

## BSSI – Insecticide / Fungicide - Atlantic AgriTech 2024 Trial Summary

### Planting / Emergence:

This trial was planted with Yukon Gem (whole) seed on May 13<sup>th</sup>, 2024. We applied in-furrow treatments Actara and Quadris. Treatments were as follows:

- Treatment 1: Control (no insecticide or fungicide applied in-furrow)
- Treatment 2: Grower Standard Practice (GSP)
  - o Actara 240SC 4.4 ml/100m row
  - o Quadris 6 ml/100m row
- Treatment 3: GSP50 (1 X GSP on 50% of the area banded approx.. 3 inches either side of the seed piece)
- Treatment 4: 15GSP (1.5 X GSP on 50% of the area banded approx.. 3 inches either side of the seed piece)

To replicate precise placement, we tested our hand-boom sprayer on a sheet of paper towel and calibrated ourselves to the correct walking speed to deliver the desired amount of product around the seed piece. As you can see in the image below, product placement was satisfactory.



Test strip of paper towel to replicate precise product placement by hand boom



Result of in-furrow treatments. Seed spacing was 13”.

After application in-furrow, Treatments 3 and 4 were rolled with Press Wheel supplied by BSSI.

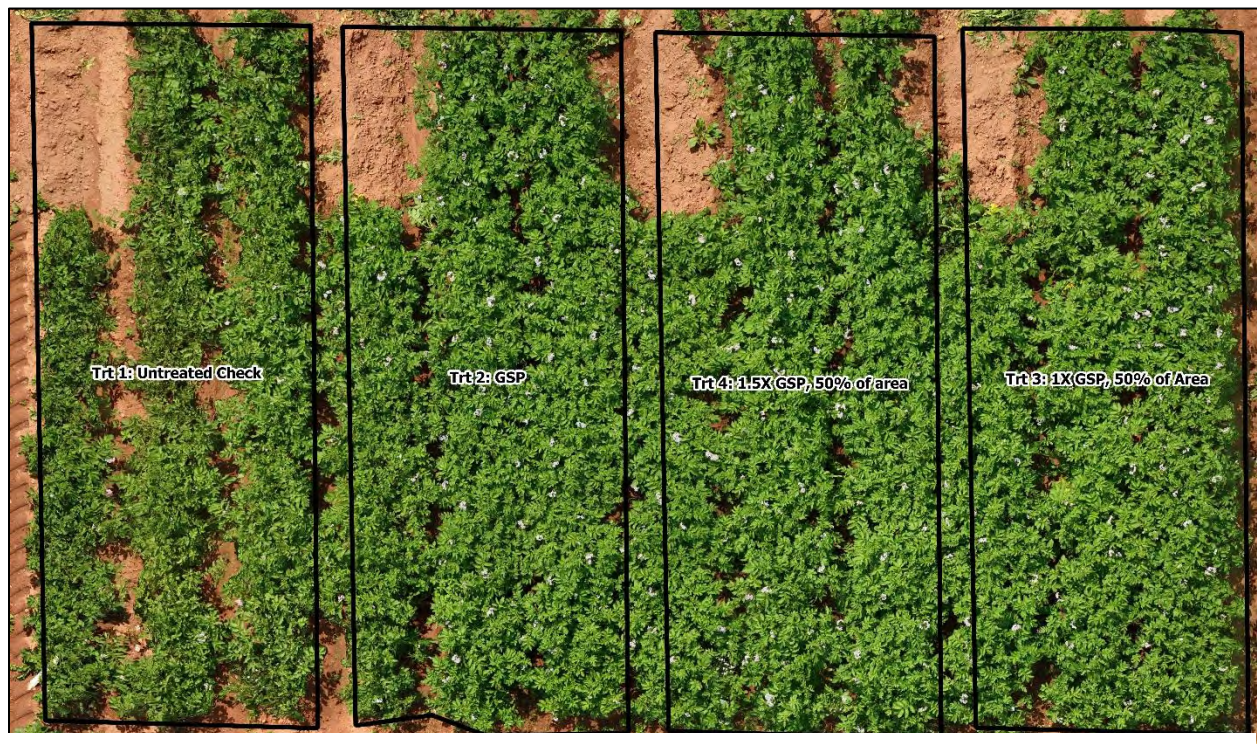
Plants emerged on Jun 8<sup>th</sup>. We performed plant counts on Jun 10<sup>th</sup> and Jun 13<sup>th</sup> and found no differences in emergence among treatments. An image from Jun 17<sup>th</sup> is provided in the shared folder which shows emergence.

