

ANNUAL REPORT

ISCD A MULTI-LOCATION SWEET CORN SEED TREATMENT TRIAL – 2024

INTRODUCTION

Since 1989, the Seed Treatment Committee of the International Sweet Corn Development Association (ISCD A) has organized annual multi-location trials to identify seed treatments to maximize sweet corn stands across diverse planting environments. In 2024, we evaluated fifteen seed treatment mixtures and an insecticide-only control using two *sh2* sweet corn varieties planted at eight locations.

MATERIALS & METHODS

MATERIALS: HM Clause and Illinois Foundation Seeds provided seed lots for the 2024 trial, described in Table 1. In December 2023, a call for entries was sent to seed treatment companies. Table 2 describes the treatments and their sponsors. The committee included two non-sponsored treatments, an insecticide-only control, and a standard seed treatment blend. Most treatments included one or two insecticides and several fungicides, and many included microbial products and/or micronutrients. Treatments 9 and 15 did not include an insecticide. In early February, Richard Fillmore, The McGregor Company, applied the seed treatments and mailed sets of treated seeds to cooperating researchers.

EXPERIMENTAL DESIGN & DATA COLLECTION: The experimental design at each location varied, but all sites established randomized plots with at least four replications. Trials were planted at eight locations in five states (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2, and WI-3) (Table 3). Planting dates ranged from late April through May. Each plot was evaluated for stand, weak plants, and vigor when the seedlings were at or near the 5-6 leaf stage. Weak plants were two or more leaves behind the average seedlings in the plot and are reported as the % slows, calculated by dividing the number of weak plants by the number of emerged plants. An adjusted % stand (non-emerged seeds and weak seedlings) was calculated by subtracting the number of weak plants from the number of emerged plants. Vigor ratings were assigned to each plot on a qualitative visual scale of 1-5 (1=extremely weak, 2=weak, 3=fair, 4=vigorous, 5=very vigorous).

SOIL ASSAYS: Soil samples (0–6-inch depth) were collected for soil pathogen screening (*Pythium* spp. and *Fusarium* spp.). The samples were assayed by personnel at the Oregon State University Plant Pathology Laboratory in Hermiston. *Pythium* and *Fusarium* species were quantified by soil dilution plating on culture media and were reported as the number of colony-forming units (CFU) per gram of soil. *Pythium* colonies were subjected to 10 ppm of metalaxyl to determine if they were sensitive to the fungicide; colonies with unrestricted growth were deemed metalaxyl-resistant. Soil pH was also measured.

DATA ANALYSIS: The % stand results for each variety at each location were subjected to an outlier analysis; % stand results that were less than or greater than 1.5 times the interquartile range of replicates for the treatment were considered extreme outliers, and all data from outlier plots (including weak plant counts and vigor ratings) were excluded from further analysis. The results at each location for each variety

were evaluated using analysis of variance (ANOVA). Standard deviation and coefficients of variation (CV) were calculated to estimate treatment and trial variability. Tukey's Honestly Significant Difference (HSD) method was used to compare and segregate treatment means ($P \leq 0.05$). Then, the treatment means were combined across locations (for each variety and combined varieties) and analyzed and compared using ANOVA and Tukey's HSD ($P \leq 0.05$). Data were analyzed using ARM 2024.2 and Summary Across Trials ST 2024.2 software (Gylling Data Management, Inc.). Results were plotted using box and whisker charts to display variability in treatment responses across locations.

TABLE 1: 2024 ISCDA Trial - Sweet Corn Seed Lots

Variety (<i>sh2</i>)	Sponsor	Seed Lot#	warm germ	cold germ	seed count
Natalie F1	HM Clause	PL226169	93.5%	95%	3,835 SPP
XTH1473	Illinois Foundation Seeds	89347 MF	81%	94%	4,645 SPP

TABLE 2: 2024 ISCDA Trial - Seed Treatments

No.	Sponsor	Treatment	Active Ingredients	Rate
1	Control w/insecticide	Cruiser	thiamethoxam	0.50 mg ai/seed
2	Nufarm	Precinct Spirato Salient Saxony TBZ Elliptica Trunemco Sembolite	mefenoxam fludioxonil metalaxyl+difenoconazole+ tebuconazole+imidacloprid azoxystrobin thiabendazole thiamethoxam (microbial) (nutrient)	0.23 oz/cwt 0.16 oz/cwt 1.24 oz/cwt 0.24 oz/cwt 0.24 oz/cwt 0.50 mg ai/seed 0.30 oz/cwt 0.60 oz/cwt
3	ISCDA Standard 2	Apron XL Dividend Extreme Thiram 480 Captan 4L ST Vitavax 34 Cruiser 5 FS	mefenoxam difenoconazole+mefenoxam thiram captan carboxin thiamethoxam	0.32 oz/cwt 5.00 oz/cwt 2.50 oz/cwt 2.50 oz/cwt 4.00 oz/cwt 0.50 mg ai/seed

No.	Sponsor	Treatment	Active Ingredients	Rate
4	Syngenta 1	Vibrance CINCO Dividend Extreme Maxim 480 Vayantis Cruiser 5 FS	mefenoxam+azoxystrobin+ fludioxonil+sedaxane+ thiabendazole difenoconazole+mefenoxam fludioxonil picarbutrazox thiamethoxam	0.077 mg ai/seed 2.00 oz/cwt 0.06 oz/cwt 0.0063 mg ai/seed 0.50 mg ai/seed
5	McGregor 2	Apron XL Dividend Extreme Thiram 480 Captan 4L ST Vitavax 34 Cruiser 5 FS Seed Start Root2 Seed Start Hera	mefenoxam difenoconazole+mefenoxam thiram captan carboxin thiamethoxam (micronutrients) (nutrients)	0.32 oz/cwt 5.00 oz/cwt 2.50 oz/cwt 2.50 oz/cwt 4.00 oz/cwt 0.5 mg ai/seed 8.00 oz/cwt 2.00 oz/cwt
6	Albaugh 1	Anchor 3L ST Thiabendazole 4L ST Ace Azoxystrobin 100ST Difenoconazole 3L ST Tebustar 250 ST Intego Legend 5L ST BIOST VPH 9.0	mefenoxam thiabendazole ipconazole azoxystrobin difenoconazole tebuconazole ethaboxam thiamethoxam (amendment)	0.38 oz/cwt 0.24 oz/cwt 0.16 oz/cwt 0.24 oz/cwt 2.00 oz/cwt 0.74 oz/cwt 1.00 oz/cwt 0.5 mg ai/seed 0.20 oz/cwt
7	Albaugh 2	Anchor 3L ST Thiabendazole 4L ST Ace Azoxystrobin 100ST Difenoconazole 3L ST Tebustar 250 ST Intego Legend 5L ST BIOST VPH 9.0 BIOST Nematicide	mefenoxam thiabendazole ipconazole azoxystrobin difenoconazole tebuconazole ethaboxam thiamethoxam (amendment) (microbial)	0.38 oz/cwt 0.24 oz/cwt 0.16 oz/cwt 0.24 oz/cwt 2.00 oz/cwt 0.74 oz/cwt 1.00 oz/cwt 0.5 mg ai/seed 0.20 oz/cwt 0.70 oz/cwt
8	Germaines	Ultim ST Cruiser	copper hydroxide thiamethoxam	16.49 oz/cwt 0.50 mg ai/seed
9	Lallemand 1	Allegiance FL Redigo 480 LALRISE Start SC	metalaxyl prothioconazole (biological)	0.20 oz/cwt 0.66 oz/cwt 0.50 oz/cwt

No.	Sponsor	Treatment	Active Ingredients	Rate
10	Lallemand 2	Vibrance CINCO Dividend Extreme Vayantis Cruiser 5 FS LALRISE Start SC	mefenoxam+azoxystrobin+ fludioxonil+sedaxane+ thiabendazole difenoconazole+mefenoxam picarbutrazox thiamethoxam (biological)	0.077 mg ai/seed 2.00 oz/cwt 0.0063 mg ai/seed 0.50 mg ai/seed 0.50 oz/cwt
11	McGregor 1	Apron XL Dividend Extreme Thiram 480 Captan 4L ST Vitavax 34 Cruiser 5 FS Seed Start Root ²	mefenoxam difenoconazole+mefenoxam thiram captan carboxin thiamethoxam (micronutrients)	0.32 oz/cwt 5.00 oz/cwt 2.50 oz/cwt 2.50 oz/cwt 4.00 oz/cwt 0.50 mg ai/seed 8.00 oz/cwt
12	Bayer 2	Allegiance FL Redigo 480 Trifloxystrobin Flowable EverGol Prime Thiamethoxam	metalaxyl prothioconazole trifloxystrobin penflufen thiamethoxam	0.75 oz/cwt 0.96 oz/cwt 0.32 oz/cwt 0.32 oz/cwt 0.50 mg ai/seed
13	Wilbur Ellis 1	Vibrance CINCO Dividend Extreme Cruiser 5 FS Tidal Grow NuVytal ZMFC	mefenoxam+azoxystrobin+ fludioxonil+sedaxane+ thiabendazole difenoconazole+mefenoxam thiamethoxam chitosan (nutrients)	0.077 mg ai/seed 2.00 oz/cwt 0.50 mg ai/seed 0.10 oz/cwt 8.00 oz/cwt
14	Wilbur Ellis 2	Vibrance CINCO Dividend Extreme Cruiser 5 FS NuVytal ZMFC	mefenoxam+azoxystrobin+ fludioxonil+sedaxane+ thiabendazole difenoconazole+mefenoxam thiamethoxam (nutrients)	0.077 mg ai/seed 2.00 oz/cwt 0.50 mg ai/seed 0.10 oz/cwt
15	Bayer 1	Allegiance FL Redigo 480	metalaxyl prothioconazole	0.20 oz/cwt 0.66 oz/cwt
16	Bayer 3	Allegiance FL Redigo 480 Trifloxystrobin Flowable EverGol Prime Poncho	metalaxyl prothioconazole trifloxystrobin penflufen clothianidin	0.75 oz/cwt 0.96 oz/cwt 0.32 oz/cwt 0.32 oz/cwt 0.50 mg ai/seed

TABLE 3: 2024 ISCDA Seed Treatment Committee Chairs & Cooperating Researchers			
Richard Fillmore, Committee Co-Chair, The McGregor Company Pedee Ewing, Committee Co-Chair, HM Clause Inc. Carrie Wohleb, Research Coordinator, Washington State University			
Trial	Location	Planting Date	Cooperator/Contact
ID-1	Huston, ID	May 1, 2024	Marija Topic, Crookham Company
ID-2	Nampa, ID	April 26, 2024	Pedee Ewing, HM Clause
IL-1	Tolono, IL	April 15, 2024	Eric Bruckner, IFSI
VA-1	Painter, VA	April 9, 2024	Doug Higgins, Virginia Tech
WA-1	Pasco, WA	May 15, 2024	Carrie Wohleb, Washington State Univ
WI-1	Plover, WI	May 14, 2024	Probir Kumar Das, IFSI
WI-2	Arlington, WI	May 1, 2024	Tim Gustafson, HM Clause
WI-3	DeForest, WI	May 13, 2024	David Kepner, Bayer U.S.

RESULTS

SOIL PATHOGEN ASSAYS: The soil pathogen assay results are shown in Table 4. WI-2 and VA-1 did not submit soil samples. All soil samples included *Pythium* and *Fusarium* species, but none had isolates sensitive to metalaxyl. It is important to recognize that the soil assays did not identify the organisms beyond their genera or determine whether they are pathogenic biotypes on sweet corn.

TABLE 4. 2024 ISCDA Seed Treatment Trial – Soil Pathogen Assays				
LOCATION	<i>Pythium</i> CFU/g soil	Metalaxyl-Resistant <i>Pythium</i> CFU/g soil	<i>Fusarium</i> CFU/g soil	Soil pH
ID-1	23	0	3688	6.53
ID-2	166	0	5605	7.24
IL-1	83	0	5584	5.31
WA-1	168	0	2253	6.60
WI-1	134	0	2788	6.15
WI-3	61	0	1170	6.10

RESULTS BY LOCATION: Tables 5-11 summarize the % stand, % slows, % adjusted stand, and vigor results for each variety at the different locations. Treatment means followed by the same letter were not significantly different (HSD $P \leq 0.05$). No results are shown for the WI-3 trial because heavy rain destroyed several plots before data could be recorded. Vigor ratings were not recorded at ID-1.

