

# Bayer Low Tunnel Volatility Study

Summary of 20-ARL-SB23 study

*Rodrigo Werle<sup>1</sup>, Ryan DeWerff<sup>2</sup>, Nick Arneson<sup>3</sup>, Sarah Striegel<sup>4</sup>, Nikola Arsenijevic<sup>5</sup>, Felipe Faleco<sup>5</sup>, Kolby Grint<sup>5</sup>, Haleigh Ortmeier-Clarke<sup>5</sup>, Jose Nunes<sup>6</sup> and Emily Gleason<sup>7</sup>*

*<sup>1</sup> Principal Investigator, <sup>2</sup> Research Technician, <sup>3</sup> Outreach Research and Extension Associate, <sup>4</sup> Former Graduate Student, <sup>5</sup> Graduate Student, <sup>6</sup> Visiting Scholar, <sup>7</sup> Undergraduate Research Assistant*



**Cropping Systems Weed Science**

UNIVERSITY OF WISCONSIN-MADISON

## **Contents**

Methods.....	5
Results.....	7

## **List of Figures**

Figure 1. Nontreated Check at 28 DAT.....	12
Figure 2. MON 76980 + MON 79789 + MON 301656 at 28 DAT.....	13
Figure 3. MON 76980 + MON 79789 + MON 301656 + MON 51817 – VaporGrip at 28 DAT.....	14
Figure 4. MON 301822 + MON 79789 at 28 DAT.....	15
Figure 5. MON 301859 + MON 79789 at 28 DAT.....	16
Figure 6. MON 301621 at 28 DAT.....	17
Figure 7. MON 301848 at 28 DAT.....	18
Figure 8. MON 301848 + MON 51817 – VaporGrip at 28 DAT.....	19

## List of Tables

Table 1. Weather conditions in the 48 h period of flat placement under the low tunnels at the University of Wisconsin-Madison Arlington Agriculture Research Station.....	6
Table 2. Sum of soybean stand count, sum of injured plants and the % of injured soybean plants 14 and 28 days after treatment in the three replications within 25 ft quadrant at the University of Wisconsin-Madison Arlington Agriculture Research Station.....	11