### In-Season

We had heavy CPB pressure on the farm this year. We noticed adult CPB beginning to feed on control plots as soon as emergence began. We found egg masses in nearby trials on June 13<sup>th</sup>. We began CPB ratings on July 2<sup>nd</sup> and carried them out once per week until the end of July.

In terms of CPB defoliation, there were significant differences between Treatment 1 (Untreated Check without Actara) and all other treatments. We did not see differences between Treatment 2, 3 or 4. On July 15<sup>th</sup>, when plants were fully flowered, we flew the drone very low over the plots and used software to detect flower numbers in each plot. This gave us a more objective defoliation rating than doing so by eye. The untreated check had an average of 62.3 flowers per plot while Treatment 2 had 114.5, Treatment 3 had 107.0 and Treatment 4 had 107.5.

Even on the last rating timing, Jul 22<sup>nd</sup>, there were no statistical differences between Treatment 2/3/4 in terms of defoliation. NDVI from July 30<sup>th</sup> shows no difference between those treatments. An image in the shared folder from August 6<sup>th</sup> shows no noticeable difference in defoliation between treatments 2/3/4.



July 15<sup>th</sup> drone image of Rep 1

There were no statistically significant differences in Rhizoc Stem/Stolon infection between treatments. Infection levels were low overall at the time of this rating. Treatment 1 did have higher infection rates but differences were small.

### **Harvest Data**

Yield data showed that CPB defoliation had a significant impact on yield with only 11.98 kg per plot (single row) on average found in the untreated check. Treatment 2 had 17.15 kg per plot, Treatment 3 had 19.98 kg per plot, and Treatment 4 had 19.93 kg per plot. There were no statistical differences in yield between these three treatments.

Rhizoc tuber ratings showed significant differences between Treatment 1 and the other 3 treatments. Although black scurf presence on harvested tubers was low throughout the trial, the untreated checks were statistically significantly different than Treatments 2-4.

# Atlantic AgriTech Inc.

## BSSI INS/FUNG Trial

Trial ID: POT2469  
 Protocol ID:                      Location:      Trial Year: 2024  
 Study Director:      Sponsor Contact:  
 Investigator:

**Status:** E      established  
**ARM Trial Created On:** Apr-19-2024

**Regulations**  
**Conducted Under GLP:** No  
**Conducted Under GEP:** No

**Crop Description**  
**Crop 1:** C      SOLTU Solanum tuberosum      Potato  
**Entry Date:** Oct-29-2024      **Stage Scale:** BBCH  
**Variety:** Yukon Gem  
**Planting Date:** May-13-2024  
**Depth:** 10      cm  
**Rows per Plot:** 3      **Planting Method:** SEEDHA seeded by hand  
**Row Spacing:** 91      cm      **Planting Equipment:** HA      by hand  
**Spacing within Row:** 33      cm  
**Emergence Date:** Jun-8-2024  
**Harvest Date:** Sep-25-2024

**Pest Description**  
**Pest 1 Type:** I      **Code:** LPTNDE Leptinotarsa decemlineata      **Entry Date:** Oct-29-2024  
**Common Name:** Colorado beetle      **Stage Scale:** DESC  
**Artificial Population:** N      no