- **INSECT DAMAGE:** Doug Higgins noted significant stand issues in some plots at the VA-1 trial site caused by billbugs (*Sphenophorus* spp. weevils). The results from the VA-1 trial suggest that insecticide seed treatments were highly effective against billbugs (Table 8). The treatments without insecticides (Treatments 9 and 15) resulted in stands that were 47-74% lower than the insecticide-only control in Natalie plots, and 80-77% lower in XTH1473 plots. The insecticides, clothianidin and thiamethoxam, were equally effective since Treatments 12 and 16 performed similarly, and the only difference was the insecticide.

RESULTS ACROSS LOCATIONS: Tables 12-14 summarize the % stand, % slows, % adjusted stand, and vigor results combined across locations for both varieties, Natalie-only, and XTH1473-only. The tables include results with and without results from the VA-1 trial that was affected by soil insects. Treatment means followed by the same letter were not significantly different ($P \leq 0.05$). Figures 1-6 and 8-10 are box and whisker charts that show the distribution of treatment means for % stand, % slows, % adjusted stand, and vigor results combined across locations for both varieties, Natalie-only, and XTH1473-only. Figure 7 shows the difference between % stand and % adjusted stand for Natalie and XTH1473.

- **INTERACTIONS:** Most results had significant treatment x trial interactions, indicating that combined results do not represent performance at all locations. This should be kept in mind when reviewing the combined results. Box and whisker charts are provided to show trends for treatment responses across locations and the range in results.
- **SLOWS vs. SEED LOSS in ADJUSTED % STAND:** Accounting for slows (a.k.a., weak plants) reduced stand counts for Natalie by another 5.7% when averaged across locations, and reduced stand counts for XTH1473 by another 7.2% on average. Seed loss from rot, blighted seedlings, or other causes was more common than weak plants (Figure 7). Weak plants often produce undersized ears or ears with delayed maturity; this was demonstrated in the 2012 ISCD Multi-location Sweet Corn Seed Treatment Trial.

For more information about the 2024 ISCD Seed Treatment Trial or about participating in future trials, contact Carrie Wohleb at cwohleb@wsu.edu or (509) 707-3510. Thank you to all ISCD Seed Treatment Committee participants for your input in planning and evaluating the trials, and a big thank you to our cooperating researchers who conducted the trials.

TABLE 5. 2024 ISCDA Seed Treatment Trial - Results for ID-1

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	62.8	-	7.6	3.5	ab	1.7	60.5	ab	6.5			
2 Nufarm	83.0	-	5.4	0.8	b	0.5	82.3	a	5.0			
3 Standard	62.0	-	5.7	1.8	ab	2.9	60.8	ab	5.1			
4 Syngenta 1	63.1	-	6.9	0.8	ab	0.6	62.3	ab	6.4			
5 McGregor 2	68.3	-	13.2	0.5	b	1.0	68.0	ab	13.4			
6 Albaugh 1	62.1	-	2.0	4.1	ab	1.2	59.6	b	2.1			
7 Albaugh 2	73.3	-	19.5	3.0	ab	2.0	71.3	ab	19.8			
8 Germaines	69.5	-	17.2	2.8	ab	1.9	67.5	ab	15.8			
9 Lallemand 1	72.3	-	7.8	1.3	ab	1.0	71.3	ab	7.1			
10 Lallemand 2	69.5	-	13.3	1.0	ab	1.4	68.8	ab	13.6			
11 McGregor 1	68.8	-	17.4	1.0	ab	0.8	68.0	ab	17.0			
12 Bayer 2	72.3	-	6.2	1.8	ab	2.1	71.0	ab	7.6			
13 Wilbur Ellis 1	72.8	-	8.4	1.5	ab	0.6	71.5	ab	7.9			
14 Wilbur Ellis 2	73.5	-	12.9	1.3	ab	1.0	72.5	ab	12.4			
15 Bayer 1	70.3	-	15.0	3.5	ab	1.3	67.8	ab	14.5			
16 Bayer 3	79.2	-	1.7	4.7	a	2.3	75.3	ab	3.0			
Grand Mean	69.6			1.9			68.2					
ANOVA: TRT	0.0456			0.0035			0.0349					
HSD P=.05	22.7			3.8			22.1					
SD	8.8			1.5			8.6					
CV	12.6			74.1			12.5					
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	40.3	c	7.1	3.5	ab	1.5	34.5	b	6.5			
2 Nufarm	68.0	ab	8.4	0.8	b	2.1	65.0	a	7.9			
3 Standard	70.3	a	9.5	1.8	ab	3.2	67.3	a	10.0			
4 Syngenta 1	63.8	abc	8.8	0.8	ab	5.1	60.8	ab	9.2			
5 McGregor 2	75.4	a	2.1	0.5	b	4.0	72.5	a	3.1			
6 Albaugh 1	61.3	abc	8.0	4.1	ab	2.5	59.5	ab	6.8			
7 Albaugh 2	54.7	abc	3.1	3.0	ab	2.5	52.3	ab	1.7			
8 Germaines	41.5	bc	4.4	2.8	ab	2.5	37.3	b	3.9			
9 Lallemand 1	58.3	abc	11.9	1.3	ab	1.9	55.8	ab	12.4			
10 Lallemand 2	68.8	a	10.5	1.0	ab	2.6	66.3	a	10.4			
11 McGregor 1	61.8	abc	12.8	1.0	ab	6.4	58.8	ab	15.1			
12 Bayer 2	61.5	abc	7.7	1.8	ab	1.9	59.8	ab	8.1			
13 Wilbur Ellis 1	63.0	abc	19.3	1.5	ab	3.7	59.8	ab	17.6			
14 Wilbur Ellis 2	60.8	abc	9.3	1.3	ab	1.3	59.3	ab	9.6			
15 Bayer 1	62.0	abc	11.9	3.5	ab	6.2	57.8	ab	14.5			
16 Bayer 3	54.8	abc	19.2	4.7	a	1.5	52.5	ab	17.7			
Grand Mean	60.8			1.9			57.8					
ANOVA: TRT	0.0017			0.0035			0.0004					
HSD P=.05	26.5			3.8			26.1					
SD	10.3			1.5			10.1					
CV	17.1			74.1			17.7					

TABLE 6. 2024 ISCDA Seed Treatment Trial - Results for ID-2

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	55.5	c	12.2	15.3	-	3.3	47.3	c	10.3	2.63	-	0.75
2 Nufarm	63.0	bc	6.1	12.5	-	5.2	55.3	bc	6.5	2.63	-	0.85
3 Standard	75.0	abc	10.7	13.8	-	1.3	64.8	abc	9.9	3.38	-	1.48
4 Syngenta 1	78.5	abc	6.1	14.5	-	6.1	67.3	abc	8.9	3.38	-	0.48
5 McGregor 2	78.5	abc	8.6	9.8	-	4.3	70.5	ab	5.4	3.38	-	1.75
6 Albaugh 1	66.8	bc	8.1	13.0	-	2.6	58.0	abc	6.7	3.25	-	0.29
7 Albaugh 2	64.8	bc	12.3	17.5	-	6.8	54.0	bc	14.0	2.75	-	0.65
8 Germains	66.3	bc	10.7	16.0	-	3.9	55.5	bc	7.2	3.13	-	0.48
9 Lallemand 1	76.5	abc	9.8	19.3	-	6.0	62.0	abc	11.8	3.25	-	1.32
10 Lallemand 2	91.5	a	12.1	11.8	-	4.6	81.0	a	12.5	3.63	-	0.63
11 McGregor 1	79.8	ab	11.5	9.3	-	1.0	72.3	ab	10.3	3.38	-	0.48
12 Bayer 2	67.8	abc	13.0	10.0	-	2.8	60.8	abc	10.5	3.63	-	0.63
13 Wilbur Ellis 1	58.0	bc	15.0	14.0	-	5.5	50.5	bc	15.9	3.38	-	0.48
14 Wilbur Ellis 2	68.5	abc	16.5	16.8	-	4.6	56.8	bc	13.3	2.63	-	0.85
15 Bayer 1	71.5	abc	6.0	15.8	-	6.8	60.0	abc	4.2	3.00	-	0.82
16 Bayer 3	68.3	abc	6.2	9.5	-	3.9	61.8	abc	3.9	2.75	-	0.50
Grand Mean	70.8			14.0			61.1			3.16		
ANOVA: TRT	0.0004			0.0521			0.0004			0.12		
HSD P=.05	24.2			11.4			23.2			1.45		
SD	9.5			4.5			9.0			0.57		
CV	13.4			32.6			14.8			18.06		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	13.3	b	8.4	16.0	-	11.7	10.5	b	6.4	1.13	ab	0.25
2 Nufarm	12.0	b	6.3	12.0	-	10.7	10.3	b	5.2	1.00	b	0.71
3 Standard	69.8	a	9.2	22.5	-	4.7	54.3	a	9.0	2.00	a	0.00
4 Syngenta 1	75.8	a	4.0	14.3	-	2.9	65.0	a	3.9	1.75	ab	0.65
5 McGregor 2	71.3	a	4.3	18.0	-	6.2	58.3	a	11.0	1.88	ab	0.25
6 Albaugh 1	18.8	b	12.8	6.5	-	7.5	17.0	b	11.1	1.38	ab	0.48
7 Albaugh 2	24.8	b	12.9	20.3	-	19.0	19.0	b	13.3	1.50	ab	0.71
8 Germains	22.3	b	15.5	22.3	-	17.2	16.3	b	10.3	1.00	b	0.00
9 Lallemand 1	29.3	b	13.9	12.8	-	7.4	25.0	b	11.7	1.38	ab	0.48
10 Lallemand 2	78.5	a	15.2	18.0	-	4.2	64.3	a	3.6	2.00	a	0.00
11 McGregor 1	63.8	a	3.4	21.5	-	13.2	49.0	a	8.0	1.75	ab	0.29
12 Bayer 2	20.3	b	14.8	4.8	-	5.6	18.5	b	18.0	1.13	ab	0.25
13 Wilbur Ellis 1	21.0	b	20.3	12.0	-	13.9	17.0	b	10.6	1.00	b	0.71
14 Wilbur Ellis 2	22.0	b	15.2	8.3	-	10.5	18.8	b	14.8	1.38	ab	0.48
15 Bayer 1	28.5	b	18.7	18.0	-	8.3	23.8	b	13.1	1.50	ab	0.41
16 Bayer 3	19.3	b	15.1	13.0	-	9.3	16.8	b	3.9	1.25	ab	0.50
Grand Mean	38.1			15.2			31.1			1.45		
ANOVA: TRT	0.0001			0.2391			0.0001			0.0003		
HSD P=.05	24.0			24.8			20.5			0.93		
SD	9.4			9.7			8.0			0.36		
CV	25.4			64.4			26.5			25.20		

