed, two rows with untreated ○ Clear visual difference between treated and untreated beds, seedling counts unnecessary ✦ **Treated beds had thicker, more consistent stands.**



Treated Rep



Untreated Rep



Treated Rep



Untreated Rep



Left Three Rows: Treated: Right Two Rows: Untreated



Untreated

Treated



Untreated

Treated

- **Beets:**

- Boro (SBEJ), 80% JSS Germ and Touchstone Gold, (SSAK), 75% JSS Germ
- Seeded 4/23/19
- One bed seeded with treated seed, one bed with untreated
- Seedlings just emerging, difficult to make visual comparison
- Seedling Counts conducted as follows:
 - ✦ Beds were walked, every ten paces technician would count emerged seedlings from all three rows of a one-bed-foot-plot.

Boro Seedling Counts			
Plot:	Treated:	Untreated:	Difference:
1	14	25	-11
2	16	21	-5
3	27	21	6
4	24	9	15
5	35	2	33
6	21	12	9
7	30	36	-6
8	30	17	13
9	28	0	28
10	28	23	5
Total:	253	166	87
		Percent Difference:	42%
		P-Value:	4%

Touchstone Gold Seedling Counts			
Plot:	Treated:	Untreated:	Difference:
1	15	9	6
2	10	18	-8
3	12	10	2
4	20	6	14
5	21	4	17
6	14	8	6
7	16	11	5
8	20	11	9
9	16	11	5
10	13	7	6
Total:	157	95	62
		Percent Difference:	49%
		P-Value:	1%

- **As shown in the above table, there was a statistically significant increase in germination rates in the treated seed, compared to untreated, for both Boro and Touchstone Gold.**

- **Carrots:**

- Yaya (SBEJ), 75% JSS Germ
- Seeded 5/1/19
- One bed seeded with treated seed, one bed with untreated
 - ✦ Treated seed planted into edge bed, with poorer field conditions
 - Seedlings just emerging, difficult to make visual comparison
 - Seedling Counts conducted as follows:
 - ✦ Beds were walked, every ten paces technician would count emerged seedlings from all three rows of one-bed-foot-plot.

Yaya			
Plot:	Treated:	Untreated:	Difference:
1	53	31	22
2	42	44	-2
3	51	36	15
4	41	35	6
5	34	28	6
6	33	28	5
7	45	37	8
8	37	20	17
9	33	24	9
10	37	28	9
Total:	406	311	95
		Percent Difference:	26%
		P-Value:	0%

- As shown in the above table, there was a statistically significant increase in germination rates in the treated seed, compared to untreated

Conclusions:

- SoilBiotics 1r – Seed Treatment showed a significant improvement on germination rates and stand quality for all three crops.