**Site and Design**  
**Treated Plot Width:** 3      m      **Site Type:** FIELD      field  
**Treated Plot Length:** 6      m      **Experimental Unit:** 1      PLOT      plot  
**Treated Plot Area:** 18.0 m<sup>2</sup>      **Tillage Type:** CONTIL      conventional-till  
**Replications:** 4      **Treatments:** 4      **Plots:** 16      **Study Design:** RACOB      Randomized Complete Block (RCB)  
**Distance between Blocks:** 1      m  
**Distance between 'Plot' Experimental Units:** 0.5 m

**Maintenance**

No.	Date	Type	Maintenance Product Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Tank Mix (Yes/No)	Comment
1.	May-13-2024	FERT				GR	600	kg/ha		15-15-15-2S-2Mg banded before planting
2.	Jun-3-2024	HERB	SENCOR 75WG	75	%AW/W	WG	1500	g/ha	yes	
3.	Jun-3-2024	HERB	LOROX 50 DF	50	%AW/W	DF	2.5	L/ha	yes	
4.	Jul-1-2024	HERB	ARROW 120 EC	120	gA/L	EC	375	mL/ha	yes	
5.	Jul-1-2024	FUNG	PENNCOZEB DG 75 WG	75	%AW/W	WG	2.25	kg/ha	yes	
6.	Jul-8-2024	FUNG	BRAVO ZN 4.17 SC	500	gA/L	SC	2	L/ha	no	
7.	Jul-19-2024	FUNG	PENNCOZEB DG 75 WG	75	%AW/W	WG	2.25	kg/ha	no	
8.	Jul-30-2024	FUNG	PENNCOZEB DG 75 WG	75	%AW/W	WG	2.25	kg/ha	no	
9.	Aug-7-2024	FUNG	PENNCOZEB DG 75 WG	75	%AW/W	WG	2.25	kg/ha	yes	
10.	Aug-7-2024	HERB	REGLONE DESICCANT	240	gA/L	SL	2	L/ha	yes	

**Field Prep./Maintenance:**  
 Field was prepared with one pass of Res-till implement on April 16, 2024

**Soil Description**

**% OM:** 2.8  
**pH:** 6.3      **CEC:** 8

No.	Date	Moisture Total	Unit	Min Temp	Max Temp	Avg Temp	Temp Unit	Min % Relative Humidity	Max % Relative Humidity	Min Wind	Max Wind	Avg Wind	Unit
1.	May-2-2024	0	mm	2.246	7.258	3.851	C	90.5	100	0	6.9	3	MPS
2.	May-3-2024	0.4	mm	2.953	4.465	3.63	C	99.2	100	0.5	7.8	3.2	MPS
3.	May-4-2024	1.6	mm	2.555	4.067	3.309	C	100	100	0.6	8.9	3.6	MPS
4.	May-5-2024	0.2	mm	2.104	8.48	4.604	C	92.9	100	0	6.3	2.2	MPS
5.	May-6-2024	0	mm	1.455	9.59	5.726	C	84.5	96	0	7.4	1.9	MPS
6.	May-7-2024	1.8	mm	5.493	14.05	9.22	C	88.4	97.5	1.5	10.5	4.9	MPS