TABLE 7. 2024 ISCDA Seed Treatment Trial - Results for IL-1

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	77.5	-	0.0	13.3	a	2.6	67.0	-	2.1	3.68	-	0.60
2 Nufarm	79.0	-	14.3	8.5	ab	5.6	72.8	-	17.2	4.00	-	1.20
3 Standard	80.0	-	5.9	9.5	ab	1.3	72.5	-	5.6	4.00	-	0.80
4 Syngenta 1	87.3	-	4.4	6.8	ab	6.3	81.3	-	7.8	4.50	-	0.60
5 McGregor 2	80.9	-	0.6	5.3	ab	0.6	76.6	-	1.2	3.49	-	0.60
6 Albaugh 1	80.3	-	13.8	6.0	ab	3.5	75.3	-	12.8	4.25	-	1.00
7 Albaugh 2	82.0	-	12.3	8.8	ab	3.5	74.8	-	12.3	3.75	-	1.30
8 Germaines	81.8	-	4.1	13.0	a	4.2	71.3	-	6.4	3.50	-	0.60
9 Lallemand 1	84.3	-	3.3	9.0	ab	2.3	76.5	-	2.6	4.00	-	0.00
10 Lallemand 2	82.0	-	12.0	3.8	b	1.0	78.8	-	11.1	4.00	-	0.80
11 McGregor 1	84.8	-	6.1	5.3	ab	2.8	80.5	-	6.8	4.00	-	0.80
12 Bayer 2	89.2	-	3.8	5.6	ab	1.5	84.3	-	4.6	4.35	-	0.60
13 Wilbur Ellis 1	87.0	-	4.1	3.0	b	2.2	84.3	-	5.3	5.00	-	0.00
14 Wilbur Ellis 2	91.8	-	4.3	6.0	ab	3.4	86.3	-	4.3	4.75	-	0.50
15 Bayer 1	81.3	-	3.8	8.3	ab	4.8	74.5	-	1.7	4.00	-	0.00
16 Bayer 3	90.8	-	2.1	10.8	ab	2.1	81.0	-	1.6	4.25	-	0.50
Grand Mean	83.3			7.5			77.1			4.08		
ANOVA: TRT	0.2887			0.0016			0.0806			0.0917		
HSD P=.05	19.2			8.3			19.8			1.55		
SD	7.5			3.2			7.7			0.60		
CV	8.9			42.3			9.9			14.65		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	40.5	bc	2.1	26.0	a	4.8	30.0	de	1.4	1.00	b	0.00
2 Nufarm	68.8	ab	19.6	15.0	ab	8.8	59.5	a-d	21.8	2.50	ab	1.00
3 Standard	82.8	a	6.2	18.0	ab	6.4	67.8	abc	4.9	1.97	ab	1.00
4 Syngenta 1	80.5	a	11.6	15.5	ab	3.4	68.0	abc	9.6	2.75	a	0.50
5 McGregor 2	75.3	a	12.1	15.3	ab	9.0	64.0	abc	13.5	2.25	ab	1.00
6 Albaugh 1	84.4	a	4.6	11.0	b	3.6	75.1	ab	7.1	2.67	a	0.60
7 Albaugh 2	78.5	a	10.8	19.3	ab	7.8	63.3	abc	10.2	2.50	ab	0.60
8 Germaines	28.3	c	10.1	20.5	ab	7.6	22.3	e	8.3	1.00	b	0.00
9 Lallemand 1	70.5	a	16.8	27.8	a	6.2	51.5	bcd	15.3	2.00	ab	0.80
10 Lallemand 2	79.3	a	13.0	10.8	b	3.8	71.3	abc	14.5	2.25	ab	0.50
11 McGregor 1	77.5	a	7.9	17.8	ab	7.6	64.3	abc	12.3	2.50	ab	0.60
12 Bayer 2	64.3	ab	12.2	27.0	a	7.9	47.8	cde	14.1	1.50	ab	0.60
13 Wilbur Ellis 1	81.8	a	4.5	19.0	ab	8.8	66.5	abc	11.0	2.00	ab	0.80
14 Wilbur Ellis 2	89.7	a	1.5	10.3	b	10.4	80.4	a	10.1	2.67	a	0.60
15 Bayer 1	69.5	a	23.2	14.5	ab	2.4	60.0	abc	21.1	2.00	ab	0.80
16 Bayer 3	69.8	a	6.7	18.3	ab	5.6	57.3	a-d	8.8	1.75	ab	0.50
Grand Mean	71.4			17.9			59.5			2.10		
ANOVA: TRT	0.0001			0.0005			0.0001			0.0019		
HSD P=.05	28.1			14.3			26.9			1.57		
SD	10.9			5.6			10.5			0.61		
CV	15.4			30.7			17.8			29.56		

TABLE 8. 2024 ISCDA Seed Treatment Trial - Results for VA-1

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	84.0	a	3.1	10.7	b	2.0	75.1	a	1.2	2.74	abc	1.50
2 Nufarm	86.5	a	3.0	9.5	b	3.4	78.5	a	5.3	3.50	abc	1.30
3 Standard	83.3	a	4.9	8.0	b	1.4	76.5	a	4.5	3.75	abc	0.50
4 Syngenta 1	84.0	a	9.0	6.5	b	1.9	78.5	a	9.5	3.75	abc	1.00
5 McGregor 2	86.5	a	2.4	7.3	b	1.3	80.3	a	2.6	4.00	ab	0.80
6 Albaugh 1	91.3	a	4.4	8.5	b	4.4	83.5	a	4.9	3.75	abc	1.00
7 Albaugh 2	83.5	a	8.7	7.3	b	2.2	77.5	a	8.4	3.75	abc	0.50
8 Germaines	81.3	a	2.1	10.4	b	1.5	72.8	a	1.7	3.40	abc	0.60
9 Lallemand 1	44.5	b	19.4	20.8	a	10.2	36.5	b	19.2	1.75	c	1.00
10 Lallemand 2	89.5	a	6.0	5.5	b	1.7	84.5	a	6.6	3.75	abc	0.50
11 McGregor 1	82.5	a	12.5	7.3	b	5.6	77.0	a	15.2	4.00	abc	1.20
12 Bayer 2	95.2	a	0.6	5.7	b	1.5	89.7	a	1.0	3.84	abc	1.00
13 Wilbur Ellis 1	89.8	a	6.3	3.8	b	1.5	86.3	a	6.7	4.75	a	0.50
14 Wilbur Ellis 2	92.8	a	6.8	7.5	b	4.9	85.8	a	9.5	4.00	ab	0.80
15 Bayer 1	21.5	c	8.5	23.5	a	4.8	16.8	b	7.7	2.50	bc	0.60
16 Bayer 3	91.3	a	6.0	7.0	b	1.4	84.5	a	5.8	4.00	ab	0.00
Grand Mean	79.7			9.5			73.3			3.55		
ANOVA: TRT	0.0001			0.0001			0.0001			0.0023		
HSD P=.05	21.4			10.0			22.5			2.09		
SD	8.3			3.9			8.8			0.81		
CV	10.4			41.7			11.9			22.65		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	30.8	c	7.6	23.0	-	16.5	24.5	cd	10.4	2.25	b	0.50
2 Nufarm	70.8	a	7.1	9.5	-	2.5	64.0	a	6.4	4.25	a	0.50
3 Standard	57.5	ab	10.9	10.8	-	3.3	51.5	ab	10.5	3.50	ab	0.60
4 Syngenta 1	60.5	a	8.3	10.8	-	3.8	54.0	ab	8.7	3.75	ab	1.00
5 McGregor 2	69.3	a	13.3	14.3	-	6.9	59.5	a	12.8	3.25	ab	0.50
6 Albaugh 1	69.5	a	7.0	12.5	-	6.4	60.8	a	7.7	3.00	ab	0.80
7 Albaugh 2	68.0	a	4.2	11.3	-	1.3	60.5	a	3.1	4.00	a	0.00
8 Germaines	39.8	bc	5.9	15.0	-	11.2	34.0	bc	7.8	2.25	b	0.50
9 Lallemand 1	6.0	d	3.7	0.0	-	0.0	6.0	d	3.7	2.75	ab	1.00
10 Lallemand 2	68.0	a	4.5	8.5	-	1.9	62.3	a	4.8	3.50	ab	0.60
11 McGregor 1	64.8	a	9.0	11.3	-	3.5	57.5	a	8.6	3.00	ab	0.00
12 Bayer 2	68.3	a	10.6	11.3	-	4.1	60.8	a	10.1	3.00	ab	0.80
13 Wilbur Ellis 1	70.5	a	2.4	11.5	-	4.7	62.5	a	4.2	3.75	ab	0.50
14 Wilbur Ellis 2	68.8	a	17.2	15.0	-	6.9	59.3	a	18.0	3.00	ab	0.00
15 Bayer 1	7.0	d	6.5	18.8	-	23.9	5.5	d	5.1	2.75	ab	1.30
16 Bayer 3	74.8	a	7.2	11.5	-	4.0	66.3	a	7.4	4.00	a	0.00
Grand Mean	54.6			12.2			48.2			3.20		
ANOVA: TRT	0.0001			0.2528			0.0001			0.0001		
HSD P=.05	19.0			22.1			20.2			1.50		
SD	7.4			8.6			7.9			0.59		
CV	13.3			70.8			16.0			18.06		

TABLE 9. 2024 ISCDA Seed Treatment Trial - Results for WA-1

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	87.6	-	2.6	1.6	-	1.5	86.4	-	3.6	5.02	-	0.00
2 Nufarm	89.3	-	8.3	1.0	-	1.4	88.5	-	9.1	4.25	-	..5
3 Standard	83.0	-	9.6	2.8	-	3.4	81.0	-	11.7	4.75	-	0.50
4 Syngenta 1	75.0	-	17.6	5.3	-	6.0	72.0	-	20.1	4.00	-	1.20
5 McGregor 2	87.5	-	8.0	0.3	-	0.5	87.0	-	7.6	4.75	-	0.50
6 Albaugh 1	89.8	-	4.9	2.8	-	3.1	87.3	-	7.5	4.75	-	0.50
7 Albaugh 2	87.9	-	6.1	1.9	-	1.7	85.9	-	5.6	4.68	-	0.60
8 Germains	79.5	-	8.9	3.5	-	3.1	76.3	-	9.7	4.75	-	0.50
9 Lallemand 1	71.0	-	22.0	3.5	-	4.0	69.0	-	23.3	4.50	-	0.60
10 Lallemand 2	91.8	-	2.2	0.3	-	0.5	91.5	-	2.5	5.00	-	0.00
11 McGregor 1	82.8	-	12.8	4.3	-	4.3	79.5	-	15.0	4.25	-	1.00
12 Bayer 2	89.3	-	4.1	1.8	-	1.5	87.8	-	5.0	4.75	-	0.50
13 Wilbur Ellis 1	84.0	-	6.6	2.0	-	2.2	82.5	-	7.2	4.50	-	0.60
14 Wilbur Ellis 2	89.8	-	1.0	1.0	-	1.4	88.8	-	1.9	5.00	-	0.00
15 Bayer 1	83.5	-	6.9	2.5	-	3.7	81.3	-	9.1	4.50	-	0.60
16 Bayer 3	86.5	-	9.6	2.8	-	4.9	84.0	-	12.8	4.75	-	0.50
Grand Mean	84.8			2.3			83.0			4.63		
ANOVA: TRT	0.2647			0.7273			0.3187			0.5377		
HSD P=.05	25.9			8.3			29.6			1.51		
SD	10.1			3.2			11.5			0.59		
CV	11.9			138.7			13.9			12.66		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	25.5	e	7.6	3.8	-	4.8	24.5	e	6.2	3.50	b	0.60
2 Nufarm	69.8	a-d	1.5	3.5	-	2.3	67.7	a-d	2.5	4.02	ab	0.00
3 Standard	76.3	abc	5.3	2.5	-	2.1	74.5	abc	4.7	4.75	ab	0.50
4 Syngenta 1	66.0	a-e	20.6	10.5	-	13.8	61.0	a-e	24.3	3.75	b	0.50
5 McGregor 2	83.7	ab	3.0	0.5	-	1.7	82.9	ab	4.6	5.02	a	0.00
6 Albaugh 1	52.3	a-e	5.9	5.5	-	8.0	50.0	a-e	9.1	4.00	ab	0.80
7 Albaugh 2	35.5	de	5.8	3.5	-	0.6	34.3	de	5.4	4.00	ab	0.00
8 Germains	34.8	de	21.4	0.0	-	0.0	34.8	de	21.4	4.00	ab	0.00
9 Lallemand 1	53.0	a-e	15.5	2.0	-	28.0	52.0	a-e	16.1	4.00	ab	0.00
10 Lallemand 2	86.8	a	4.3	0.5	-	0.6	86.3	a	3.9	4.75	ab	0.50
11 McGregor 1	73.4	abc	9.0	1.5	-	2.0	72.6	abc	9.9	4.68	ab	0.60
12 Bayer 2	41.5	cde	19.6	2.8	-	4.3	40.0	cde	18.3	4.00	ab	0.00
13 Wilbur Ellis 1	33.5	e	18.4	4.0	-	5.7	31.8	de	16.6	4.00	ab	0.00
14 Wilbur Ellis 2	50.0	a-e	21.1	3.0	-	1.4	49.0	a-e	21.1	4.25	ab	0.50
15 Bayer 1	44.5	b-e	22.5	3.8	-	2.9	42.3	b-e	20.4	4.25	ab	0.50
16 Bayer 3	63.3	a-e	3.2	3.7	-	1.2	60.8	a-e	4.0	3.98	ab	0.00
Grand Mean	55.1			3.2			53.6			4.20		
ANOVA: TRT	0.0001			0.5806			0.0001			0.0010		
HSD P=.05	35.6			13.0			36.2			1.08		
SD	13.8			5.0			14.1			0.42		
CV	25.3			153.9			26.5			10.05		

