ANNUAL REPORT
ISCDA MULTI-LOCATION SWEET CORN SEED TREATMENT TRIAL – 2016

INTRODUCTION

The Seed Treatment Committee of the International Sweet Corn Development Association (ISCDA) organizes a trial every year to compare seed treatments for sweet corn planted at locations across the country. In 2016, the committee set up a comparison of 14 seed treatments on two *sh2* sweet corn varieties, Super Sweet Jubilee Plus and Marquette. This report includes the results from the trials conducted at twelve locations in 2016

METHODS

A non-treated control and 14 seed treatments were evaluated using two sweet corn seed lots: Super Sweet Jubilee Plus (*sh2*) (warm germ. 91%, vigor 73%) and Marquette (*sh2*) (warm germ. 99%, vigor 69%). Most of the seed treatments were mixtures of fungicide products, and some of the treatments included insecticides and/or seed enhancement products. There were also some undisclosed treatments. A list of the seed treatments is provided in Table 1 on pages 7 & 8. The seed treatments were entered in the trial by: Albaugh LLC.; The McGregor Company; Nufarm Americas, Inc.; Syngenta Crop Protection, LLC; and Valent USA Corporation. The committee also selected two standard seed treatment mixtures for comparison. Most of the treatments were applied to the seeds at a facility owned and operated by The McGregor Company, but the treatments entered by Syngenta were applied at their facility in Stanton, MN. Sets of the treated seeds were packaged and sent to cooperating researchers at twelve locations in eight states (CA, FL, ID, IL, MN, NY, WI, and WA) for planting and evaluation. A list of locations, planting dates, and cooperating researchers is on page 9 of this report. The experimental design at each location varied, but all sites established randomized plots with at least four replications. Planting dates ranged from late January to mid- May. Stand counts, weak plant counts, and vigor ratings were recorded in each plot, usually at the 5-6 leaf stage. Weak plants were defined as plants that were two or more leaves behind the average seedlings in the plot, and are reported as the % slows, which was calculated by dividing the number of weak plants by the number of emerged plants. An adjusted % stand was also calculated by subtracting the number of weak plants from the number of emerged plants. Vigor ratings were on a qualitative visual scale of 1-5 (1=extremely weak, 2=weak, 3=fair, 4=vigorous, 5=very vigorous).

ANALYSIS: Data from individual plots where the % stand results were less than or greater than 1.5 times the interquartile range were considered outliers and were excluded from the data set. Results for each variety at each location were subjected to analysis of variance (ANOVA) and a pairwise comparison of treatment means using the Fisher's protected least significant difference method, LSD (P=0.05). The results were pooled across trial locations and analyzed for both of the varieties together, then SS Jubilee trials only, and then Marquette trials only. The combined results were analyzed with ANOVA to evaluate treatment effects, and location x treatment interactions. Data were analyzed using ARM 9 and ARM ST 8 software from Gylling Data Management, Inc.

RESULTS

A short summary of the results is provided on page 6 of this report and is followed by tables and charts showing all results.

RESULTS – SOIL PATHOGEN ASSAYS

Soil samples were assayed for Fusarium and Pythium species by the Oregon State University Extension Plant Pathology Laboratory in Hermiston, Oregon. The lab plated samples on culture media and counted colonies. Soil samples from the FL-1, ID-2, ID-3, and WA-1 locations were analyzed.

LOCATION	**Pythium species** (CFU/g dry soil)	**Metalaxyl resistant Pythium species** (CFU/g dry soil)	**Fusarium species** (CFU/g dry soil)
FL-1	16	0	1346
ID-2	91	0	1598
ID-3	22	0	1034
WA-1	0	0	326

RESULTS - % STAND

The treatment means for % stand at each location and for both varieties are shown in Table 2 a-d. The % stand results summarized across locations are shown in Table 3. There are also three box and whisker graphs showing the distribution of treatment means for % stand averaged across locations for both varieties, for SS Jubilee Plus only, and for Marquette only (Figures 1-3).

LOCATIONS: Six locations resulted in significant treatment effects for % stand with both SS Jubilee Plus and Marquette (CA-1, ID-1, ID-4, MN-1, WI-2 and WA-1). There were significant interactions of variety x treatment when the results for % stand at ID-4, MN-1, WI-2, and WA-1 were paired for both varieties in the ANOVAs (not shown). This indicates that SS Jubilee Plus and Marquette responded differently to some of the treatments despite being planted at the same locations. The differences may be due to the presence of different pathogens in and on the two seed lots, and may also be explained by variety differences in susceptibility to pathogens. On the other hand, the CA-1 and ID-1 locations had similar % stand results with both varieties.

Most of the locations had reasonably small variation in the data sets for % stand (i.e., coefficients of variation (CV) were less than 15%). The locations with the most variable % stand results were ID-2 and WA-1.

BOTH VARIETIES: The non-treated control and Treatment 11 resulted in the lowest % stand when averaged across 12 locations and both varieties, with 50.0% and 58.9% stands respectively. Treatment 11 included undisclosed ingredients. Treatments 5, 7, and 8 were the highest ranking treatments for % stand in the summary across all locations with both varieties (65.7%, 65.5%, and 65.3% respectively). These treatments were entered by Valent or Syngenta Crop Protection, and they each included multiple fungicide active ingredients and an insecticide. The two standards (Treatments 2 and

3) both averaged 61.6% stands across locations and varieties. With the exception of Treatments 5, 7, 8, 9 and 11, the other seed treatments resulted in combined treatment means for % stand that were similar to those of the two standard treatments.

SS JUBILEE PLUS: Grand means for % stand at the various locations ranged from 30.2% (WI-2) to 72.3% (FL-1), and averaged 51.0%. The ANOVAs indicated significant treatment effects for % stand at 11 of 12 locations planted with SS Jubilee Plus. The CA-1 location showed the greatest range in results, with non-treated seed resulting in 3% stands and the highest ranking seed treatment with 61% stands.

The non-treated control resulted in the smallest stand count for SS Jubilee Plus when analyzed across 12 locations (33.8%). Treatment 11 was the lowest ranking seed treatment for % stand at most locations, with stands averaging 47.5% in the summary across locations for SS Jubilee Plus. It resulted in a lower stand than most of the other treatments, except for Treatment 2 (48.5%). Treatment 5 resulted in the largest stand count in the combined results for SS Jubilee Plus (55.1%), but it was comparable to several other treatments that averaged 54.6% to 52.8% stands in the summary across locations. The two standard seed treatments (Treatments 2 and 3) resulted in combined treatment means for % stand of 48.5% and 52.1% respectively; the stand for Treatment 3 was significantly greater than for Treatment 2.

MARQUETTE: Grand means for % stand at the various locations ranged from 47.9% (ID-1) to 90.3% (FL-1), and averaged 73.9%. The ANOVAs indicated significant treatment effects for % stand at 6 of 12 locations planted with Marquette. The CA-1 location showed the greatest range in results, with non-treated seed resulting in 52% stands and the highest ranking seed treatment with 86% stands.

The non-treated control resulted in the smallest stand count for Marquette when averaged across 12 locations (66.1%). Treatment 11 was the lowest ranking seed treatment for % stand in the summary across locations for Marquette (70.3%), but it was an improvement over the non-treated control and was comparable to one of the standards (Treatment 3 – 71.2%) and Treatment 12 (72.5%). Treatments 5 and 7 resulted in the largest stand counts (77.2% and 77.0%, respectively) in the combined results for Marquette, and they were a significant improvement over Treatment 3 (Standard 2 – 71.2%) but not Treatment 2 (Standard 1 – 75.2%). The stand for Treatment 2 was significantly greater than for Treatment 3.

RESULTS - % SLOWS

Weak plant assessments were intended to account for plants that emerged, but probably would not produce useable ears. Table 4 a-d presents the treatment means for % slows at each location for both varieties. Weak plants were not assessed at the NY-1 or WI-2 locations.

BOTH VARIETIES: Five of 10 locations planted with SS Jubilee Plus and only 2 of 10 locations planted with Marquette had significant treatment differences for % slows. All of the locations had a lot of variation within the data sets for % slows, which was indicated by CVs that were all > 15%. SS Jubilee Plus averaged more weak plants than Marquette.

SS JUBILEE PLUS: Grand means for % slows at the 10 locations with SS Jubilee Plus ranged from 3.9% (ID-2) to 28.4% (WI-1). The ID-2, ID-3, IL-1, MN-1, and WI-1 locations had significant treatment differences for % slows with SS Jubilee Plus.

MARQUETTE: Grand means for % slows at the 10 locations with Marquette ranged from 2.3% (ID-3) to 10.3% (ID-4). Only the CA-1 and WI-1 locations had significant treatment differences for % slows with Marquette.

RESULTS - ADJUSTED % STAND

The adjusted % stand in each plot was calculated to account for seeds that did not emerge and seedlings that were weak and not likely to produce usable ears. Table 5 a-d presents the treatment means for adjusted % stand for each treatment at each location for both varieties. Combined treatment means for adjusted % stand in various groupings of the results across locations are shown in Table 6. The NY-1 and WI-2 locations did not report % slows, so adjusted % stand could not be calculated.

BOTH VARIETIES: The non-treated control had the lowest adjusted % stand result at most locations, with a 45.1% adjusted stand in the summary across locations and varieties. Treatment 11 had the lowest ranking adjusted stand count among the seed treatments at 54.5%, but was not significantly different from the counts for Treatments 4 (56.1%) and 6 (56.7%) across trials. Treatment 11 was the only treatment that had a significantly lower adjusted stand count in the summary when compared to the two standard treatments that averaged adjusted stand counts of 58.5% and 58.9% respectively.

SS JUBILEE PLUS: Grand means for adjusted % stand at the 10 locations ranged from 29.9% (ID-2) to 62.0% (IL-1), and averaged 44.5%. Accounting for weak plants decreased the grand means for adjusted % stand of SS Jubilee Plus by 1.5% to 14.2% at different locations, and by an average of 6.5% across locations. The only location that resulted in no significant treatment differences for adjusted % stand with SS Jubilee Plus was WA-1 (not calculated for NY-1 or WI-2).