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7.	May-8-2024	1.2	mm	7.103	14.89	10.14	C	75.1	98.3	0	8.1	2.8	MPS
8.	May-9-2024	0.2	mm	3.955	8.66	5.88	C	86.1	96	0.6	6.4	2.5	MPS
9.	May-10-2024	9.2	mm	3.065	5.608	4.13	C	97	99.6	0.8	8.5	3.5	MPS
10.	May-11-2024	0	mm	1.808	8.46	4.718	C	91	100	0	5.1	2.1	MPS
11.	May-12-2024	0	mm	-0.127	9.06	5.22	C	91.1	100	0	6.5	1.8	MPS
12.	May-13-2024	0	mm	2.246	8.46	5.341	C	89.2	97.6	0	8.4	3.2	MPS
13.	May-14-2024	0	mm	-0.635	15.49	8.33	C	74.6	100	0	4.2	1.6	MPS
14.	May-15-2024	0	mm	2.414	16.82	10	C	64.8	94.7	0	6.6	1.7	MPS
15.	May-16-2024	0	mm	6.187	18.9	12.03	C	73.5	91.6	0	6.4	1.6	MPS
16.	May-17-2024	0	mm	6.566	15.05	9.77	C	87.1	98.3	0	5.5	1.6	MPS
17.	May-18-2024	0	mm	6.016	13.7	9.37	C	89.2	100	0	4.5	1.6	MPS
18.	May-19-2024	0	mm	6.467	17.9	11.8	C	86.5	100	0	7.7	2	MPS
19.	May-20-2024	0	mm	7.343	16.97	11.53	C	81.9	94.6	0.4	6.6	2.1	MPS
20.	May-21-2024	0	mm	8.23	21.04	14.54	C	68.5	86.1	0	7.4	2.6	MPS
21.	May-22-2024	0.2	mm	11.1	23.81	16.62	C	75.2	94.6	1.1	11.2	5.2	MPS
22.	May-23-2024	0	mm	9.9	22.33	15.52	C	81.8	97.8	0	8.3	2.3	MPS
23.	May-24-2024	1.2	mm	9.39	27.71	16.31	C	86.2	100	0	10.5	2	MPS
24.	May-25-2024	0.6	mm	12.04	25.84	18.46	C	71.9	97.5	0	12.9	3.5	MPS
25.	May-26-2024	0	mm	6.935	13.76	10.87	C	87.9	99.1	0	7.4	2.4	MPS
26.	May-27-2024	0	mm	5.776	12.19	8.73	C	85.1	97.5	0	5.3	1.8	MPS
27.	May-28-2024	0	mm	4.449	17.2	10.93	C	80.7	99.4	0	8.6	2.2	MPS
28.	May-29-2024	2	mm	9.04	18.71	14.29	C	91.8	97.5	1.6	14	5.7	MPS
29.	May-30-2024	0.2	mm	9.82	23.18	16.65	C	80.7	99	0	12	3.6	MPS
30.	May-31-2024	0	mm	7.669	17.56	12.69	C	70	92.5	0	5.8	1.4	MPS
31.	Jun-1-2024	0	mm	5.877	15.85	10.79	C	78.9	95.7	0	6.3	1.8	MPS
32.	Jun-2-2024	1.2	mm	5.522	11.26	8.3	C	88.9	97.7	0.2	8	2.7	MPS
33.	Jun-3-2024	7.8	mm	7.755	11.09	8.72	C	94.9	100	0.5	10.9	3.6	MPS
34.	Jun-4-2024	0.4	mm	7.992	12.36	9.65	C	99	100	0	4.5	1.6	MPS
35.	Jun-5-2024	0	mm	9.38	15.05	11.22	C	95	100	0.6	6.8	2.6	MPS
36.	Jun-6-2024	0	mm	9.83	16.86	13.11	C	88	97.7	0.1	8.1	3.1	MPS
37.	Jun-7-2024	0	mm	7.741	14.41	10.18	C	95.3	100	0	3.4	1.2	MPS
38.	Jun-8-2024	0	mm	5.311	16.79	11.06	C	94.9	100	0	4.6	1	MPS
39.	Jun-9-2024	3.4	mm	10.14	19.77	15.18	C	92.4	100	0	6.6	1.8	MPS
40.	Jun-10-2024	1.4	mm	13.39	21.4	16.42	C	86	99.5	0.6	9.6	3.2	MPS
41.	Jun-11-2024	0.2	mm	13.11	20.71	15.87	C	81.4	97.5	0.5	10.5	3.9	MPS
42.	Jun-12-2024	0	mm	11.3	19.57	14.73	C	89.2	99.6	0	5.5	1.6	MPS
43.	Jun-13-2024	0	mm	9.97	20.46	14.79	C	91.6	100	0	3.4	0.9	MPS
44.	Jun-14-2024	0	mm	12.42	25.34	18.87	C	75.4	97.2	0	10	3.3	MPS
45.	Jun-15-2024	0	mm	14.48	27.96	20.5	C	70.9	85.8	0.9	12.2	4.7	MPS
46.	Jun-16-2024	10.4	mm	11.08	17.81	14.86	C	92.1	98.1	0	6.8	1.9	MPS
47.	Jun-17-2024	0	mm	10.37	20.73	14.91	C	64.4	96.4	0	9.7	2.9	MPS
48.	Jun-18-2024	0	mm	12.87	24.21	18.03	C	56.8	76.4	0.9	12.9	4.6	MPS
49.	Jun-19-2024	0	mm	14.54	27.27	20.54	C	67.7	80.4	0.1	10.4	4.2	MPS
50.	Jun-20-2024	0	mm	18.65	31.96	24.92	C	73.4	87.5	0.1	10.6	4.3	MPS
51.	Jun-21-2024	0.2	mm	20.38	32.16	25.67	C	72.7	88.2	0	9.5	3.3	MPS
52.	Jun-22-2024	0	mm	15.05	24.44	19.95	C	55.1	77.2	0	6.1	2.1	MPS
53.	Jun-23-2024	0	mm	13.61	26.15	20.07	C	58.9	88.3	0	6.3	2.5	MPS
54.	Jun-24-2024	43.8	mm	14.75	21.84	17.5	C	85.4	98.4	0.4	9.5	3.4	MPS
55.	Jun-25-2024	4	mm	15.09	19.98	17.2	C	94.3	98.4	0	11	2.4	MPS
56.	Jun-26-2024	18.2	mm	13.93	15.8	14.92	C	97.6	100	0	5.1	1.5	MPS
57.	Jun-27-2024	0	mm	13.61	26.47	19.88	C	80.6	100	0	11.7	3.9	MPS
58.	Jun-28-2024	11.6	mm	15.02	21.58	18.25	C	91.6	97.6	0	10.3	3.3	MPS
59.	Jun-29-2024	0.4	mm	10.03	17.74	15.17	C	85	99.5	0	9	2.3	MPS