TABLE 10. 2024 ISCDA Seed Treatment Trial - Results for WI-1

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	82.3	-	8.0	3.8	b	2.8	79.3	-	9.5	4.00	-	0.80
2 Nufarm	83.5	-	7.0	6.8	ab	4.9	78.0	-	10.6	2.75	-	2.10
3 Standard	82.3	-	8.8	11.3	ab	9.7	73.5	-	15.5	3.75	-	1.50
4 Syngenta 1	86.9	-	5.9	8.4	ab	3.6	80.1	-	8.1	3.12	-	1.50
5 McGregor 2	80.9	-	3.1	9.7	ab	2.5	73.4	-	1.7	3.45	-	0.60
6 Albaugh 1	82.8	-	6.7	6.3	ab	4.3	77.5	-	7.0	4.25	-	1.00
7 Albaugh 2	88.0	-	6.1	6.0	ab	2.9	82.8	-	7.9	4.00	-	2.00
8 Germains	63.3	-	19.9	18.0	ab	8.6	52.8	-	21.1	1.75	-	1.50
9 Lallemand 1	79.3	-	11.1	8.0	ab	4.2	72.8	-	10.6	3.75	-	1.00
10 Lallemand 2	88.2	-	1.0	1.2	b	1.0	86.9	-	1.0	4.75	-	0.60
11 McGregor 1	69.9	-	6.0	14.9	ab	11.0	59.9	-	13.2	2.42	-	2.30
12 Bayer 2	85.5	-	7.9	6.8	ab	5.7	79.8	-	11.0	3.50	-	1.30
13 Wilbur Ellis 1	81.3	-	13.3	6.5	ab	4.1	76.3	-	15.6	3.75	-	1.50
14 Wilbur Ellis 2	83.6	-	2.9	6.9	ab	1.5	77.5	-	1.5	4.75	-	0.60
15 Bayer 1	63.0	-	36.3	7.0	ab	0.9	59.0	-	34.9	3.25	-	1.70
16 Bayer 3	56.8	-	24.4	22.0	a	18.9	47.5	-	29.0	2.25	-	1.90
Grand Mean	80.1			8.1			74.0			3.55		
ANOVA: TRT	0.0807			0.0234			0.0661			0.2919		
HSD P=.05	37.6			17.9			42.3			3.72		
SD	14.6			6.9			16.4			1.44		
CV	18.5			76.8			22.7			41.70		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	45.3	-	4.5	18.6	-	3.5	37.1	-	3.2	1.21	-	0.00
2 Nufarm	81.0	-	5.7	11.3	-	6.6	71.5	-	4.1	2.00	-	1.20
3 Standard	45.8	-	21.3	21.8	-	10.9	37.3	-	19.8	1.00	-	0.00
4 Syngenta 1	79.5	-	11.8	7.3	-	5.3	74.3	-	14.0	3.00	-	2.30
5 McGregor 2	68.0	-	25.0	19.5	-	19.2	58.0	-	28.6	2.25	-	1.50
6 Albaugh 1	68.3	-	1.2	17.9	-	14.3	56.4	-	10.3	2.21	-	1.00
7 Albaugh 2	79.5	-	2.3	10.7	-	7.0	71.3	-	7.6	2.73	-	2.10
8 Germains	69.0	-	16.4	10.3	-	5.4	62.0	-	16.2	2.00	-	1.20
9 Lallemand 1	55.5	-	17.9	20.5	-	12.8	46.0	-	21.2	1.50	-	1.00
10 Lallemand 2	66.5	-	21.6	15.0	-	6.6	57.3	-	1.3	2.00	-	1.40
11 McGregor 1	82.2	-	3.6	13.3	-	4.2	71.2	-	2.1	1.87	-	1.70
12 Bayer 2	73.0	-	18.6	12.5	-	9.3	65.3	-	21.8	2.00	-	1.40
13 Wilbur Ellis 1	75.2	-	5.0	11.7	-	1.0	66.7	-	4.0	1.73	-	0.60
14 Wilbur Ellis 2	78.5	-	3.9	18.3	-	4.6	64.3	-	5.0	1.50	-	1.00
15 Bayer 1	59.0	-	29.1	9.5	-	8.7	53.8	-	28.9	2.25	-	1.50
16 Bayer 3	72.8	-	9.2	12.3	-	6.4	64.3	-	12.8	2.50	-	1.30
Grand Mean	68.4			14.5			59.5			1.95		
ANOVA: TRT	0.0176			0.5618			0.0566			0.8242		
HSD P=.05	39.7			23.9			43.3			3.3		
SD	15.4			9.2			16.8			1.3		
CV	22.4			64.0			28.1			65.9		

TABLE 11. 2024 ISCDA Seed Treatment Trial - Results for WI-2

TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	NATALIE			NATALIE			NATALIE			NATALIE		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	68.8	-	5.1	13.8	ab	1.0	59.5	-	4.8	4.75	-	0.50
2 Nufarm	60.8	-	7.1	9.3	ab	3.9	55.3	-	8.2	4.50	-	0.60
3 Standard	62.0	-	9.6	10.3	ab	2.2	55.8	-	9.2	4.00	-	1.20
4 Syngenta 1	62.3	-	12.3	17.3	a	8.5	51.8	-	13.5	4.25	-	1.00
5 McGregor 2	65.5	-	5.3	6.8	b	3.4	61.3	-	4.4	4.25	-	1.00
6 Albaugh 1	69.5	-	14.3	11.8	ab	3.1	61.0	-	10.9	4.50	-	0.60
7 Albaugh 2	71.3	-	5.1	14.8	ab	1.7	60.8	-	4.6	5.00	-	0.00
8 Germaines	69.5	-	14.4	11.0	ab	2.2	62.0	-	13.5	4.75	-	0.50
9 Lallemand 1	68.8	-	6.8	12.8	ab	3.4	60.0	-	5.5	4.50	-	0.60
10 Lallemand 2	70.8	-	7.1	9.0	ab	2.0	64.3	-	6.6	5.00	-	0.00
11 McGregor 1	71.1	-	7.4	9.9	ab	3.6	64.0	-	4.5	4.77	-	0.60
12 Bayer 2	66.5	-	6.6	13.0	ab	3.2	57.8	-	5.5	4.50	-	1.00
13 Wilbur Ellis 1	67.8	-	15.9	13.5	ab	2.6	58.5	-	13.3	4.00	-	2.00
14 Wilbur Ellis 2	73.5	-	7.9	9.3	ab	6.9	66.8	-	9.1	4.50	-	0.60
15 Bayer 1	74.3	-	3.9	13.0	ab	2.9	64.5	-	4.4	4.75	-	0.50
16 Bayer 3	62.8	-	26.7	11.5	ab	6.8	54.3	-	21.6	4.25	-	1.50
Grand Mean	68.2			11.7			60.2			4.53		
ANOVA: TRT	0.8906			0.0467			0.7989			0.9451		
HSD P=.05	28.1			9.7			25.5			2.29		
SD	11.0			6.8			9.9			0.89		
CV	16.2			32.6			16.6			19.81		
TREATMENT/VAR	% STAND			% SLOWS			% ADJ. STAND			VIGOR		
	XTH1473			XTH1473			XTH1473			XTH1473		
	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD	MEAN	5%	SD
1 Control	16.5	cd	7.7	40.3	-	11.7	9.8	cd	5.4	1.25	cd	0.50
2 Nufarm	45.8	ab	3.5	36.7	-	5.7	28.9	abc	4.5	2.92	abc	0.00
3 Standard	37.3	abc	13.7	38.8	-	15.6	23.8	a-d	12.3	2.25	a-d	1.00
4 Syngenta 1	55.0	a	3.6	25.0	-	2.6	41.3	a	2.8	3.75	a	0.50
5 McGregor 2	40.3	abc	6.1	32.0	-	18.4	28.3	abc	11.1	3.50	a	0.60
6 Albaugh 1	43.0	ab	10.2	42.5	-	15.2	25.8	a-d	11.5	3.00	abc	0.80
7 Albaugh 2	44.0	ab	5.9	43.0	-	11.0	25.0	a-d	4.7	3.25	ab	0.50
8 Germaines	13.2	d	3.2	42.2	-	28.0	6.9	d	2.1	1.03	d	0.00
9 Lallemand 1	32.3	bcd	5.9	44.0	-	6.7	18.0	bcd	3.6	2.50	a-d	0.60
10 Lallemand 2	42.3	ab	12.3	30.5	-	7.3	29.3	abc	8.8	3.00	abc	0.80
11 McGregor 1	46.5	ab	11.5	39.5	-	15.3	27.0	abc	4.8	2.50	a-d	0.60
12 Bayer 2	36.0	abc	6.5	36.3	-	6.1	22.8	a-d	3.2	2.25	a-d	0.50
13 Wilbur Ellis 1	47.0	ab	8.0	31.5	-	6.8	32.3	ab	6.2	3.25	ab	1.00
14 Wilbur Ellis 2	50.3	ab	3.9	32.8	-	10.2	34.0	ab	7.5	3.25	ab	0.50
15 Bayer 1	27.9	bcd	2.1	37.2	-	10.0	17.2	bcd	3.1	1.69	bcd	0.60
16 Bayer 3	33.0	bcd	14.0	37.3	-	1.0	20.8	bcd	9.0	2.25	a-d	1.00
Grand Mean	38.5			36.8			24.7			2.63		
ANOVA: TRT	0.0001			0.7578			0.0001			0.0001		
HSD P=.05	20.9			31.9			19.0			1.70		
SD	8.1			12.4			7.4			0.66		
CV	21.1			33.8			29.9			25.03		

TABLE 12. 2024 ISCDA Seed Treatment Trial - Results for BOTH VARIETIES Across Locations, with and without VA-1													
		% STAND		% SLOWS		% ADJ. STAND		VIGOR		% STAND		% SLOWS	
TREATMENT/VAR		BOTH		BOTH		BOTH		BOTH		BOTH		BOTH	
		MEAN		MEAN		MEAN		MEAN		MEAN	no VA-1	MEAN	no VA-1
1	Control	50.4	e	14.9	a	44.4	d	2.70	c	49.9	f	14.4	a
2	Nufarm	69.0	bcd	9.7	bc	63.1	bc	3.18	abc	67.3	bcd	9.8	ab
3	Standard	68.8	bcd	12.4	abc	61.4	bc	3.29	ab	68.5	a-d	13.0	ab
4	Syngenta 1	72.6	abc	10.7	abc	65.4	abc	3.50	ab	72.7	ab	11.0	ab
5	McGregor 2	73.4	ab	10.5	bc	66.7	ab	3.44	ab	72.5	ab	10.5	ab
6	Albaugh 1	66.6	bcd	10.8	abc	60.0	bc	3.45	ab	64.2	bcd	10.9	ab
7	Albaugh 2	66.6	bcd	12.6	abc	59.0	c	3.48	ab	65.0	bcd	13.2	ab
8	Germaines	54.4	e	13.5	ab	48.2	d	2.73	c	54.0	ef	13.5	ab
9	Lallemmand 1	57.2	e	13.3	ab	50.2	d	2.99	bc	62.6	de	13.8	ab
10	Lallemmand 2	76.5	a	8.7	c	70.7	a	3.61	a	76.2	a	9.0	b
11	McGregor 1	72.1	a-d	11.7	abc	64.4	abc	3.24	abc	71.9	abc	12.1	ab
12	Bayer 2	65.5	d	10.3	bc	59.5	c	3.17	abc	63.4	cd	10.5	ab
13	Wilbur Ellis 1	66.6	bcd	9.9	bc	60.4	bc	3.46	ab	64.3	bcd	10.3	ab
14	Wilbur Ellis 2	70.5	a-d	10.0	bc	63.8	abc	3.46	ab	68.7	a-d	9.8	ab
15	Bayer 1	54.9	e	12.6	abc	49.4	d	3.06	abc	61.9	de	11.1	ab
16	Bayer 3	65.9	cd	12.3	abc	58.9	c	3.15	abc	62.9	d	12.8	ab
Grand Mean		65.7		11.4		59.1		3.25		65.5		11.5	
ANOVA: TRT		0.0001		0.0001		0.0001		0.0001		0.0001		0.0001	
ANOVA: TRTxTRIAL		0.0001		0.0028		0.0001		0.0006		0.0001		0.0371	
HSD P=.05		6.9		4.2		7.0		0.60		8.8		5.2	
SD		10.6		6.5		10.8		0.80		11.0		6.5	
CV		16.0		56.8		18.2		24.38		16.7		55.9	