## Methods

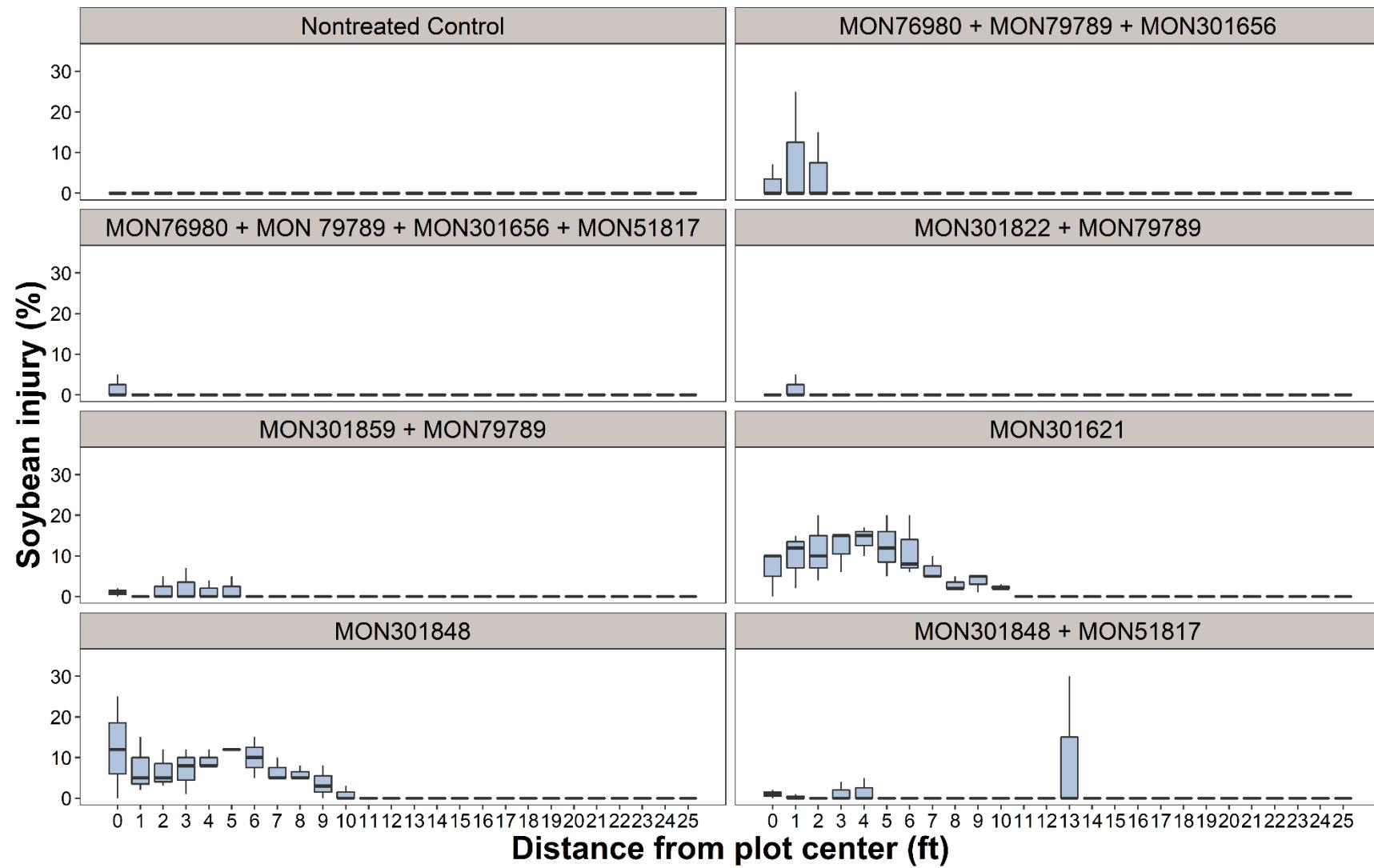
- Soybean variety: CZ 1549GTLL
- Soybean seeding rate: 140,000 seeds ac<sup>-1</sup> at 1.5" depth
- Soybean row width: 30" row width
- Soybean planting date: June 15
- Plot maintenance:
  - PRE herbicide treatment – June 15, 2 pts ac<sup>-1</sup> Prefix + 22 fl oz ac<sup>-1</sup> Roundup PowerMax
  - POST herbicide treatment – DATE, 22 fl oz ac<sup>-1</sup> Roundup PowerMax + 8.5 lbs AMS/100 gal
- Herbicide treatment (flats): 9:00 to 9:30 am July 13
- Soybean stage at flat application: V4
- Flat removal from low-tunnel: 3:45 to 5 pm July 14
- Results presented at 14 and 28 days after treatment (DAT)
- Photos taken at 28 DAT

Table 1. Weather conditions in the 48 h period of flat placement under the low tunnels at the University of Wisconsin-Madison Arlington Agriculture Research Station.

Date	Soil Flat Temp (F)			Temp at 6 in (F)			Temp at 27 in (F)			Relative Humidity (%)			Air Temp (1 m; F)			Rainfall (in)
	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	Avg	Max	Min	
0-24 h	79.2	103.8	65.3	75.4	92.7	63.9	74.1	90.3	64.0	75.4	94.5	49.3	72.2	83.2	63.7	0.4
24-48 h	84.4	93.3	76.6	80.1	86.6	74.1	78.7	83.6	74.0	65.5	71.9	61.0	77.9	82.0	73.7	0.0