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60.	Jun-30-2024	0	mm	9.53	22.59	16.62	C	74.6	99.5	0	10.5	3.1	MPS
61.	Jul-1-2024	0.8	mm	12.86	22.59	17.79	C	86.3	93.1	1.1	13.4		MPS
62.	Jul-2-2024	0	mm	13.61	20.55	17.1	C	88.5	97.3	0	6.7		MPS
63.	Jul-3-2024	0	mm	12.52	25.05	19.17	C	70.7	98.1	0	2.5		MPS
64.	Jul-4-2024	0	mm	10.91	27.56	20.42	C	59	94.1	0	5.4		MPS
65.	Jul-5-2024	0	mm	15.03	24.18	19.36	C	63	79.4	0.7	8		MPS
66.	Jul-6-2024	0	mm	15.76	25.76	20.31	C	75.9	88.4	0.5	8.8		MPS
67.	Jul-7-2024	2.8	mm	17.21	20.42	18.71	C	90.9	96.1	0.5	8.8		MPS
68.	Jul-8-2024	0.2	mm	18.57	24.24	20.2	C	93.4	98.5	0	7.9		MPS
69.	Jul-9-2024	0	mm	17.08	29.5	23.7	C	81	98.5	0	6.1		MPS
70.	Jul-10-2024	0.4	mm	19.54	27.81	23.31	C	80	95.8	0.7	8.4		MPS
71.	Jul-11-2024	0.2	mm	19.23	28.92	23.54	C	80.4	95.3	0	7.9		MPS
72.	Jul-12-2024	44.6	mm	19.4	22.9	20.98	C	96.3	99.3	0	6.7		MPS
73.	Jul-13-2024	1	mm	18.68	23.18	20.49	C	94.4	99.3	0	7.7		MPS
74.	Jul-14-2024	0	mm	18.64	28.26	22.88	C	83.7	95.5	0.6	8.3		MPS
75.	Jul-15-2024	0.8	mm	19.16	30.24	23.95	C	79.5	94.2	0	6.5		MPS
76.	Jul-16-2024	0	mm	20.21	29.91	24.47	C	72.2	87.3	0	7.6		MPS
77.	Jul-17-2024	20.2	mm	20.22	28.92	23.47	C	85.3	95.1	0	8		MPS
78.	Jul-18-2024	0	mm	20	27.42	23.17	C	85.1	95	0	8.1		MPS
79.	Jul-19-2024	1.6	mm	19.91	24.68	21.83	C	89.4	95.4	0.6	9.1		MPS
80.	Jul-20-2024	0	mm	17.85	26.56	21.43	C	74.2	94.5	0.3	8.2		MPS
81.	Jul-21-2024	0	mm	17.27	26.57	21.78	C	67.4	84.5	0	9.2		MPS
82.	Jul-22-2024	0	mm	15.18	24.23	19.32	C	79.1	89.2	0	7.4		MPS
83.	Jul-23-2024	0	mm	14.28	24.5	19.08	C	66.7	86.6	0.4	10.4		MPS
84.	Jul-24-2024	0	mm	14.61	23.37	19.09	C	78.5	89.2	0	3.8		MPS
85.	Jul-25-2024	0	mm	14.91	23.58	19.43	C	78.1	97.3	0	2.6		MPS
86.	Jul-26-2024	7.4	mm	14.79	25.44	20.51	C	78	95.6	0	8.3		MPS
87.	Jul-27-2024	0	mm	14.49	22.88	18.96	C	84.9	95.2	0	6.8		MPS
88.	Jul-28-2024	0	mm	13.62	24.1	19.24	C	75.2	93.6	0	5.1		MPS
89.	Jul-29-2024	0	mm	16.42	27.65	21.97	C	66.4	86.1	0.9	11.1		MPS
90.	Jul-30-2024	0	mm	16.63	29.19	22.96	C	73.7	84.6	0.8	9.7		MPS
91.	Jul-31-2024	0	mm	15.63	25.33	20.97	C	78.6	93.6	0	8.7		MPS