TABLE 13. 2024 ISCDA Seed Treatment Trial - Results for NATALIE Across Locations, with and without VA-1																	
		% STAND		% SLOWS		% ADJ. STAND		VIGOR		% STAND		% SLOWS		% ADJ. STAND		VIGOR	
TREATMENT/VAR		NATALIE		NATALIE		NATALIE		NATALIE		NATALIE		NATALIE		NATALIE		NATALIE	
		MEAN		MEAN		MEAN		MEAN		MEAN	no VA-1	MEAN	no VA-1	MEAN	no VA-1	MEAN	no VA-1
1	Control	73.0	bcd	8.8	a-d	66.9	b-e	3.79	-	71.6	-	8.5	ab	65.9	b	3.97	-
2	Nufarm	77.9	abc	6.9	b-e	72.9	a-d	3.60	-	76.4	-	6.5	ab	72.0	ab	3.63	-
3	Standard	75.4	a-d	8.2	a-e	69.3	b-e	3.94	-	74.0	-	8.2	ab	68.0	ab	3.98	-
4	Syngenta 1	76.8	abc	8.6	a-e	70.5	a-d	3.89	-	75.5	-	9.0	ab	69.0	ab	3.92	-
5	McGregor 2	78.2	abc	5.3	de	73.9	abc	3.98	-	76.6	-	5.0	b	72.8	ab	3.97	-
6	Albaugh 1	77.8	abc	7.6	a-e	71.9	a-d	4.13	-	75.5	-	7.5	ab	69.9	ab	4.20	-
7	Albaugh 2	78.2	abc	8.7	a-d	71.8	a-d	3.96	-	77.3	-	9.0	ab	70.8	ab	4.00	-
8	Germaines	72.6	cd	10.7	a	65.1	cde	3.54	-	71.6	-	10.7	a	64.2	b	3.58	-
9	Lallemand 1	70.9	cd	10.6	ab	64.0	de	3.63	-	75.3	-	9.0	ab	68.6	ab	4.00	-
10	Lallemand 2	83.3	a	4.9	e	79.2	a	4.33	-	82.3	-	4.7	b	78.3	a	4.45	-
11	McGregor 1	77.6	abc	7.0	a-e	72.4	a-d	3.80	-	76.7	-	7.0	ab	71.5	ab	3.75	-
12	Bayer 2	80.0	abc	6.3	cde	75.1	ab	4.11	-	78.0	-	6.5	ab	73.2	ab	4.13	-
13	Wilbur Ellis 1	77.2	abc	6.3	cde	72.8	a-d	4.23	-	75.1	-	6.8	ab	70.6	ab	4.13	-
14	Wilbur Ellis 2	82.0	ab	7.0	a-e	76.4	ab	4.24	-	80.2	-	7.0	ab	74.8	ab	4.29	-
15	Bayer 1	66.5	d	10.5	ab	60.5	e	3.67	-	74.0	-	8.3	ab	67.8	ab	3.90	-
16	Bayer 3	76.8	abc	9.9	abc	70.0	a-e	3.71	-	74.3	-	10.4	a	67.4	ab	3.65	-
Grand Mean		76.5		7.8		70.8		3.92		76.0		7.6		70.5		3.99	
ANOVA: TRT		0.0001		0.0001		0.0001		0.0219		0.0680		0.0001		0.0026		0.1135	NS
ANOVA: TRTxTRIAL		0.0001		0.0001		0.0001		0.0498		0.0010		0.0004		0.0019		0.3448	NS
HSD P=.05		9.4		3.8		9.8		0.90		11.8		4.7		12.3		1.10	
SD		10.1		4.1		10.6		0.90		10.4		4.2		10.8		0.90	
CV		13.2		51.8		14.8		22.09		13.7		53.8		15.4		21.96	

TABLE 14. 2024 ISCDA Seed Treatment Trial - Results for XTH1473 Across Locations, with and without VA-1													
		% STAND		% SLOWS		% ADJ. STAND		VIGOR		% STAND		% SLOWS	
TREATMENT/VAR		XTH1473		XTH1473		XTH1473		XTH1473		XTH1473		XTH1473	
		MEAN		MEAN		MEAN		MEAN		MEAN	no VA-1	MEAN	no VA-1
1	Control	29.4	f	20.5	a	23.6	h	1.72	d	29.2	d	20.0	-
2	Nufarm	59.5	bc	12.8	b	52.5	a-d	2.73	ab	57.4	abc	13.4	-
3	Standard	62.0	abc	16.9	ab	53.2	a-d	2.61	abc	62.7	ab	17.9	-
4	Syngenta 1	68.7	ab	12.6	b	60.6	ab	3.13	a	70.1	a	12.9	-
5	McGregor 2	68.6	ab	15.7	ab	59.5	ab	2.93	ab	68.5	a	16.0	-
6	Albaugh 1	55.0	c	14.2	ab	47.7	cde	2.70	ab	52.4	bc	14.5	-
7	Albaugh 2	54.5	c	16.7	ab	45.7	def	3.00	ab	52.0	bc	17.7	-
8	Germaines	36.2	ef	16.2	ab	31.3	gh	1.91	cd	35.6	d	16.4	-
9	Lallemmand 1	43.5	de	15.9	ab	36.3	fg	2.35	bcd	49.8	bc	18.6	-
10	Lallemmand 2	70.0	a	12.4	b	62.4	a	2.92	ab	70.3	a	13.1	-
11	McGregor 1	66.7	ab	16.3	ab	56.5	abc	2.68	ab	67.0	a	17.3	-
12	Bayer 2	52.1	cd	14.0	ab	45.0	def	2.31	bcd	49.4	c	14.4	-
13	Wilbur Ellis 1	55.5	c	13.6	ab	47.5	cde	2.65	ab	52.9	bc	13.9	-
14	Wilbur Ellis 2	59.0	bc	13.0	ab	51.1	bcd	2.67	ab	57.3	abc	12.6	-
15	Bayer 1	43.0	de	14.8	ab	37.9	efg	2.43	abc	49.3	c	14.1	-
16	Bayer 3	55.0	c	14.6	ab	47.9	cde	2.57	abc	51.6	bc	15.1	-
Grand Mean		54.9		15.0		47.4		2.58		54.9		15.5	
ANOVA: TRT		0.0001		0.0371		0.0001		0.0001		0.0001		0.0354	
ANOVA: TRTxTRIAL		0.0001		0.2279	NS	0.0001		0.0195		0.0001		0.2796	NS
HSD P=.05		10.2		7.6		10.2		0.70		13.1		9.3	
SD		11.0		8.2		11.0		0.70		11.5		8.2	
CV		19.9		55.0		23.1		27.54		20.9		52.9	

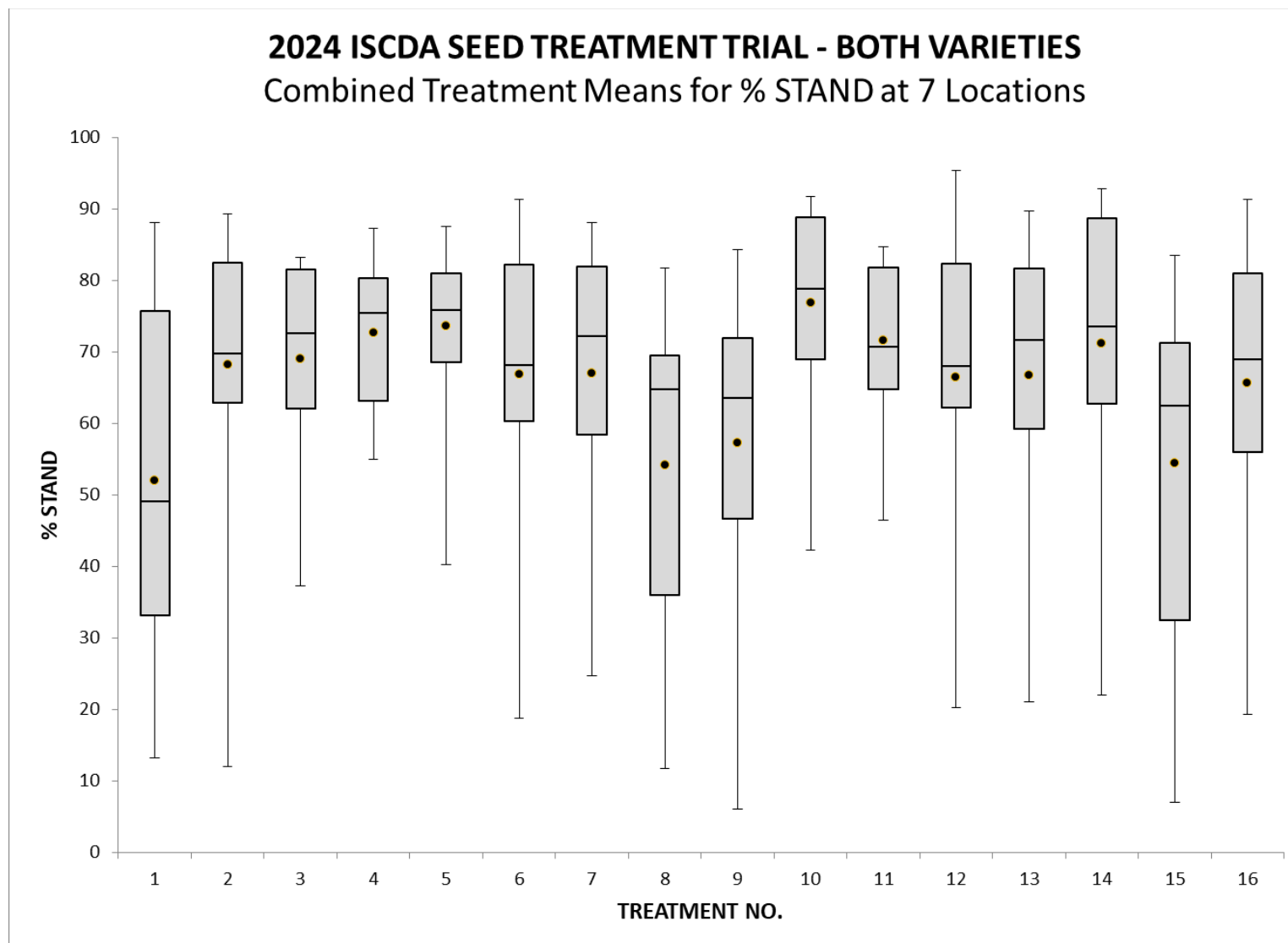


FIGURE 1. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for BOTH SWEET CORN VARIETIES at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