The non-treated control resulted in the lowest adjusted % stand for SS Jubilee Plus when averaged across 10 locations (26.5%). Treatment 4 was the lowest ranking seed treatment for adjusted % stand in the summary across locations (41.3%), but was similar to Treatments 2, 6 and 11 (43.9%, 43.5%, 43.7% respectively). Treatment 14 resulted in the largest adjusted stand count in the summary across locations (49.8%) and was similar to Treatments 3, 8, and 15 (48.5%, 46.6%, and 49.0% respectively). The treatment means for adjusted % stand in the two standard treatment plots (Treatments 2 and 3) averaged 43.9% and 48.5% across locations; the adjusted stand for Treatment 3 was significantly greater than for Treatment 2. All of the seed treatments resulted in combined treatment means for adjusted % stand that were similar to one or both of the standards in the SS Jubilee Plus plots.

MARQUETTE: Grand means for adjusted % stand at the 10 locations ranged from 44.5% (ID-1) to 85.4% (FL-1), and averaged 71.3%. Accounting for weak plants decreased the grand means for adjusted % stand of Marquette by 2.0% to 6.4% at different locations, and by an average of 2.3% across locations. Four of 10 locations (CA-1, ID-4, MN-1, and WI-1) had significant treatment effects for adjusted stands in the trials with Marquette.

The non-treated control resulted in the lowest adjusted % stand for Marquette when averaged across 10 locations (62.7%). All of the seed treatments, except for Treatment 11 (65.8%), resulted in combined treatment means for adjusted % stand that were similar to one or both of the standards in the summary for Marquette. The adjusted stand for Treatment 2 (72.9%) was significantly greater than for Treatment 3 (69.2%).

RESULTS – VIGOR

The treatment means for vigor at each location for each variety are shown in Table 7 a-d. Combined treatment means for vigor in several groupings of results across locations are presented in Table 8. There are also three box and whisker graphs showing the distribution of treatment means for vigor across locations for both varieties combined, for SS Jubilee Plus, and for Marquette (Figures 4-6). The NY-1 location did not report vigor results.

BOTH VARIETIES: SS Jubilee Plus seedlings were rated as less vigorous than Marquette seedlings at all locations, with grand means for vigor of 3.02 and 4.09 respectively. The ANOVAs for individual locations indicated significant treatment effects for vigor at 7 of 11 locations with SS Jubilee Plus, and 4 of 11 locations with Marquette.

The non-treated control plots had the lowest vigor when averaged across 11 locations and both varieties (2.76). The highest ranking treatment for vigor in the summary across locations with both varieties was Treatment 7 (3.75), followed by Treatment 5 (3.71). The lowest ranking treatment for vigor in the summary across locations with both varieties was Treatment 3 (2.76), followed by Treatment 11 (3.39).

SS JUBILEE PLUS: Grand means for vigor at the 11 locations with SS Jubilee Plus ranged from 1.82 (WI-2) to 3.97 (WA-1), and averaged 3.02. Seven of 11 locations (CA-1, FL-1, ID-1, ID-3, MN-1, WI-2, and WA-1) showed treatment differences for vigor with the SS Jubilee seed lot.

The non-treated control resulted in the lowest vigor rating in the summary across locations for SS Jubilee Plus (2.02). Treatments 5, 7, 9, and 15 resulted in the best vigor ratings in the summary across locations, 3.27, 3.31, 3.30, and 3.27 respectively. These ratings were significantly better than those resulting for the non-treated control, both standards (Treatments 2 at 3.01 and 3 at 2.88), and Treatments 4 and 6 (2.83 and 2.94 respectively) in the summary for SS Jubilee Plus locations.

MARQUETTE: Grand means for vigor at the 11 locations with Marquette ranged from 3.52 (CA-1) to 4.61 (ID-3), and averaged 4.09. Four of 11 locations (CA-1, ID-2, WI-1, and WI-2) had treatment differences for vigor with the Marquette seed lot.

The non-treated control resulted in the lowest vigor rating in the summary across 11 locations with Marquette (3.46). All of the seed treatments resulted in vigor ratings that were similar to one or both of the standard treatments. Treatments 4, 5, 6, and 7 had the highest vigor ratings across Marquette trials (4.18, 4.17, 4.19, and 4.19 respectively) and Treatment 11 (3.81) had the lowest vigor rating when compared to other treatments.

RESULTS –TREATMENT COMPARISONS

Standard 1 vs. Standard 2: Treatments 2 and 3 resulted in similar stand counts in the summary across locations and varieties. Treatment 2 had significantly larger stand counts and adjusted stand counts when averaged across the Marquette trials, while Treatment 3 had better stands averaged across the SS Jubilee Plus trials. Treatment 2 tended to give better vigor results compared to Treatment 3, regardless of variety.

Valent 1 vs. Valent 2 vs. Valent 3: Treatment 5 resulted in a significantly larger stand count compared to Treatments 4 and 6 in the summary across locations and varieties. These treatments were the same except that Treatment 5 added Spirato (fludioxonil) to Treatment 4, and Treatment 6 added

Dynasty (azoxystrobin) to Treatment 4. Similar results were found for the adjusted stand counts and vigor results.

Syngenta 1 vs. Syngenta 2: Treatments 7 and 8 compare several fungicide active ingredients. There were no significant differences between these treatments in the summary across locations for SS Jubilee Plus or Marquette.

Nufarm 1 vs. Nufarm 2: Treatments 9 and 10 included the same active ingredients, but Treatment 9 added Micro 500 and Treatment 10 added Sembolite. The differences were not significant, but Treatment 9 resulted in slightly higher stand counts, adjusted stand counts, and vigor ratings compared to Treatment 10 in the summaries across locations for SS Jubilee Plus, Marquette, and both hybrids.

Standard 2 vs. McGregor 2: Treatment 15 added AgroFuze Zn to Treatment 3. Treatment 15 resulted in higher vigor ratings compared to Treatment 3 in the summary across locations and varieties. The stand counts and adjusted stands did not differ in the summaries.

RESULTS SUMMARY

- SS JUBILEE PLUS vs. MARQUETTE: SS Jubilee Plus resulted in lower stand counts, lower adjusted stand counts, and lower vigor ratings compared to Marquette.
- % STAND: The non-treated control and Treatment 11 resulted in the smallest stand counts when averaged across locations and varieties. Treatments 5, 7 and 8 resulted in the largest stand counts when averaged across locations and varieties. With the exception of Treatment 11 (lower) and Treatments 5, 7, 8 and 9 (higher) the rest of the seed treatments resulted in combined treatment means for % stand that were similar to the two standards.
- ADJUSTED % STAND: Accounting for slows reduced adjusted stand counts for SS Jubilee Plus by 1.5% to 14.2% at different locations, or by 6.5% on average. They reduced adjusted stand counts for Marquette by 2.0% to 6.4% at different locations, or by 2.3% on average. The non-treated control and Treatment 11 resulted in the smallest stand counts when averaged across locations and varieties. All of the other treatments had adjusted % stands that were similar to one or both of the standard treatments in the summary.
- VIGOR: The non-treated control had lower vigor ratings compared to the other seed treatments in the summary across all locations and both varieties. The highest ranking treatment for vigor was Treatment 7, followed by Treatment 5. The lowest ranking treatment for vigor in the summary across locations with both varieties was Treatment 3, followed by Treatment 11.
- This trial includes several comparisons of seed treatments that either substituted products, added products, and/or modified rates of products in the mixtures. Many of these comparisons were not discussed in this report beyond some general trends, but the data for each location are presented in the tables. A close inspection of the results should provide useful information to seed treatment formulators and other sweet corn industry personnel.
- For more information about the 2016 ISCDA Seed Treatment Trial, or about participation in future trials contact Carrie Wohleb at cwohleb@wsu.edu or (509) 754-2011 x.4313.

TABLE 1: 2016 ISCDA Seed Treatments				
No.	**Name**	**Treatment**	**Active Ingredients**	**Rate**
1	Control	No Treatment	none	
2	Standard 1	Dividend Extreme Apron XL LS Maxim 4FS Vitavax 34	difenoconazole+mefenoxam mefenoxam fludioxonil carboxin	2.00 oz/cwt 0.38 oz/cwt 0.08 oz/cwt 3.50 oz/cwt
3	Standard 2	Captan 4 Flowable Thiram 480DP Dividend Extreme Apron XL Vitavax 34	captan thiram difenoconazole+mefenoxam mefenoxam carboxin	2.50 oz/cwt 2.50 oz/cwt 5.00 oz/cwt 0.32 oz/cwt 4.00 oz/cwt
4	Valent 1	Metlock Rizolex Signet 480 FS Sebring 318 FS Intego Solo Nipsit Inside	metconazole tolclofos-methyl thiram metalaxyl ethaboxam clothianidin	0.052 oz/cwt 0.300 oz/cwt 2.500 oz/cwt 0.375 oz/cwt 0.300 oz/cwt 0.500 mg ai/seed
5	Valent 2	Metlock Rizolex Signet 480 FS Sebring 318 FS Intego Solo Nipsit Inside Spirato 480 FS	metconazole tolclofos-methyl thiram metalaxyl ethaboxam clothianidin fludioxonil	0.052 oz/cwt 0.300 oz/cwt 2.500 oz/cwt 0.375 oz/cwt 0.300 oz/cwt 0.500 mg ai/seed 0.080 oz/cwt
6	Valent 3	Metlock Rizolex Signet 480 FS Sebring 318 FS Intego Solo Nipsit Inside Dynasty	metconazole tolclofos-methyl thiram metalaxyl ethaboxam clothianidin azoxystrobin	0.052 oz/cwt 0.300 oz/cwt 2.500 oz/cwt 0.375 oz/cwt 0.300 oz/cwt 0.500 mg ai/seed 0.153 oz/cwt
7	Syngenta 1	Maxim 4 FS Apron XL Cruiser Vibrance Vitavax 34 Dividend Extreme	fludioxonil mefenoxam thiamethoxam sedaxane carboxin difenoconazole+mefenoxam	0.08 oz/cwt 0.38 oz/cwt 0.30 g ai/ 100 kg seed 0.16 oz/cwt 3.50 oz/cwt 2.00 oz/cwt
8	Syngenta 2	Maxim Quattro Apron XL Cruiser Vibrance Vitavax 34 Dividend Extreme	fludioxonil+mefenoxam+ azoxystrobin+thiabendazole mefenoxam thiamethoxam sedaxane carboxin difenoconazole+mefenoxam	0.064 mg ai/seed 6.900 g ai/100 kg seed 0.300 g ai/ 100 kg seed 0.16 oz/cwt 3.50 oz/cwt 2.00 oz/cwt