### Application Description

	<b>A</b>
<b>Date</b>	May-13-2024
<b>Start Time</b>	11:00 AM
<b>Stop Time</b>	11:30 AM
<b>Standard</b>	INSP
<b>Method</b>	SPRAY
<b>Timing</b>	ATPLAN
<b>Placement</b>	INFURR
<b>Entry Date</b>	Nov-5-2024
<b>Air Temperature Start, Stop</b>	13, 13 C
<b>% Relative Humidity Start, Stop</b>	62, 62
<b>Wind Velocity+Dir. Start</b>	5 KPH, E
<b>Wind Velocity+Dir. Stop</b>	5 KPH, E
<b>Soil Temperature</b>	12.9 C
<b>Soil Moisture</b>	DRY

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### Crop Stage At Each Application

	<b>A</b>
<b>Crop 1 Code, BBCH Scale</b>	SOLTU, BPOT
<b>Days after Emergence</b>	-26

### Pest Stage At Each Application

	<b>A</b>
<b>Pest 1 Code, Type, Scale</b>	LPTNDE, I, DESC

### Application Equipment

	<b>A</b>
<b>Equipment Type</b>	MANCAI
<b>Operation Pressure</b>	2.06 BAR
<b>Nozzle Type</b>	FLAFAN
<b>Nozzle TradeName</b>	Teejet
<b>Nozzle Tip Size, Color</b>	67, -
<b>Nozzles/Row</b>	1.0
<b>Nozzle Count</b>	1
<b>Band Width</b>	20.0 cm
<b>Carrier</b>	WATER
<b>Propellant</b>	COMCO2

### Notes

No.	Context	Date	By	Notes
1.	STATUS	Apr-19-2024	Evan MacDonald	Automatically added by ARM: Trial Status updated to 'S' during trial creation by (XZRMAE).
2.	STATUS	Jun-13-2024	Evan MacDonald	Automatically added by ARM: Trial Status updated to 'E' when Rating Date was entered by (XZRMAE).