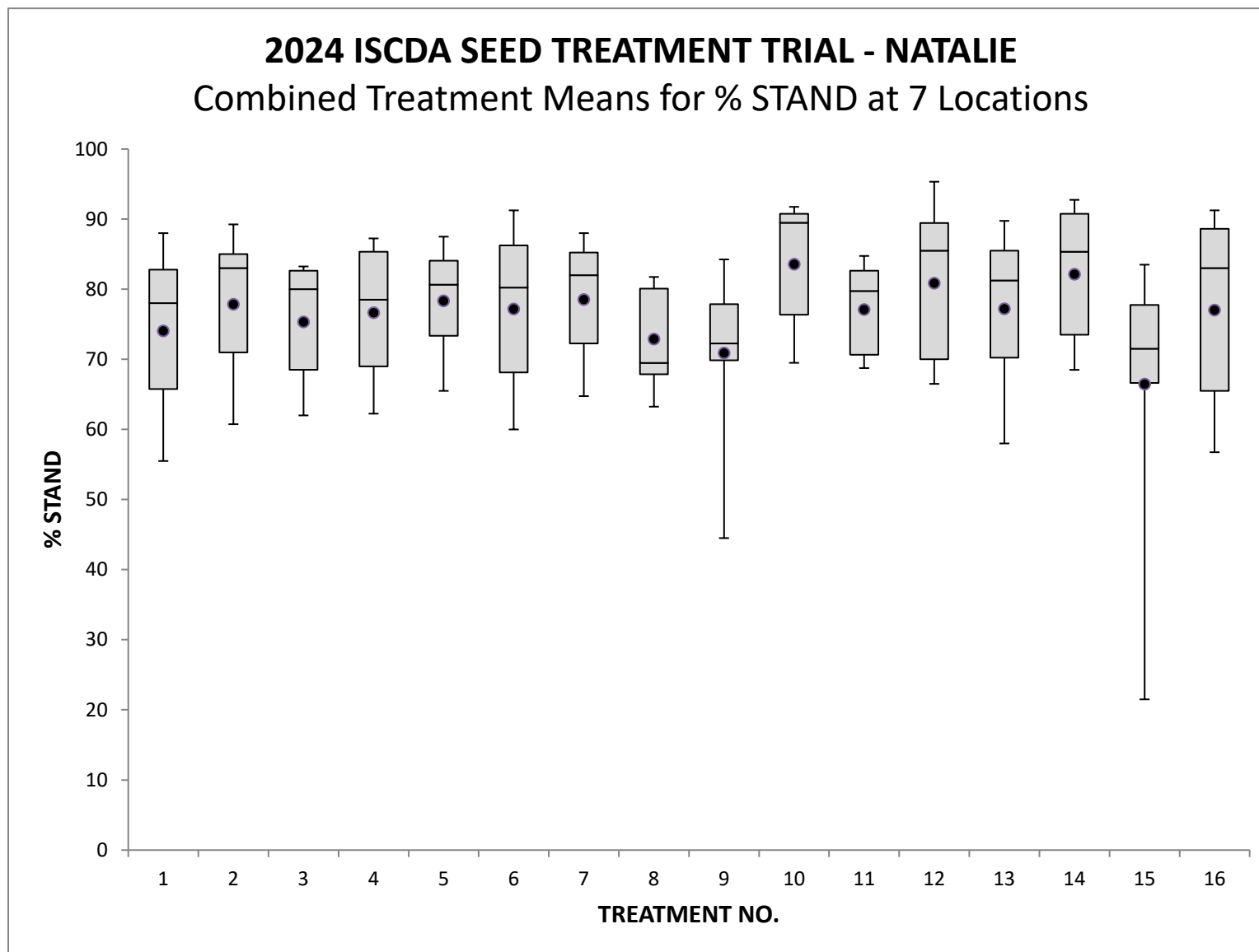


FIGURE 2. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for NATALIE at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

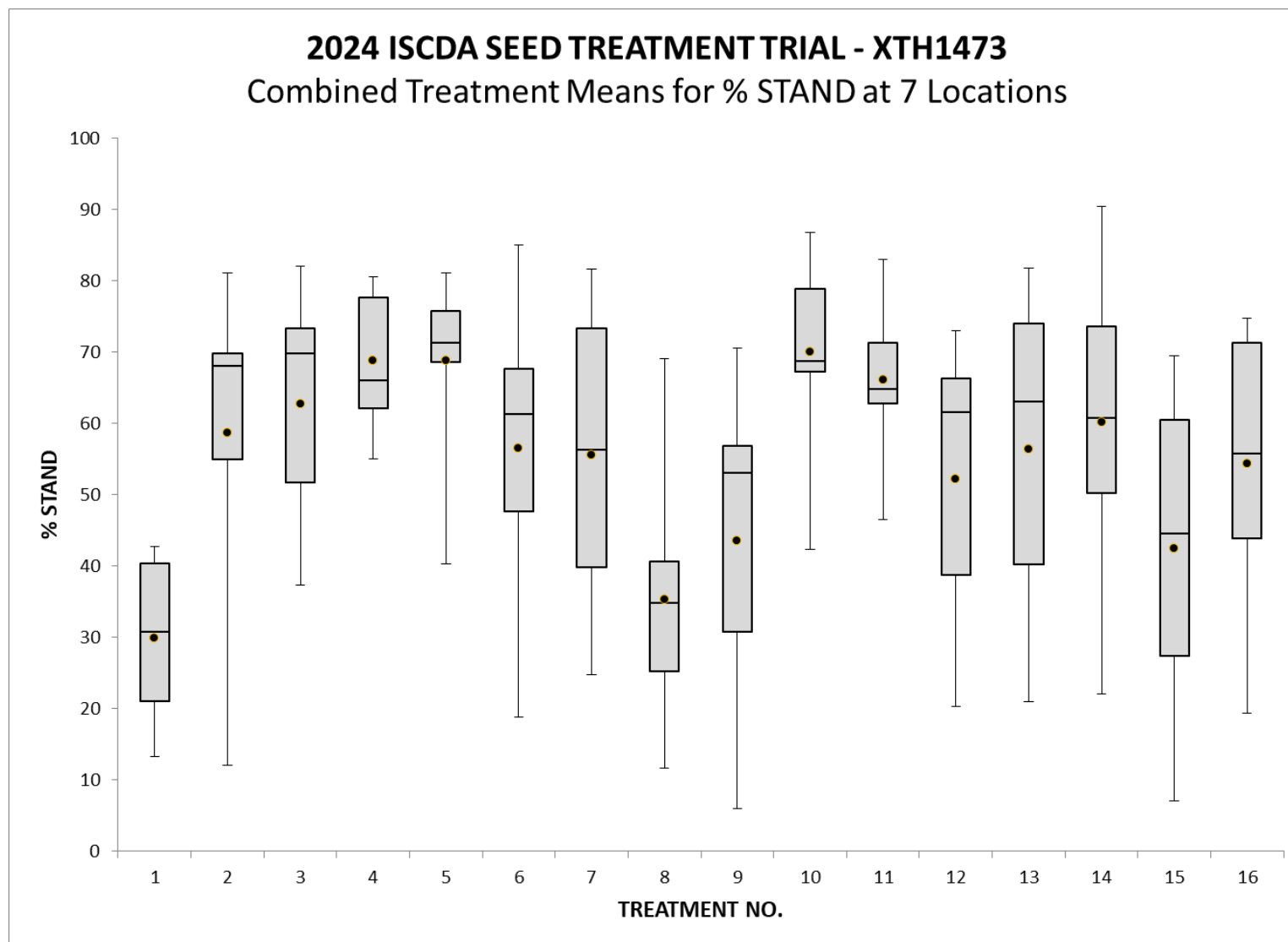


FIGURE 3. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for XTH1473 at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

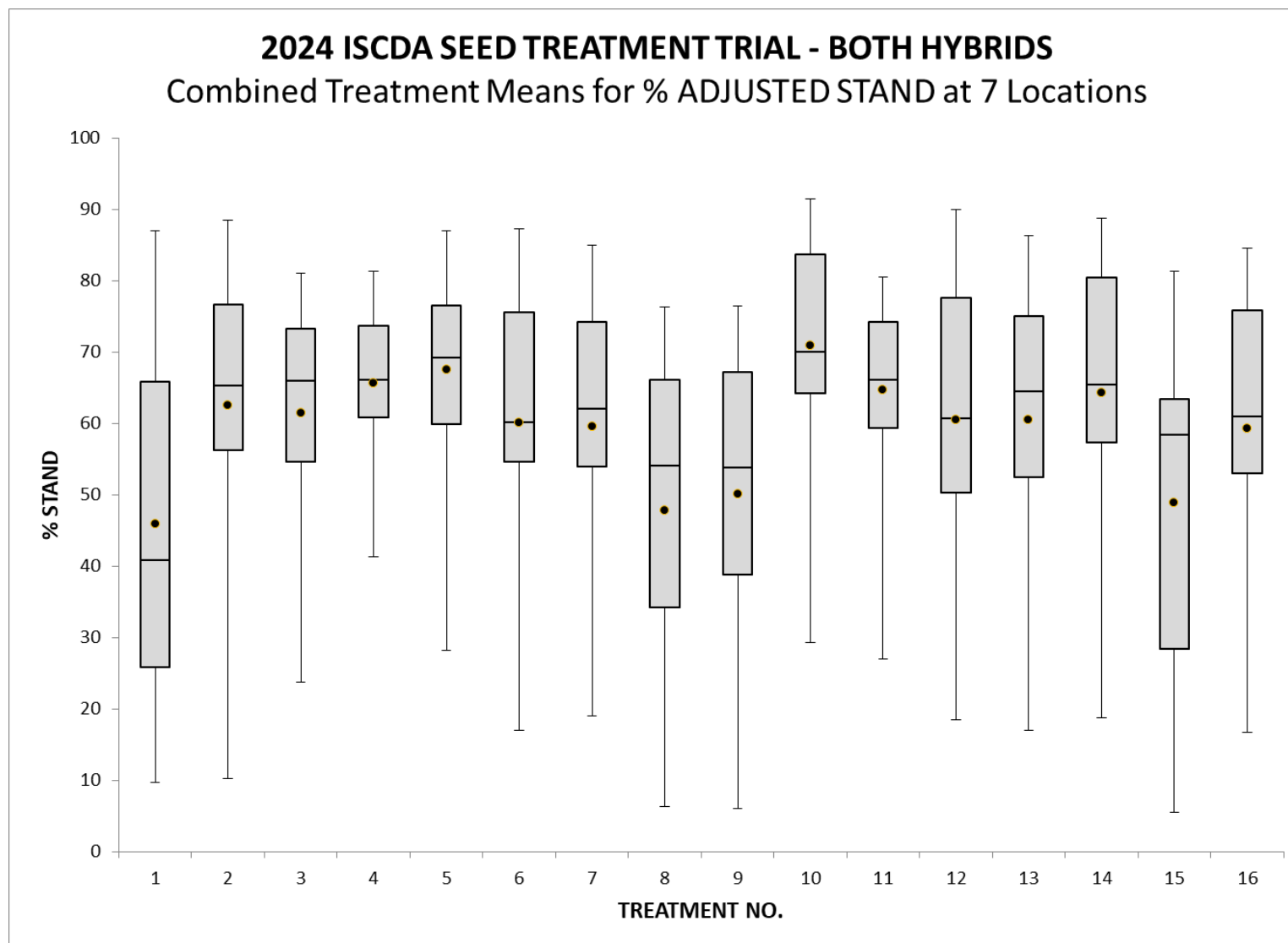


FIGURE 4. 2024 ISDA Seed Treatment Trial – Box and whisker plot of combined treatment means for ADJUSTED % STAND for BOTH VARIETIES at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