TABLE 1: 2016 ISCDA Seed Treatments continued…				
No.	**Name**	**Treatment**	**Active Ingredients**	**Rate**
9	Nufarm 1	Spirato 480 FS Signet 480 FS Sebring 480 FS Sativa 309 FS Senator 600 FS Micro 500	fludioxonil thiram metalaxyl tebuconazole imidacloprid	0.08 oz/cwt 2.50 oz/cwt 0.50 oz/cwt 0.74 oz/cwt 6.00 oz/cwt 2.00 oz/cwt
10	Nufarm 2	Spirato 480 FS Signet 480 FS Sebring 480 FS Sativa 309 FS Senator 600 FS Sembolite	fludioxonil thiram metalaxyl tebuconazole imidicloprid	0.08 oz/cwt 2.50 oz/cwt 0.50 oz/cwt 0.74 oz/cwt 6.00 oz/cwt 0.60 oz/cwt
11	Albaugh 1	SC-001		4.550 oz/cwt
12	Albaugh 2	SC-002		10.70 oz/cwt
13	Albaugh 3	SC-003		11.55 oz/cwt
14	McGregor 1	SC-004		15.235 oz/cwt
15	McGregor 2	Captan 4 Flowable Thiram 480DP Dividend Extreme Apron XL Vitavax 34 AgroFuze Zinc	captan thiram difenoconazole+mefenoxam mefenoxam carboxin	2.50 oz/cwt 2.50 oz/cwt 5.00 oz/cwt 0.32 oz/cwt 4.00 oz/cwt 12.0 oz/cwt

2016 ISCDA Seed Treatment Committee Chairs

Mike Erickson, Co-Chair, The McGregor Company, Filer, ID
Ron Baker, Co-Chair, HM Clause Inc., Nampa, ID
Carrie Wohleb, Research Coordinator, Washington State University, Moses Lake, WA

Trial	Locations	Planting Dates	Participating Researchers or Contacts
CA-1	Indio, CA	Jan. 25, 2016	Justin Minor, Syngenta Seeds Inc., Nampa, ID
FL-1	Belle Glade, FL	Feb. 9, 2016	Robert Beiriger, University of Florida, Belle Glade, FL
ID-1	Nampa, ID	May 13, 2016	Ron Baker, HM Clause Inc., Nampa, ID
ID-2	Kimberly, ID	May 4, 2016	Steve Hines, University of Idaho, Jerome, ID
ID-3	Huston, ID	Apr. 8, 2016	Don Ogawa, Crookham Company, Caldwell, ID
ID-4	Nampa, ID	Apr. 9, 2016	Justin Minor, Syngenta Seeds Inc., Nampa, ID
IL-1	Tolono, IL	April 15, 2016	Charlie Thompson, IFSI, Champaign, IL
MN-1	Stanton, MN	April 29, 2016	Justin Minor, Syngenta Seeds Inc., Nampa, ID
NY-1	Aurora, NY	May 24, 2016	Margaret Smith, Cornell University, Ithaca, NY Sherrie Norman, Cornell University, Ithaca, NY
WI-1	Plover, WI	May 4, 2016	Emily Wegner, IFSI, Plover, IL
WI-2	DeForest, WI	May 6, 2016	Tim Gustafson, Monsanto Vegetable Seeds, DeForest, WI
WA-1	Mattawa, WA	Mar. 28, 2016	Carrie Wohleb, Washington State University, Moses Lake, WA

TABLE 2a. 2016 ISCDA Seed Treatment Trial - % STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	CA-1 *Jan. 25, 2016*			FL-1 *Feb. 9, 2016*		ID-1 *May 13, 2016*		
	SS JUBILEE+	MARQUETTE	BOTH	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	BOTH
1	3.0 f	52.7 f	24.3 f	37.8 d	83.0	32.5 d	44.5 cd	38.5 d
2	35.5 b	77.8 bcd	56.6 b	71.0 abc	90.5	37.8 abc	49.0 ab	42.6 bc
3	59.0 a	81.8 abc	70.4 a	77.8 ab	93.0	40.3 abc	47.3 abc	43.3 abc
4	32.8 bc	77.0 cd	54.9 b	81.3 a	32.8	36.5 cd	48.5 ab	42.5 bc
5	36.8 b	78.0 bc	54.4 b	76.8 abc	90.0	38.5 abc	49.3 a	43.1 abc
6	34.3 bc	84.3 ab	55.7 b	76.3 abc	90.0	36.8 bcd	46.0 bcd	41.4 cd
7	35.5 b	81.0 abc	58.3 b	73.0 abc	91.3	38.3 abc	49.3 a	43.0 abc
8	19.3 d	77.8 bcd	48.5 c	77.7 ab	91.0	41.0 abc	48.0 ab	44.0 abc
9	27.8 c	79.3 bc	53.5 b	70.3 bc	92.5	39.0 abc	49.0 ab	44.0 abc
10	27.8 c	81.0 abc	54.4 b	75.0 abc	89.3	36.8 bcd	49.8 a	43.3 abc
11	10.8 e	70.0 d	40.4 de	75.8 abc	86.3	41.3 ab	47.3 abc	44.3 abc
12	11.5 e	60.3 e	35.9 e	77.5 abc	91.8	41.5 ab	50.0 a	45.8 a
13	10.8 e	71.0 d	40.9 d	66.8 c	90.5	41.0 abc	48.8 ab	44.9 ab
14	61.3 a	81.0 abc	71.1 a	75.0 abc	90.5	42.0 a	46.3 bcd	44.1 abc
15	61.0 a	86.3 a	73.6 a	75.5 abc	88.3	39.5 abc	44.3 d	41.9 bc
GRAND MEAN	**32.6**	**76.4**	**52.9**	**72.3**	**90.3**	**38.7**	**47.9**	**43.1**
ANOVA: TRT	0.0001	0.0001	0.0001	0.0001	NS	0.0308	0.0036	0.0060
LSD (P=0.05)	*7.62*	*6.76*	*4.9*	*10.88*		*4.94*	*3.08*	*3.0*
CV	16.36	6.17	9.21	10.49	4.5	8.94	4.47	7.05

TABLE 2b. 2016 ISCDA Seed Treatment Trial - % STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	ID-2 *May 4, 2016*		ID-3 *Apr. 8, 2016*		ID-4 *Apr. 9, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	7.7 e	68.5	38.5 c	79.8	36.5 f	72.0 d
2	25.3 d	82.0	64.0 ab	84.8	52.3 de	76.5 a
3	26.7 cd	77.3	60.0 ab	80.8	55.3 a-e	75.0 a-d
4	28.5 bcd	76.8	62.3 ab	84.3	51.8 e	75.8 abc
5	44.0 a	75.3	62.8 ab	84.5	58.0 abc	73.3 abc
6	36.0 a-d	73.3	63.3 ab	87.0	56.5 a-e	75.0 a-d
7	41.8 ab	73.3	60.5 ab	87.3	57.3 a-d	76.3 ab
8	38.0 a-d	77.5	63.8 ab	84.8	60.5 a	75.5 abc
9	40.8 abc	84.0	66.5 ab	85.0	53.0 cde	75.8 abc
10	38.0 a-d	77.8	60.0 ab	85.0	59.5 ab	77.0 a
11	32.8 a-d	54.7	63.5 ab	86.0	55.8 a-e	74.5 a-d
12	47.0 a	80.5	58.3 b	83.3	54.3 b-e	77.5 a
13	46.3 a	82.3	60.8 ab	83.0	55.0 b-e	72.8 cd
14	36.8 a-d	77.5	70.0 a	86.8	52.0 de	75.3 abc
15	27.5 bcd	68.0	65.0 ab	83.8	54.5 b-e	76.3 ab
GRAND MEAN	**34.6**	**76.7**	**61.1**	**84.3**	**54.0**	**75.3**
ANOVA: TRT	0.0004	NS	0.0008	NS	0.0001	0.0306
LSD (P=0.05)	*15.07*		*10.67*		*5.41*	*3.10*
CV	30.39	10.73	12.19	6.08	7.0	2.88

TABLE 2c. 2016 ISCDA Seed Treatment Trial - % STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	IL-1 *Apr. 15, 2016*		MN-1 *Apr. 29, 2016*		NY-1 *May 24, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	69.5	85.0	26.0 d	48.3 e	66.5 cde	90.0
2	77.0	89.0	41.3 abc	57.7 abc	71.5 cde	93.7
3	68.8	78.8	44.3 ab	50.8 de	72.3 cd	87.0
4	61.3	79.3	36.5 c	55.3 bcd	75.5 abc	90.8
5	66.3	92.3	41.0 abc	59.7 ab	73.0 cd	90.0
6	66.0	87.0	45.3 ab	54.0 cd	64.3 de	81.0
7	75.8	85.3	41.5 abc	60.8 a	68.7 cde	91.5
8	66.0	93.0	45.3 ab	56.0 a-d	72.8 cd	81.3
9	80.3	72.3	40.3 bc	53.3 cde	84.8 a	91.5
10	69.8	94.0	47.5 a	55.3 a-d	75.3 abc	77.0
11	78.0	78.5	45.8 ab	57.3 abc	74.7 bc	82.8
12	72.3	81.8	42.5 abc	52.0 de	62.5 e	81.3
13	77.5	80.0	42.8 abc	55.5 a-d	83.5 ab	83.3
14	73.0	91.7	40.3 bc	55.0 bcd	74.3 bc	90.8
15	78.3	91.3	42.0 abc	59.8 ab	66.5 cde	91.3
GRAND MEAN	**71.5**	**85.8**	**41.2**	**55.2**	**72.2**	**87.2**
ANOVA: TRT	NS	NS	0.0002	0.0016	0.0010	NS
LSD (P=0.05)			*7.11*	*5.45*	*9.71*	
CV	12.06	13.67	12.07	6.88	9.39	9.18