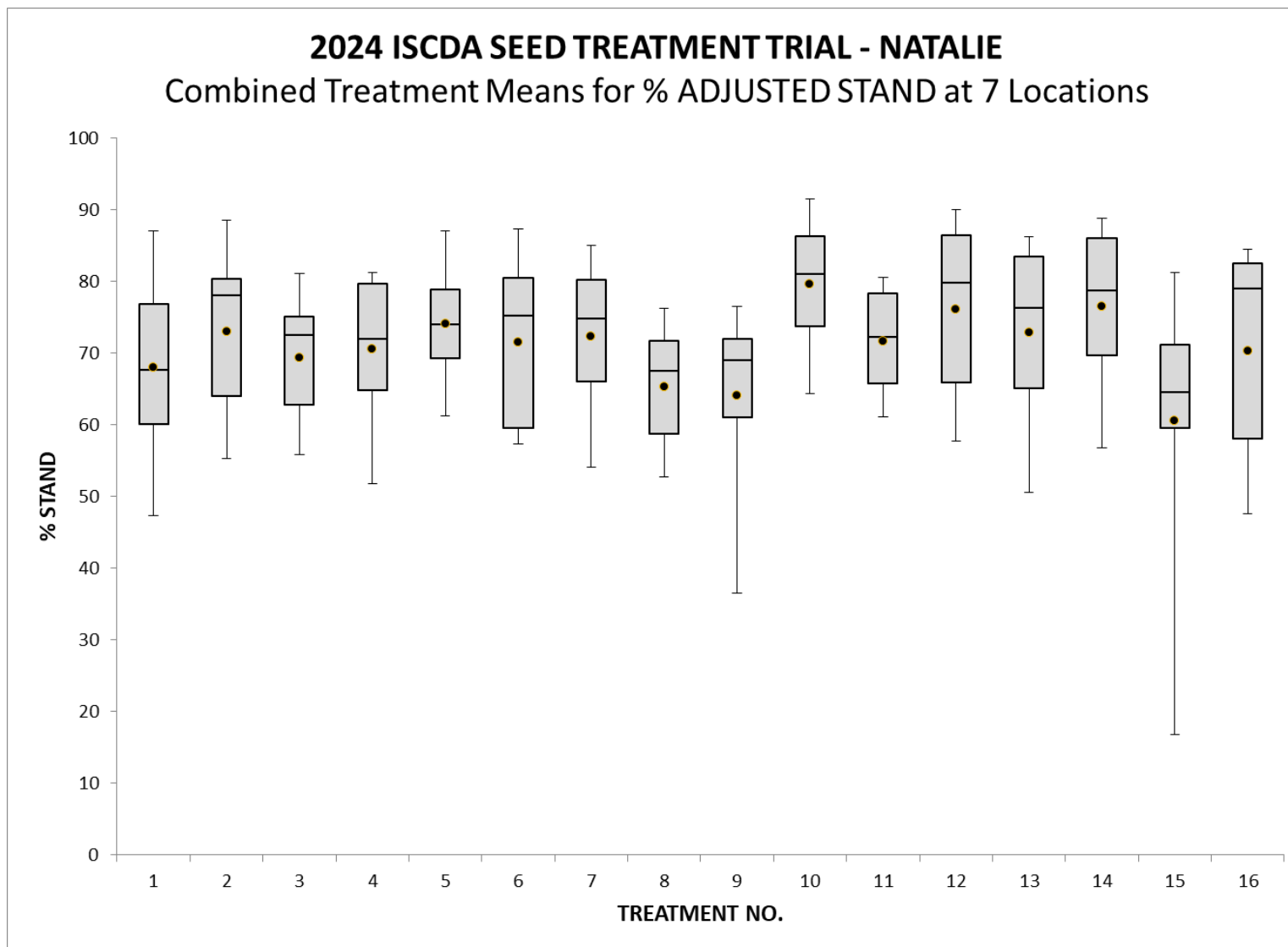


FIGURE 5. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for ADJUSTED % STAND for NATALIE at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

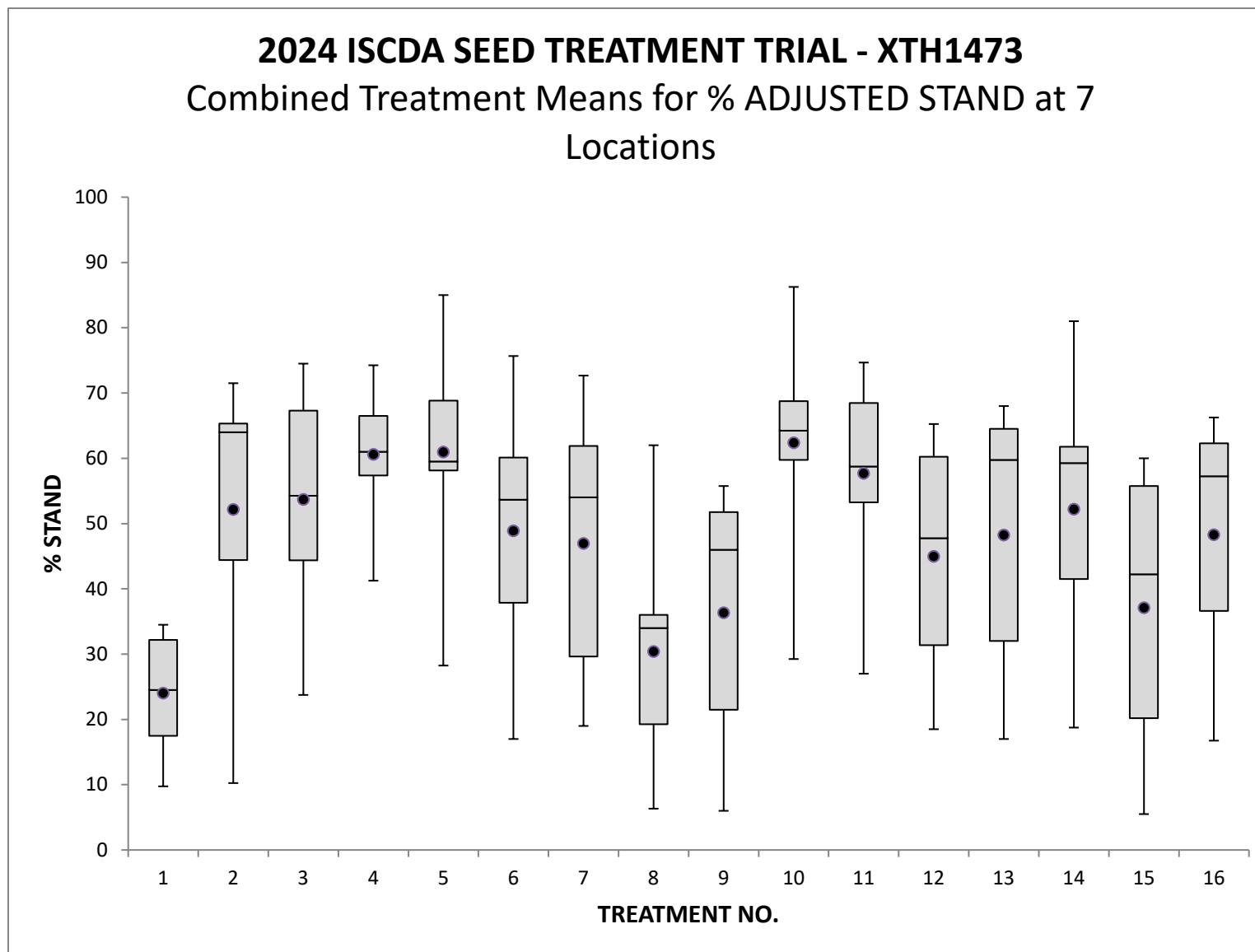


FIGURE 6. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for ADJUSTED % STAND for XTH1473 at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

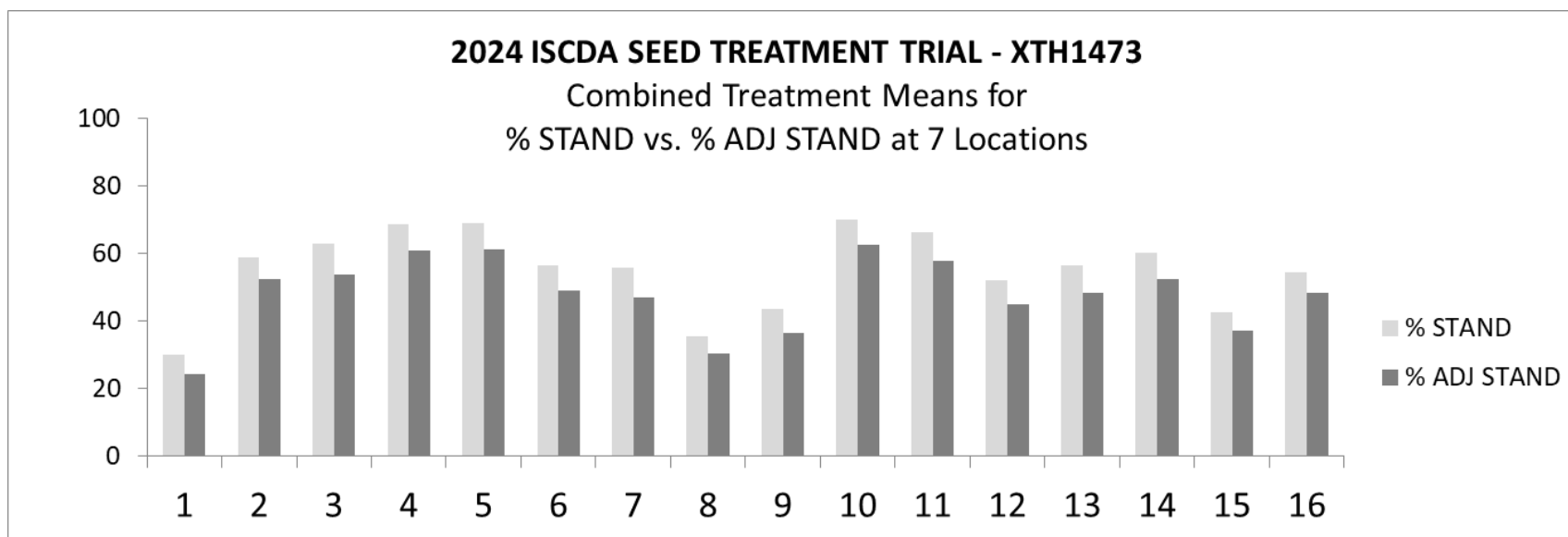
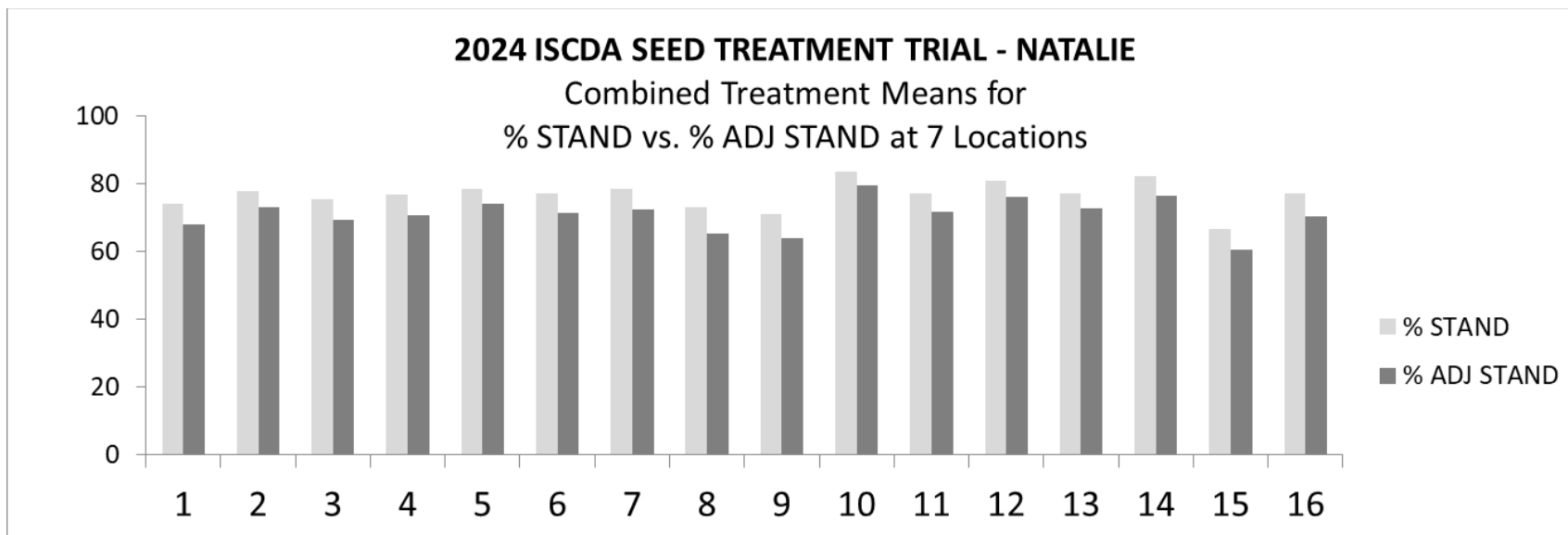


FIGURE 7. 2024 ISCDA Seed Treatment Trial – Combined treatment means for % STAND VERSUS ADJUSTED % STAND for NATALIE and XTH1473 at 7 locations (ID-1, ID-2, IL-1, VA-1, WA-1, WI-1, WI-2).