TABLE 2d. 2016 ISCDA Seed Treatment Trial - % STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**WI-1** ***May 4, 2016***		**WI-2** ***May 6, 2016***		**WA-1** ***Mar 28, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	35.3 b	71.3	3.5 f	23.5 h	45.3 bc	73.7 ab
2	49.3 a	75.8	11.0 f	51.5 f	56.3 abc	70.0 ab
3	48.8 a	74.0	5.3 f	40.8 g	66.0 a	68.5 b
4	53.3 a	74.5	40.3 cd	74.8 abc	53.3 abc	73.0 ab
5	50.8 a	71.5	53.0 ab	80.3 ab	60.8 ab	74.5 ab
6	49.0 a	72.8	42.5 cd	77.5 abc	41.5 c	72.3 ab
7	51.8 a	73.0	46.5 bc	78.0 abc	64.0 ab	73.3 ab
8	51.3 a	75.5	56.3 a	81.7 a	61.8 ab	74.3 ab
9	52.8 a	77.0	34.8 d	75.3 abc	56.3 abc	76.8 ab
10	51.8 a	68.3	25.3 e	73.0 bcd	51.0 abc	78.3 a
11	50.3 a	73.8	13.5 f	55.3 f	42.3 c	75.0 ab
12	52.8 a	72.0	40.7 cd	66.0 de	51.7 abc	75.5 ab
13	50.3 a	72.3	34.8 d	72.3 cd	64.3 a	75.0 ab
14	52.0 a	72.5	21.0 e	60.5 e	58.0 abc	75.3 ab
15	50.5 a	72.3	7.8 f	45.7 fg	49.3 abc	77.0 ab
GRAND MEAN	**50.0**	**73.0**	**30.2**	**64.3**	**54.4**	**74.1**
ANOVA: TRT	0.0086	NS	0.0001	0.0001	0.0718	0.0001
LSD (P=0.05)	7.79		*8.06*	*7.75*	*16.89*	*9.47*
CV	10.91	4.48	18.66	8.41	21.61	8.93

TABLE 3. 2016 ISCDA Seed Treatment Trial - % STAND – SUMMARY ACROSS LOCATIONS.
Treatment means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	12 + 12 LOCATIONS BOTH VARIETIES	12 LOCATIONS SS JUBILEE+	12 LOCATIONS MARQUETTE
1	50.0 f	33.8 h	66.1 f
2	61.6 d	48.5 fg	75.2 abc
3	61.6 d	52.1 b-e	71.2 e
4	63.1 bcd	50.4 ef	75.2 abc
5	65.7 a	55.1 a	77.2 a
6	62.7 cd	50.7 ef	74.8 a-d
7	65.5 a	53.6 a-d	77.0 a
8	65.3 a	54.3 abc	76.5 ab
9	64.9 ab	53.9 a-d	76.0 abc
10	63.4 bcd	51.5 cde	75.5 abc
11	58.9 e	47.5 g	70.3 e
12	62.0 d	51.2 def	72.5 de
13	63.3 bcd	52.8 a-e	73.9 cd
14	64.1 abc	54.6 ab	74.4 bcd
15	62.0 d	51.4 de	73.8 cd
GRAND MEAN	**62.7**	**51.0**	**73.9**
LOCATION	0.0001	0.0001	0.0001
TREATMENT	0.0001	0.0001	0.0001
TRT x LOC	0.0001	0.0001	0.0001

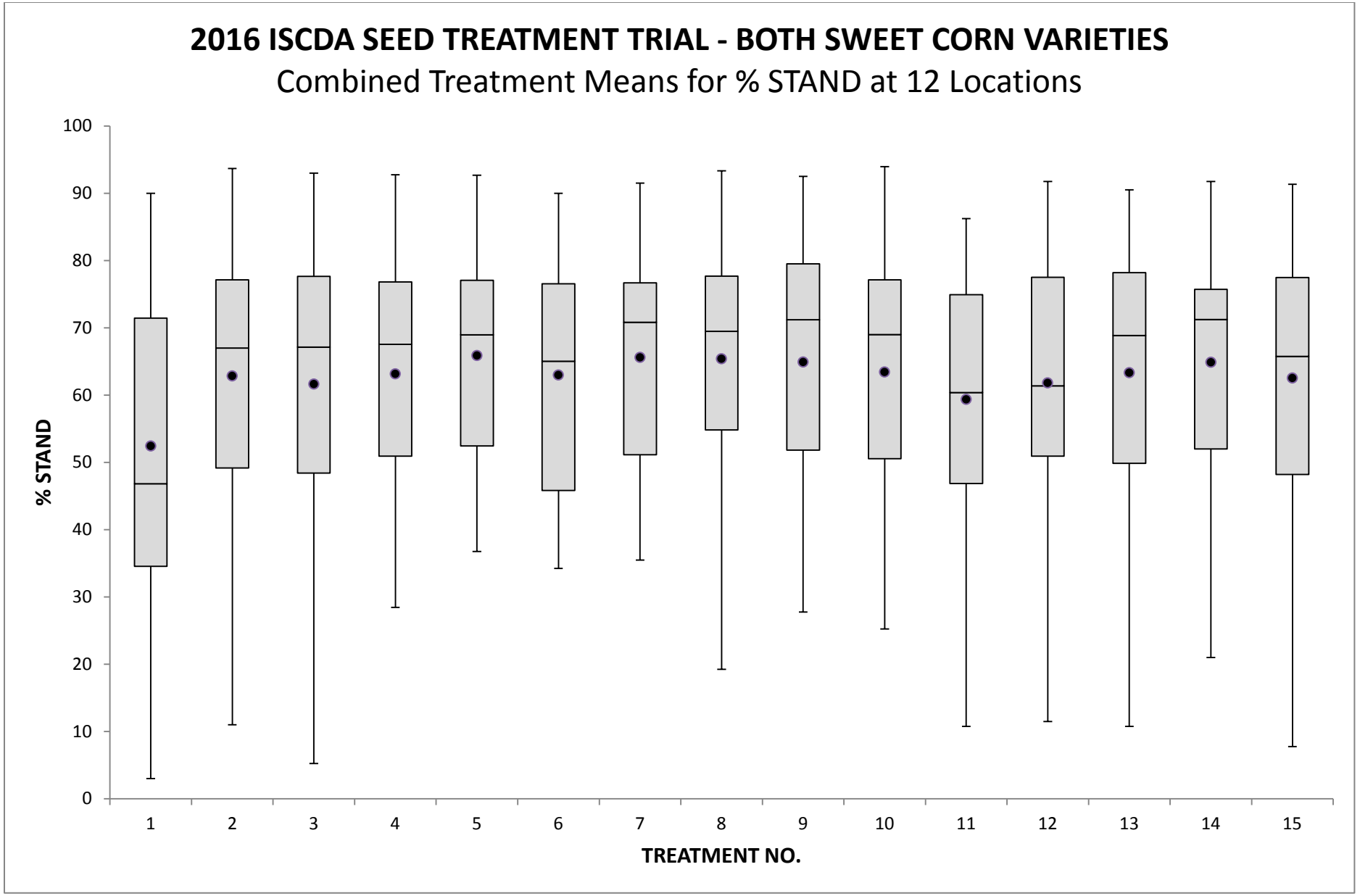

FIGURE 1. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for BOTH SWEET CORN VARIETIES at 12 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

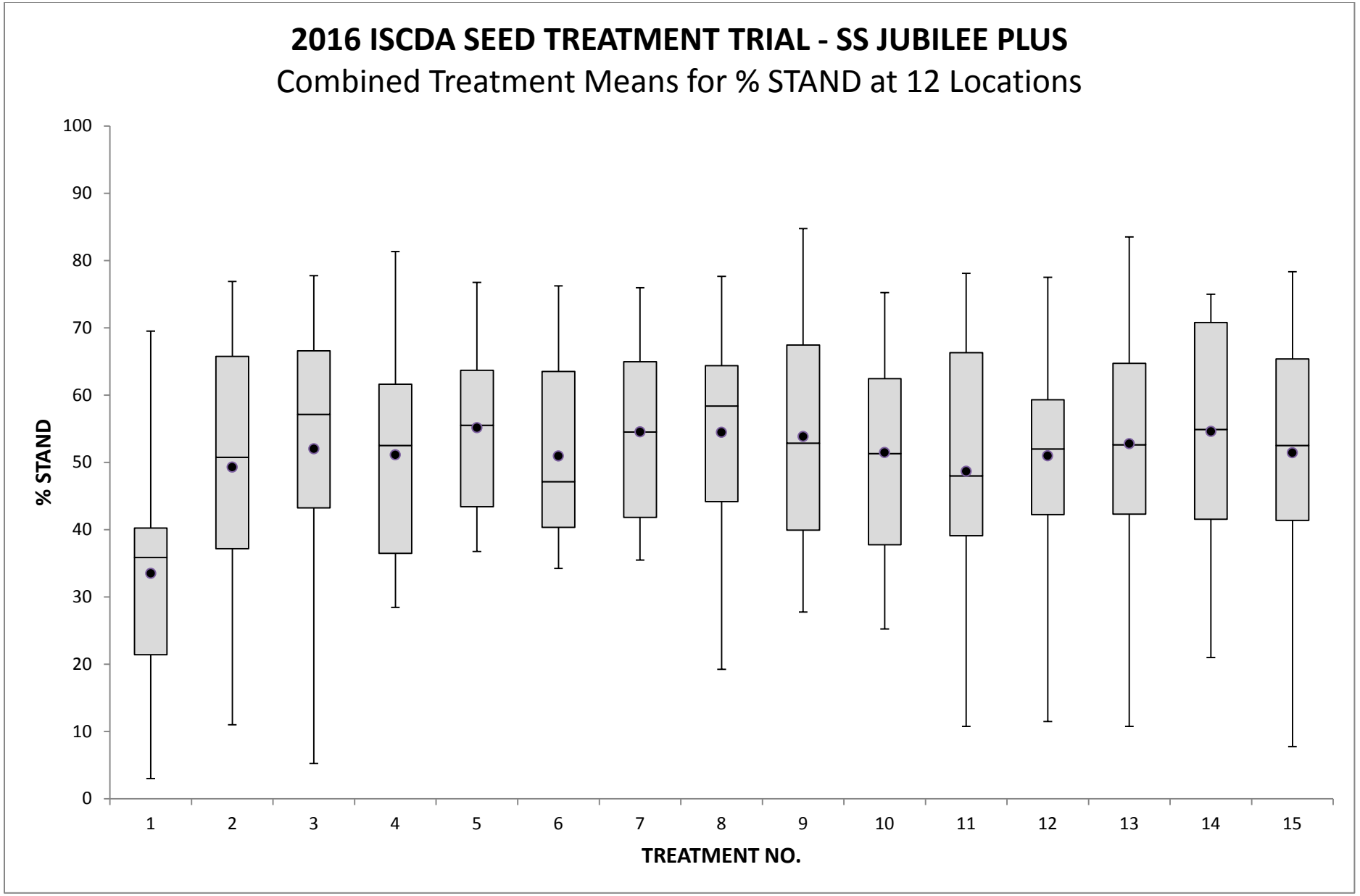

FIGURE 2. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for SS JUBILEE PLUS at 12 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

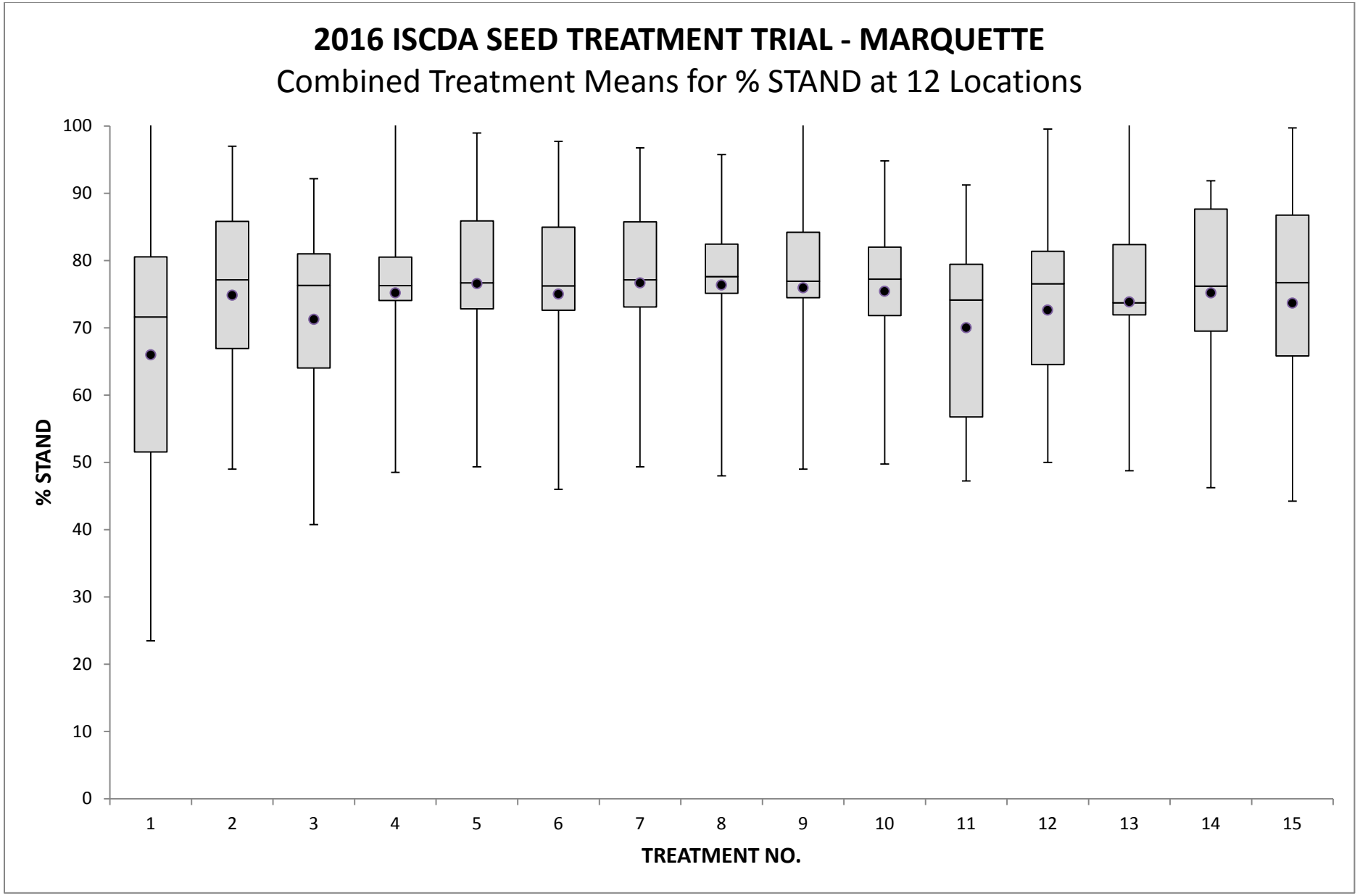

FIGURE 3. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for % STAND for MARQUETTE at 12 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

TABLE 4a. 2016 ISCDA Seed Treatment Trial - % SLOWS – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	CA-1 *Jan. 25, 2016*		FL-1 *Feb. 9, 2016*		ID-1 *May 13, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	1.7	5.7 a	25.1	11.2	16.0	6.7
2	4.1	2.1 b-e	17.3	5.4	16.5	4.4
3	4.7	1.2 def	9.0	2.9	9.0	4.1
4	2.7	3.2 a-d	10.7	4.5	12.8	10.1
5	3.8	1.7 c-f	10.6	7.2	13.9	4.4
6	4.9	0.2 f	15.1	5.6	12.6	8.5
7	2.8	0.9 ef	6.0	2.9	11.7	7.3
8	4.7	1.7 c-f	11.6	3.8	14.3	7.4
9	5.7	3.6 abc	15.7	3.2	12.7	4.3
10	4.1	0.9 ef	12.8	5.9	14.3	5.4
11	7.4	3.5 abc	14.0	5.7	9.6	5.1
12	10.4	5.0 a	12.9	3.4	10.6	7.3
13	11.6	4.2 ab	10.3	5.1	14.2	6.8
14	1.1	0.9 ef	12.8	4.7	13.2	7.8
15	3.0	1.8 b-e	12.6	4.3	15.2	5.7
GRAND MEAN	**5.8**	**2.7**	**13.7**	**5.6**	**13.5**	**7.5**
ANOVA: TRT	NS	0.0001	NS	NS	NS	NS
LSD (P=0.05)		*1.56*				
CV	48.99	28.29	23.68	29.74	20.58	30.37

TABLE 4b. 2016 ISCDA Seed Treatment Trial - % SLOWS – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	ID-2 *May 4, 2016*		ID-3 *Apr. 8, 2016*		ID-4 *Apr. 9, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	0.0 d	7.1	25.6 a	4.6	11.7	2.4
2	15.1 ab	4.4	8.5 c	1.8	2.5	2.2
3	26.3 a	9.4	13.1 bc	1.8	6.1	2.2
4	17.1 ab	7.5	11.1 bc	3.2	6.6	2.5
5	15.7 ab	10.8	17.0 b	3.0	5.3	2.1
6	19.0 ab	15.9	8.7 c	1.2	3.4	1.7
7	11.5 abc	7.6	13.9 bc	1.1	4.2	1.9
8	15.7 ab	5.3	9.8 c	1.1	5.4	1.5
9	10.4 abc	6.8	13.1 bc	0.6	3.7	1.5
10	11.6 abc	7.7	8.7 c	2.9	6.5	4.6
11	9.4 bc	17.2	8.1 c	1.9	4.3	1.9
12	13.1 abc	4.8	9.3 c	3.0	5.2	1.9
13	9.9 abc	3.8	10.2 c	1.7	3.4	2.6
14	2.4 cd	4.3	11.4 bc	0.9	4.9	2.9
15	6.6 bcd	13.1	8.5 c	1.8	5.8	1.9
GRAND MEAN	**3.9**	**10.3**	**12.0**	**2.3**	**5.6**	**2.5**
ANOVA: TRT	0.0131	NS	0.0010	NS	NS	NS
LSD (P=0.05)	*10.76*		*6.03*			
CV	40.78	32.84	18.05	36.91	25.09	37.3

TABLE 4c. 2016 ISCDA Seed Treatment Trial - % SLOWS – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**IL-1** ***Apr. 15, 2016***		**MN-1** ***Apr. 29, 2016***		**NY-1** ***May 24, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	18.5 ab	4.5	18.1 ab	8.3		
2	10.0 b-f	1.6	8.6 d	4.5		
3	8.0 c-f	1.7	8.5 d	6.4		
4	23.8 a	2.0	15.7 abc	6.4		
5	11.0 b-f	2.3	10.5 cd	6.9		
6	16.5 abc	2.8	13.9 a-d	5.4		
7	14.5 a-e	3.4	20.5 a	3.3		
8	4.9 f	1.7	10.1 cd	3.4		
9	16.8 abc	3.2	12.6 bcd	6.7		
10	15.9 abc	2.6	12.4 bcd	9.0		
11	7.1 c-f	3.5	11.5 bcd	4.3		
12	5.7 ef	1.3	9.4 cd	8.6		
13	5.9 def	2.9	9.3 cd	6.9		
14	15.0 a-d	2.2	14.3 a-d	10.0		
15	3.8 f	1.9	10.8 bcd	5.8		
GRAND MEAN	**13.2**	**3.0**	**12.8**	**6.9**		
ANOVA: TRT	0.0027	NS	0.0452	NS		
LSD (P=0.05)	*7.86*		*6.68*			
CV	28.91	42.88	18.86	28.55		