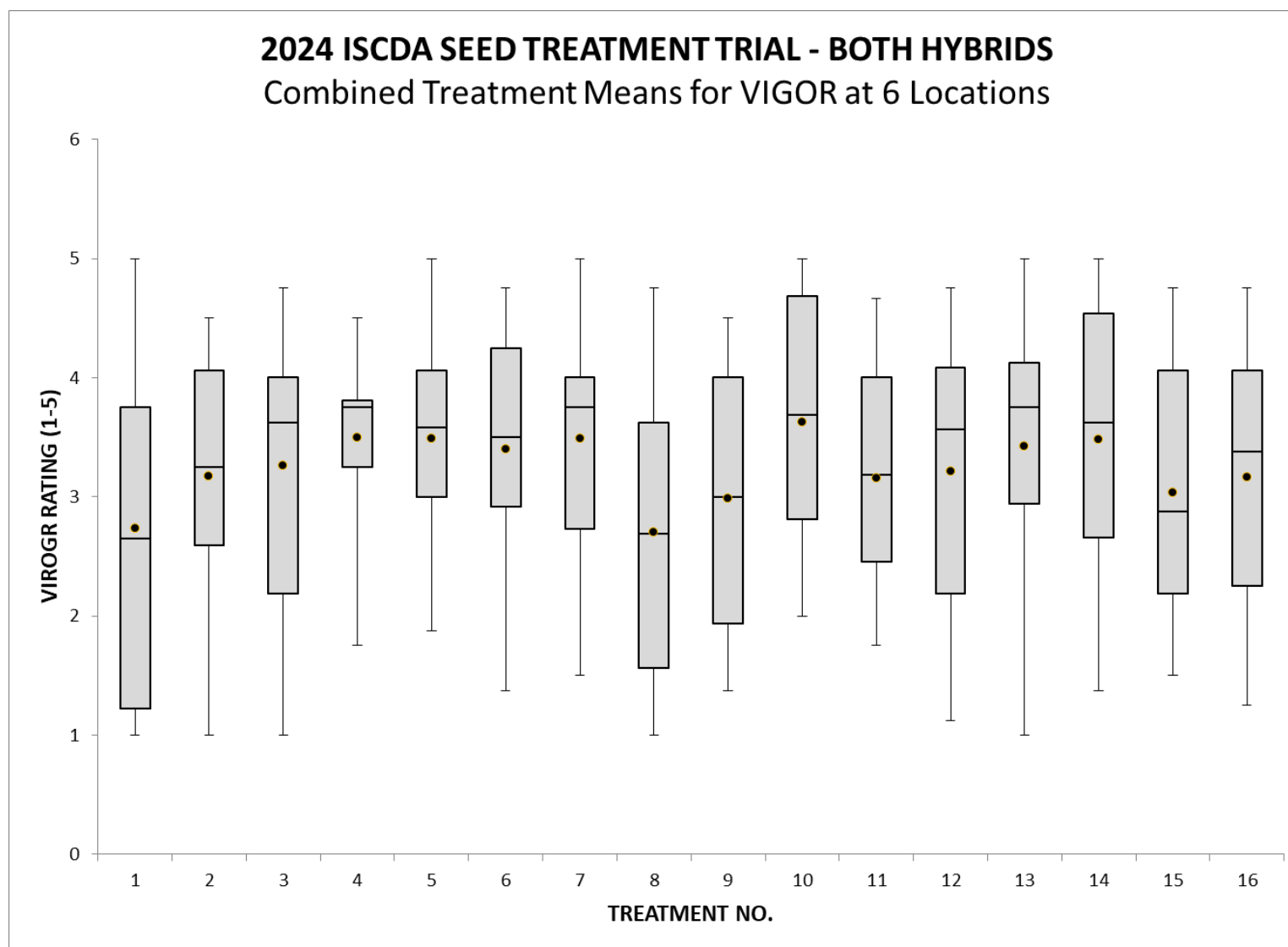


FIGURE 8. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for BOTH VARIETIES at 6 locations (ID-2, IL-1, VA-1, WA-1, WI-1, WI-2) (not ID-1). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

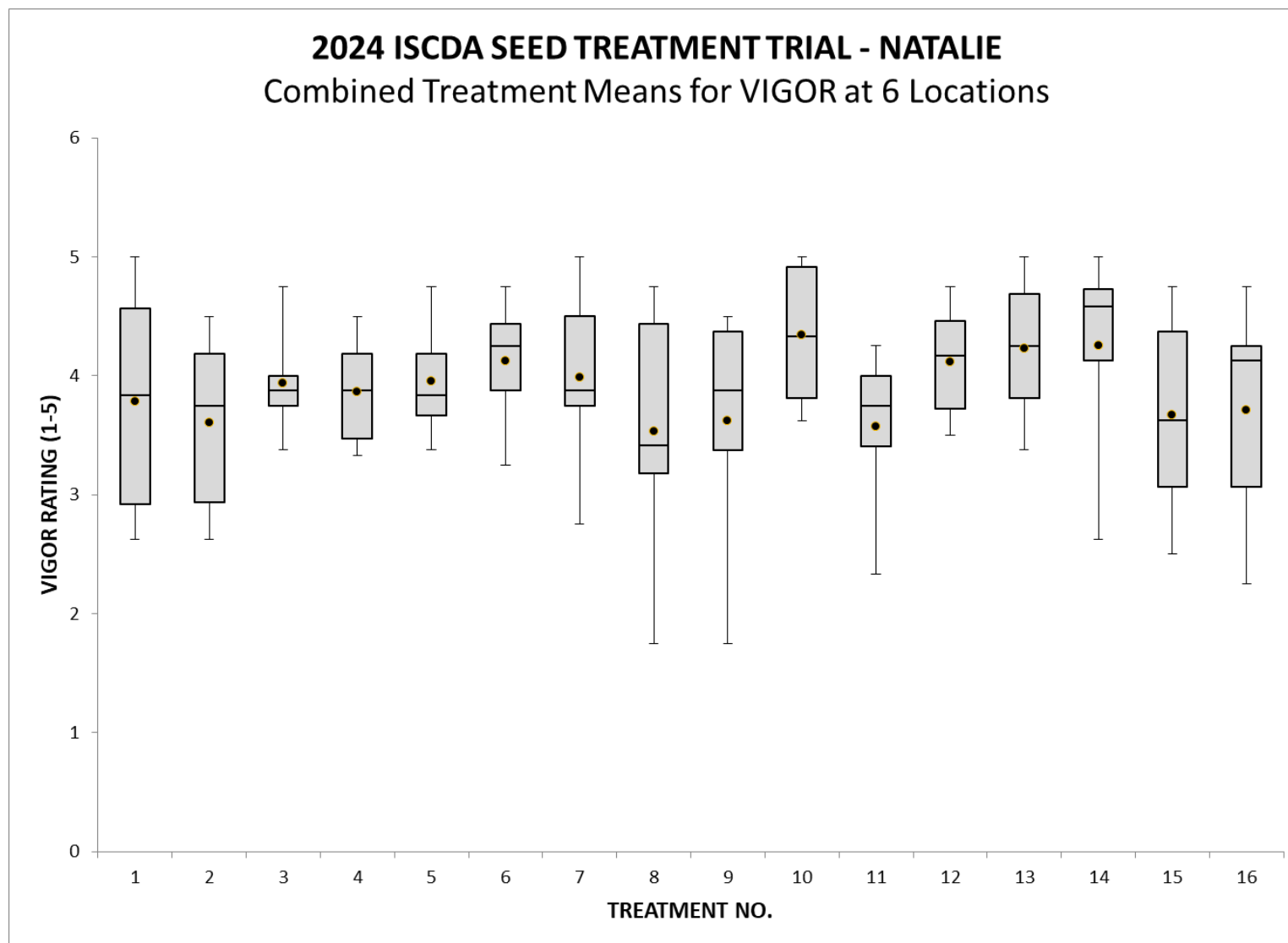


FIGURE 9. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for NATALIE at 6 locations (ID-2, IL-1, VA-1, WA-1, WI-1, WI-2) (not ID-1). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

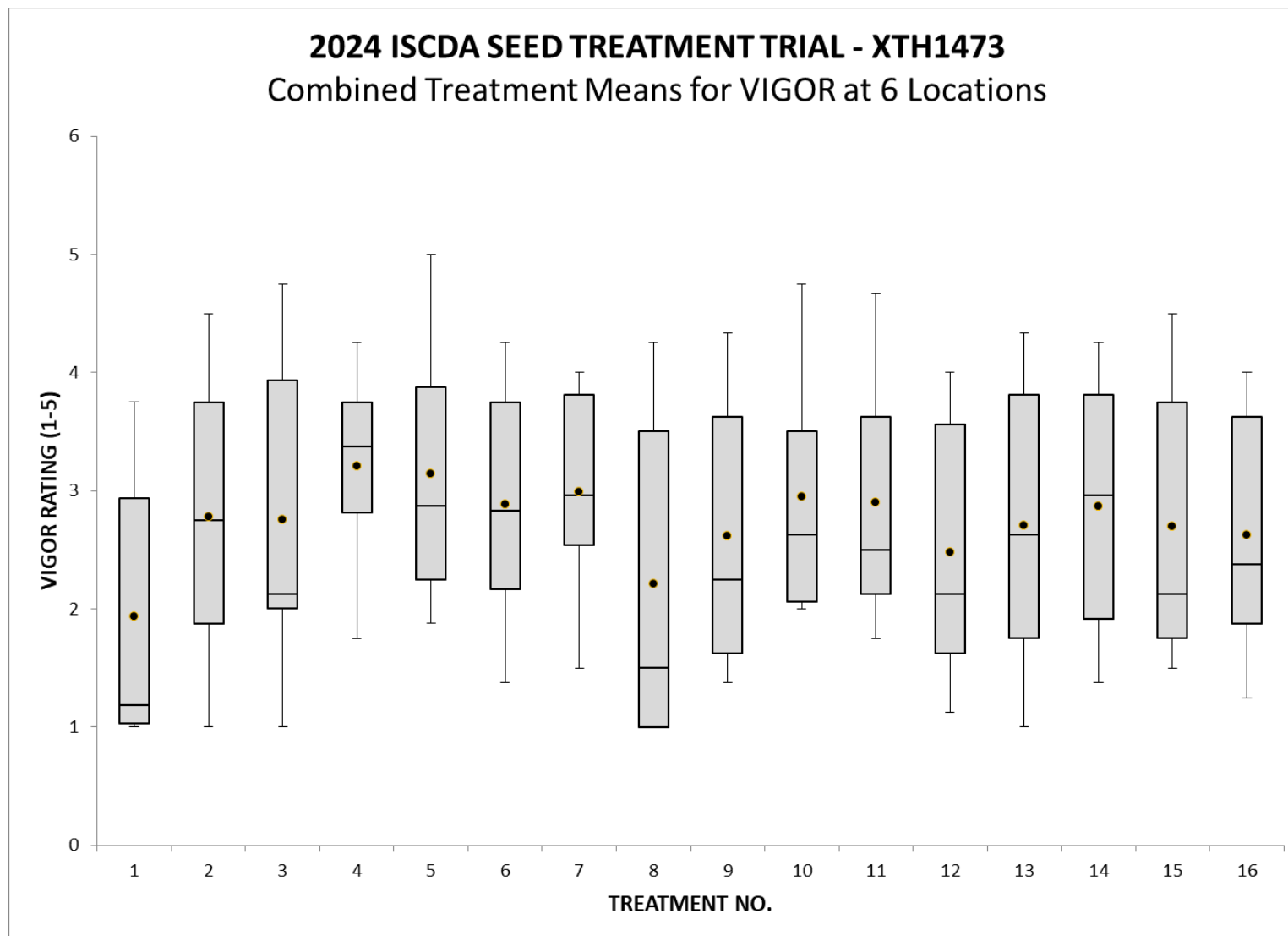


FIGURE 10. 2024 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for XTH1473 at 6 locations (ID-2, IL-1, VA-1, WA-1, WI-1, WI-2) (not ID-1). The mean for each treatment is indicated by •. The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