TABLE 4d. 2016 ISCDA Seed Treatment Trial - % SLOWS – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	WI-1 *May 4, 2016*		WI-2 *May 6, 2016*		WA-1 *Mar 28, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	49.0 a	10.8 a			8.7	12.1
2	30.6 bcd	3.7 bcd			8.5	12.6
3	35.0 b	3.9 bcd			7.0	11.3
4	32.8 bc	3.7 bcd			7.3	5.1
5	36.0 ab	2.6 bcd			8.0	5.7
6	29.1 b-e	2.0 cd			7.3	10.7
7	27.0 b-f	5.4 bc			8.3	6.7
8	19.6 ef	3.7 bcd			9.5	6.3
9	26.9 b-f	1.6 d			6.3	7.0
10	19.8 ef	5.7 b			5.7	8.5
11	18.4 f	5.0 bc			1.5	15.8
12	28.2 b-f	3.8 bcd			6.3	3.9
13	19.6 ef	5.7 b			13.0	7.9
14	21.6 def	6.2 ab			9.5	7.2
15	23.7 c-f	5.9 ab			4.5	4.8
GRAND MEAN	**28.4**	**5.0**			**7.4**	**9.4**
ANOVA: TRT	0.0001	0.0177			NS	NS
LSD (P=0.05)	*9.94*	*3.32*				
CV	13.59	27.72			70.58	38.78

TABLE 5a. 2016 ISCDA Seed Treatment Trial - % ADJUSTED STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	CA-1 *Jan. 25, 2016*		FL-1 *Feb. 9, 2016*		ID-1 *May 13, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	2.8 e	52.0 d	28.0 c	73.3	27.3 c	40.8
2	33.8 b	76.0 bc	58.7 b	85.5	31.5 bc	46.7
3	56.3 a	80.5 ab	70.8 ab	90.0	36.5 ab	45.3
4	31.8 bc	74.5 bc	72.7 a	88.5	31.8 bc	43.0
5	35.0 b	77.3 ab	68.5 ab	83.3	33.0 ab	47.0
6	32.5 bc	79.3 ab	64.5 ab	85.0	31.8 bc	42.0
7	34.0 b	80.0 ab	68.3 ab	88.3	33.8 ab	45.7
8	18.3 d	76.3 b	68.7 ab	87.0	35.3 ab	44.3
9	25.8 c	76.3 b	59.0 b	89.3	33.8 ab	46.8
10	26.3 c	80.0 ab	64.8 ab	83.3	31.5 bc	46.5
11	9.8 e	67.3 c	64.0 ab	81.0	37.3 a	44.8
12	9.8 e	57.0 d	67.0 ab	88.3	37.0 a	46.0
13	9.5 e	68.0 c	59.8 b	85.3	34.8 ab	45.3
14	60.5 a	80.0 ab	65.3 ab	85.3	36.3 ab	42.3
15	59.3 a	84.5 a	65.8 ab	84.0	33.0 ab	41.5
GRAND MEAN	**31.1**	**74.4**	**63.0**	**85.4**	**33.4**	**44.5**
ANOVA: TRT	0.0001	0.0001	0.0001	NS	0.0338	NS
LSD (P=0.05)	*7.37*	*8.18*	*12.66*		*5.06*	
CV	16.58	7.68	14.01	8.68	10.61	7.5

TABLE 5b. 2016 ISCDA Seed Treatment Trial - % ADJUSTED STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	ID-2 *May 4, 2016*		ID-3 *Apr. 8, 2016*		ID-4 *Apr. 9, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	7.7 e	63.5	29.0 b	76.0	32.3 d	69.8 d
2	21.5 cde	78.3	58.3 a	83.0	50.8 bc	74.8 ab
3	20.0 de	69.0	52.0 a	78.8	51.8 bc	73.3 abc
4	23.5 bcd	71.0	55.3 a	81.3	48.3 c	73.5 abc
5	37.3 ab	65.5	52.0 a	82.0	54.8 ab	71.5 bcd
6	28.8 a-d	61.8	57.5 a	85.8	54.3 ab	73.5 abc
7	37.0 ab	67.3	52.0 a	86.0	55.0 ab	74.5 ab
8	32.0 a-d	73.3	57.5 a	83.5	57.3 a	74.3 ab
9	36.0 ab	77.8	57.5 a	84.3	50.8 bc	74.5 ab
10	32.8 a-d	71.5	54.5 a	82.5	55.5 ab	73.0 a-d
11	27.0 a-d	46.0	58.5 a	84.3	53.3 abc	73.0 a-d
12	40.8 a	75.5	52.5 a	80.5	51.3 bc	75.8 a
13	41.3 a	78.0	54.8 a	81.5	52.5 abc	70.8 cd
14	35.3 abc	73.0	62.3 a	85.8	49.0 c	73.0 a-d
15	24.8 bcd	59.0	59.3 a	82.0	51.3 bc	74.5 ab
GRAND MEAN	**29.9**	**70.3**	**53.9**	**82.3**	**51.0**	**73.3**
ANOVA: TRT	0.0014	NS	0.0002	NS	0.0001	0.0380
LSD (P=0.05)	*14.46*		*10.78*		*5.06*	*3.29*
CV	33.73	13.95	13.97	6.83	6.93	3.14

TABLE 5c. 2016 ISCDA Seed Treatment Trial - % ADJUSTED STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**IL-1** ***Apr. 15, 2016***		**MN-1** ***Apr. 29, 2016***		**NY-1** ***May 24, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	56.5 cde	80.8	21.3 e	43.8 f		
2	68.5 abc	87.0	37.5 abc	55.0 a-d		
3	62.3 a-d	77.0	40.0 ab	47.3 ef		
4	44.3 e	77.5	30.8 d	51.5 b-e		
5	58.8 bcd	90.0	36.3 a-d	55.3 abc		
6	53.5 de	84.3	39.0 abc	51.0 b-e		
7	63.3 a-d	82.0	33.0 cd	58.3 a		
8	61.8 a-d	91.3	40.3 ab	53.5 a-d		
9	66.5 a-d	70.0	35.0 a-d	49.3 def		
10	58.0 bcd	91.3	41.5 a	50.3 b-e		
11	72.3 ab	75.3	40.3 ab	54.8 a-e		
12	67.5 abc	80.3	38.5 abc	47.5 ef		
13	70.8 ab	77.0	38.5 abc	51.8 b-e		
14	61.8 a-d	83.0	34.5 bcd	49.5 c-f		
15	74.0 a	89.3	37.3 a-d	56.0 ab		
GRAND MEAN	**62.0**	**82.9**	**36.0**	**51.4**		
ANOVA: TRT	0.0110	NS	0.0001	0.0012		
LSD (P=0.05)	*13.59*		*6.66*	*5.96*		
CV	15.34	14.81	12.95	8.08		

TABLE 5d. 2016 ISCDA Seed Treatment Trial - % ADJUSTED STAND – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	WI-1 *May 4, 2016*		WI-2 *May 6, 2016*		WA-1 *Mar 28, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	17.5 c	63.0 d			41.7	64.3
2	34.5 ab	73.0 ab			51.5	59.8
3	31.5 b	70.5 ab			61.3	59.8
4	35.8 ab	71.8 ab			49.3	68.5
5	32.5 ab	69.5 bc			55.5	70.3
6	34.8 ab	71.3 ab			38.8	64.0
7	37.5 ab	69.0 bc			58.3	67.8
8	41.3 a	72.3 ab			55.8	69.5
9	38.5 ab	75.5 a			52.8	71.5
10	40.8 ab	64.5 cd			48.3	70.5
11	40.8 ab	69.8 bc			41.3	57.3
12	37.8 ab	69.0 bc			48.0	72.3
13	40.3 ab	67.8 bcd			56.5	68.8
14	40.5 ab	68.0 bcd			52.3	69.0
15	38.0 ab	67.8 bcd			47.0	72.5
GRAND MEAN	**35.8**	**69.5**			**50.2**	**67.7**
ANOVA: TRT	0.0011	0.0101			NS	NS
LSD (P=0.05)	*9.28*	*5.82*				
CV	18.12	5.86			22.88	12.42

TABLE 6. 2016 ISCDA Seed Treatment Trial - % ADJUSTED STAND – SUMMARY ACROSS LOCATIONS.
Treatment means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	10 + 10 LOCATIONS BOTH VARIETIES	10 LOCATIONS SS JUBILEE+	10 LOCATIONS MARQUETTE
1	45.1 g	26.5 f	62.7 e
2	58.2 a-e	43.9 de	72.9 a
3	58.9 a-d	48.5 abc	69.2 c
4	56.1 ef	41.3 e	70.1 abc
5	58.5 a-d	46.4 bcd	71.7 abc
6	56.7 def	43.5 de	69.8 ab
7	59.3 abc	46.4 bcd	72.2 abc
8	59.7 ab	46.6 a-d	72.8 ab
9	58.5 a-d	45.6 cd	71.5 abc
10	58.2 a-e	45.3 cd	71.4 abc
11	54.5 f	43.7 de	65.8 d
12	57.2 cde	44.9 d	69.2 c
13	57.6 b-e	45.9 bcd	69.4 c
14	59.9 a	49.8 a	70.6 abc
15	59.7 ab	49.0 ab	71.3 abc
GRAND MEAN	**57.2**	**44.5**	**71.3**
LOCATION	0.0001	0.0001	0.0001
TREATMENT	0.0001	0.0001	0.0001
TRT x LOC	0.0001	0.0001	0.0001

TABLE 7a. 2016 ISCDA Seed Treatment Trial - VIGOR – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	CA-1 *Jan. 25, 2016*		FL-1 *Feb. 9, 2016*		ID-1 *May 13, 2016*	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	1.50 g	2.50 ef	1.5 c	3.3	2.25 c	3.3
2	3.00 cd	3.25 cde	3.0 ab	4.0	3.13 ab	4.0
3	3.75 b	4.50 a	3.0 ab	4.3	3.25 ab	3.7
4	3.25 bcd	4.25 ab	3.7 a	4.5	2.75 bc	3.3
5	3.50 bc	3.75 a-d	3.8 a	3.8	2.75 bc	4.0
6	3.25 bcd	4.25 ab	3.0 ab	4.0	2.25 c	3.5
7	3.00 cd	4.00 abc	3.3 ab	4.3	3.00 ab	3.7
8	2.25 ef	3.50 bcd	3.7 a	3.5	3.00 ab	3.7
9	2.75 de	3.50 bcd	3.0 ab	3.5	3.00 ab	3.5
10	2.75 de	3.50 bcd	3.0 ab	3.3	3.50 a	3.3
11	1.50 g	3.00 def	3.0 ab	3.8	3.25 ab	3.5
12	1.50 g	2.25 f	3.3 ab	4.3	3.25 ab	3.3
13	2.00 fg	2.50 ef	3.0 ab	3.8	3.00 ab	3.3
14	4.50 a	4.50 a	2.5 b	3.3	2.75 bc	3.8
15	4.50 a	4.50 a	2.8 ab	3.8	3.00 ab	3.3
GRAND MEAN	**2.75**	**3.52**	**3.05**	**3.82**	**2.94**	**3.54**
ANOVA: TRT	0.0001	0.0001	0.0044	NS	0.0365	NS
LSD (P=0.05)	*0.659*	*0.759*	*0.92*		*0.715*	
CV	16.76	15.08	21.12	17.88	17.02	15.94

TABLE 7b. 2016 ISCDA Seed Treatment Trial - VIGOR – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**ID-2** ***May 4, 2016***		**ID-3** ***Apr. 8, 2016***		**ID-4** ***Apr. 9, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	2.3	4.3 ab	2.25 c	4.38	2.50	3.50
2	2.8	5.0 a	3.58 ab	4.56	3.75	4.00
3	2.7	3.7 bc	3.25 b	4.44	3.75	3.50
4	3.3	4.5 ab	3.44 ab	4.69	3.00	3.75
5	3.8	4.5 ab	3.63 ab	4.63	3.75	3.75
6	3.3	3.8 bc	3.31 b	4.81	4.00	3.75
7	4.0	4.3 ab	3.38 ab	4.75	3.50	4.00
8	3.3	4.5 ab	3.44 ab	4.69	4.00	3.75
9	4.5	4.5 ab	3.75 ab	4.50	3.50	3.75
10	3.8	4.8 a	3.31 b	4.56	4.00	4.00
11	3.0	3.3 c	3.44 ab	4.63	4.50	4.00
12	4.3	4.3 ab	3.31 b	4.56	3.50	4.00
13	4.3	4.8 a	3.44 ab	4.63	3.75	3.75
14	3.0	5.0 a	3.88 a	4.75	3.75	4.25
15	3.5	4.0 bc	3.69 a	4.50	3.75	4.25
GRAND MEAN	**3.43**	**4.36**	**3.39**	**4.61**	**3.63**	**3.84**
ANOVA: TRT	NS	0.0112	0.0004	NS	NS	NS
LSD (P=0.05)		*0.87*	*0.53*			
CV	30.34	13.85	11.0	5.65	19.5	13.32

TABLE 7c. 2016 ISCDA Seed Treatment Trial - VIGOR – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**IL-1** ***Apr. 15, 2016***		**MN-1** ***Apr. 29, 2016***		**NY-1** ***May 24, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	2.0	3.8	3.00 cd	3.75		
2	2.3	4.5	3.75 ab	4.17		
3	2.5	4.0	4.00 ab	4.00		
4	2.0	3.5	2.75 d	4.13		
5	2.3	4.3	3.75 ab	3.50		
6	2.3	4.3	3.50 bc	4.00		
7	3.0	3.5	4.25 a	4.50		
8	2.5	4.3	4.25 a	4.00		
9	2.8	3.5	4.25 a	4.00		
10	2.8	4.7	4.00 ab	3.50		
11	2.7	3.8	4.25 a	3.75		
12	3.0	3.5	3.75 ab	4.00		
13	3.0	4.0	4.25 a	4.00		
14	3.0	4.3	4.00 ab	3.50		
15	3.0	3.7	4.25 a	4.25		
GRAND MEAN	**2.57**	**3.99**	**3.84**	**3.91**		
ANOVA: TRT	NS	NS	0.0012	NS		
LSD (P=0.05)			*0.729*			
CV	26.6	21.41	13.27	13.25		

TABLE 7d. 2016 ISCDA Seed Treatment Trial - VIGOR – SS JUBILEE PLUS and MARQUETTE.
Planting date in italics. Means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	**WI-1** ***May 4, 2016***		**WI-2** ***May 6, 2016***		**WA-1** ***Mar 28, 2016***	
	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE	SS JUBILEE+	MARQUETTE
1	1.0	4.0 c	1.0 d	1.3 d	3.33 cd	4.13
2	2.3	4.5 abc	1.0 d	2.5 c	4.75 a	4.50
3	1.5	4.3 bc	1.0 d	2.0 cd	3.17 d	4.38
4	1.5	4.8 ab	2.3 b	4.3 ab	3.67 bcd	4.38
5	2.3	5.0 a	2.8 a	4.5 ab	3.88 a-d	4.00
6	1.8	4.8 ab	2.0 b	4.5 ab	4.50 ab	4.50
7	2.0	4.3 bc	2.8 a	4.0 ab	4.17 abc	4.88
8	2.0	4.3 bc	3.0 a	4.8 a	3.63 bcd	4.00
9	2.5	5.0 a	2.0 b	4.5 ab	4.25 ab	4.38
10	2.3	4.3 bc	1.3 cd	4.3 ab	4.50 ab	4.25
11	1.5	5.0 a	1.0 d	2.8 c	4.50 ab	4.38
12	1.8	4.5 abc	2.0 b	3.8 b	4.00 a-d	4.50
13	1.8	4.5 abc	2.0 b	4.0 ab	3.75 bcd	4.38
14	1.8	4.0 c	1.5 c	2.8 c	3.25 d	4.63
15	2.3	4.5 abc	1.0 d	2.8 c	4.25 ab	4.63
GRAND MEAN	**1.84**	**4.50**	**1.82**	**3.55**	**3.97**	**4.39**
ANOVA: TRT	NS	0.0072	0.0001	0.0001	0.0127	NS
LSD (P=0.05)		*0.61*	*0.41*	*0.83*	*0.90*	
CV	37.72	9.46	15.76	16.37	15.81	10.96

TABLE 8. 2016 ISCDA Seed Treatment Trial –VIGOR – SUMMARY ACROSS LOCATIONS.
Treatment means in columns followed by the same letter are not significantly different (P=0.05).

TREATMENT NO.	11 + 11 LOCATIONS BOTH VARIETIES	11 LOCATIONS SS JUBILEE+	11 LOCATIONS MARQUETTE
1	2.76 g	2.02 e	3.46 d
2	3.53 c-f	3.01 bcd	4.07 ab
3	3.38 f	2.88 cd	3.88 bc
4	3.52 c-f	2.83 d	4.18 a
5	3.71 ab	3.27 a	4.17 a
6	3.56 b-e	2.94 bcd	4.19 a
7	3.75 a	3.31 a	4.19 a
8	3.63 a-d	3.17 ab	4.09 ab
9	3.68 abc	3.30 a	4.06 ab
10	3.58 a-d	3.16 ab	4.02 abc
11	3.39 ef	2.97 bcd	3.81 c
12	3.48 def	3.05 a-d	3.89 bc
13	3.53 c-f	3.11 abc	3.96 abc
14	3.54 b-f	3.08 a-d	4.04 abc
15	3.63 a-d	3.27 a	4.01 abc
GRAND MEAN	**3.56**	**3.02**	**4.09**
LOCATION	0.0001	0.0001	0.0001
TREATMENT	0.0001	0.0001	0.0001
TRT x LOC	0.0001	0.0001	0.0001

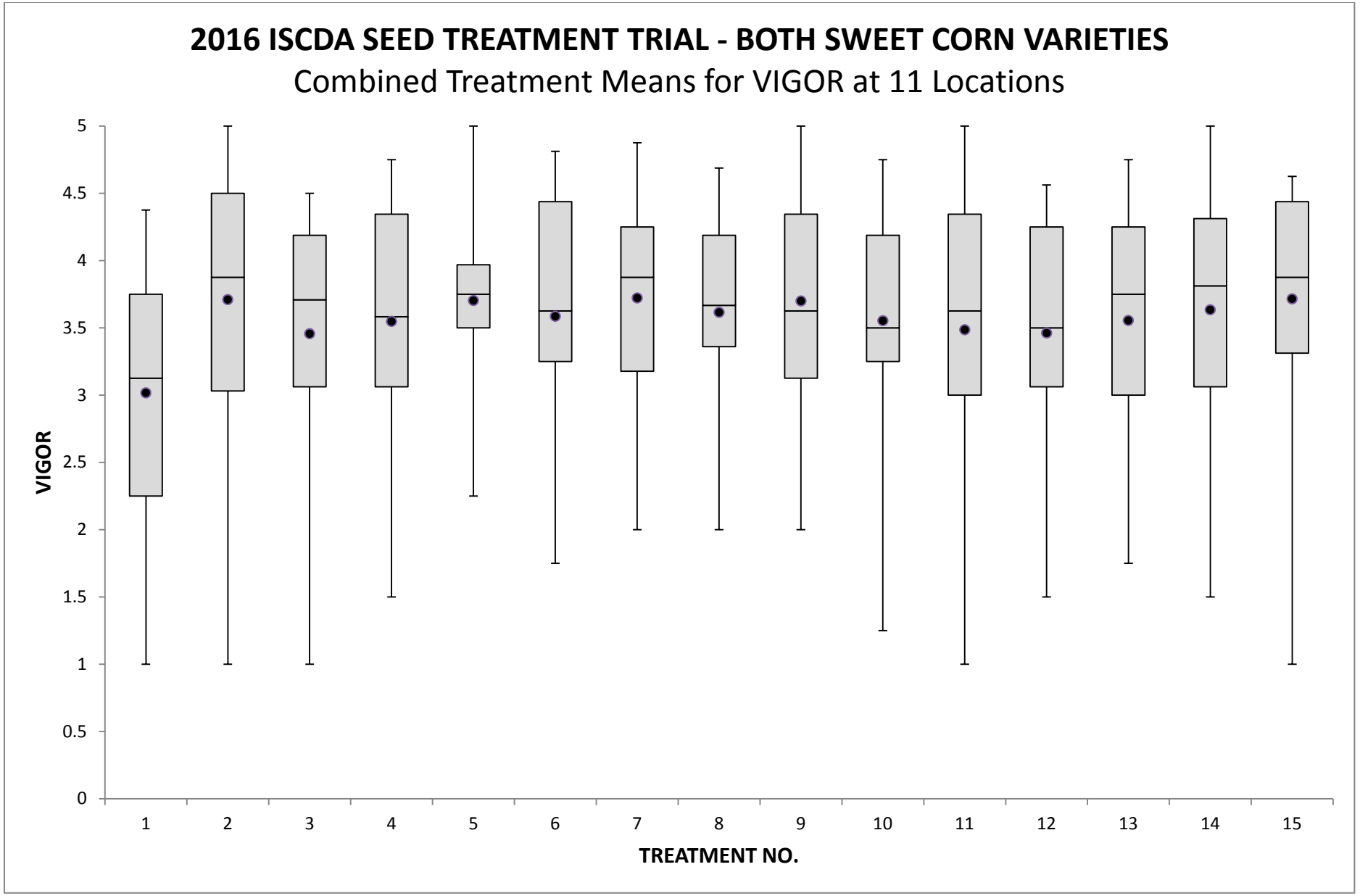

FIGURE 4. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for BOTH SWEET CORN VARIETIES at 11 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

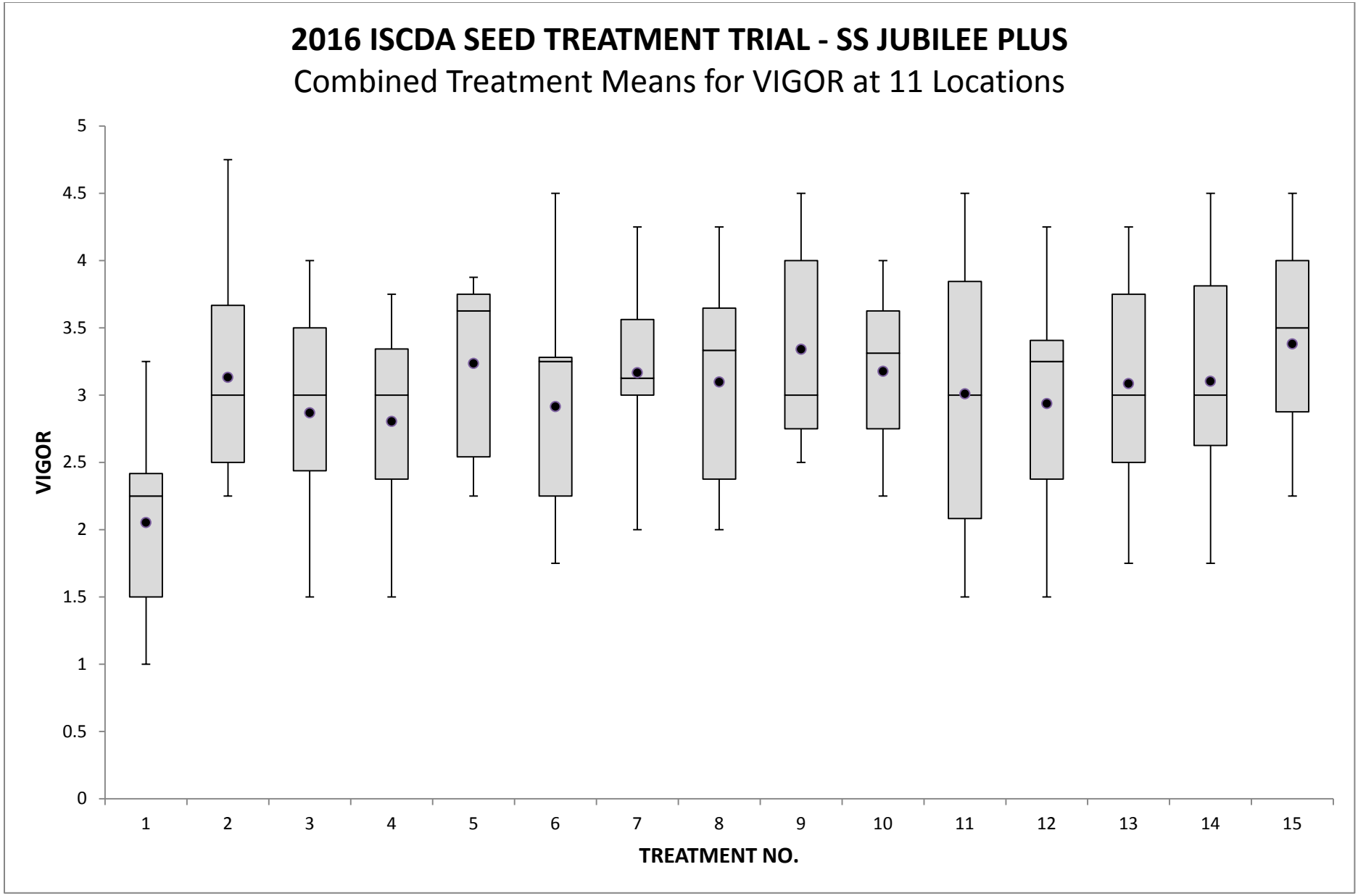

FIGURE 5. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for SS JUBILEE PLUS at 11 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.

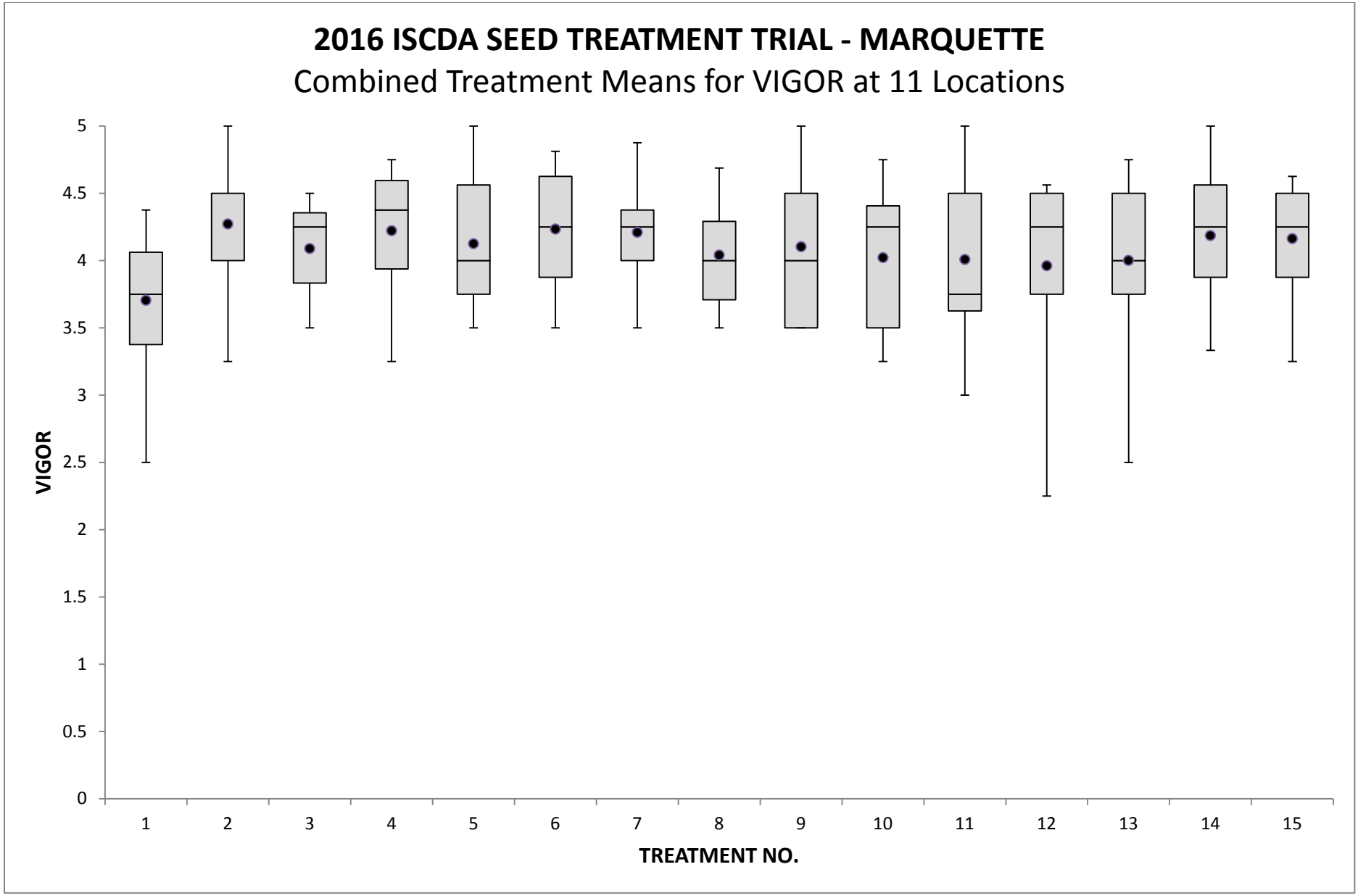

FIGURE 6. 2016 ISCDA Seed Treatment Trial – Box and whisker plot of combined treatment means for VIGOR for MARQUETTE at 11 locations. The mean for each treatment is indicated by • . The box indicates the interquartile range for results (divided by the median), and the whiskers span to the minimum and maximum results for each treatment.