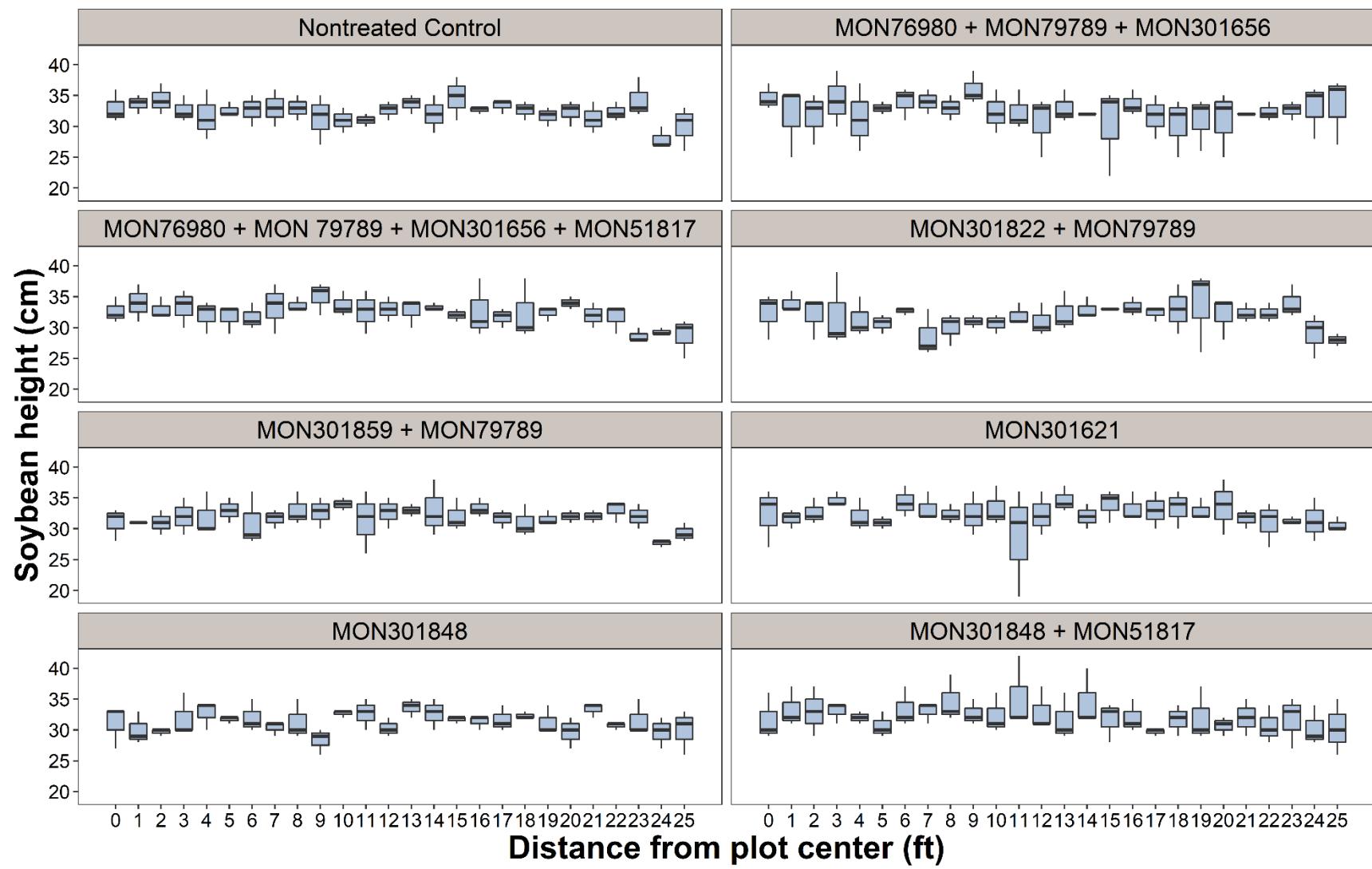
## Results

### 20-ARL-SB23 at 14 DAT



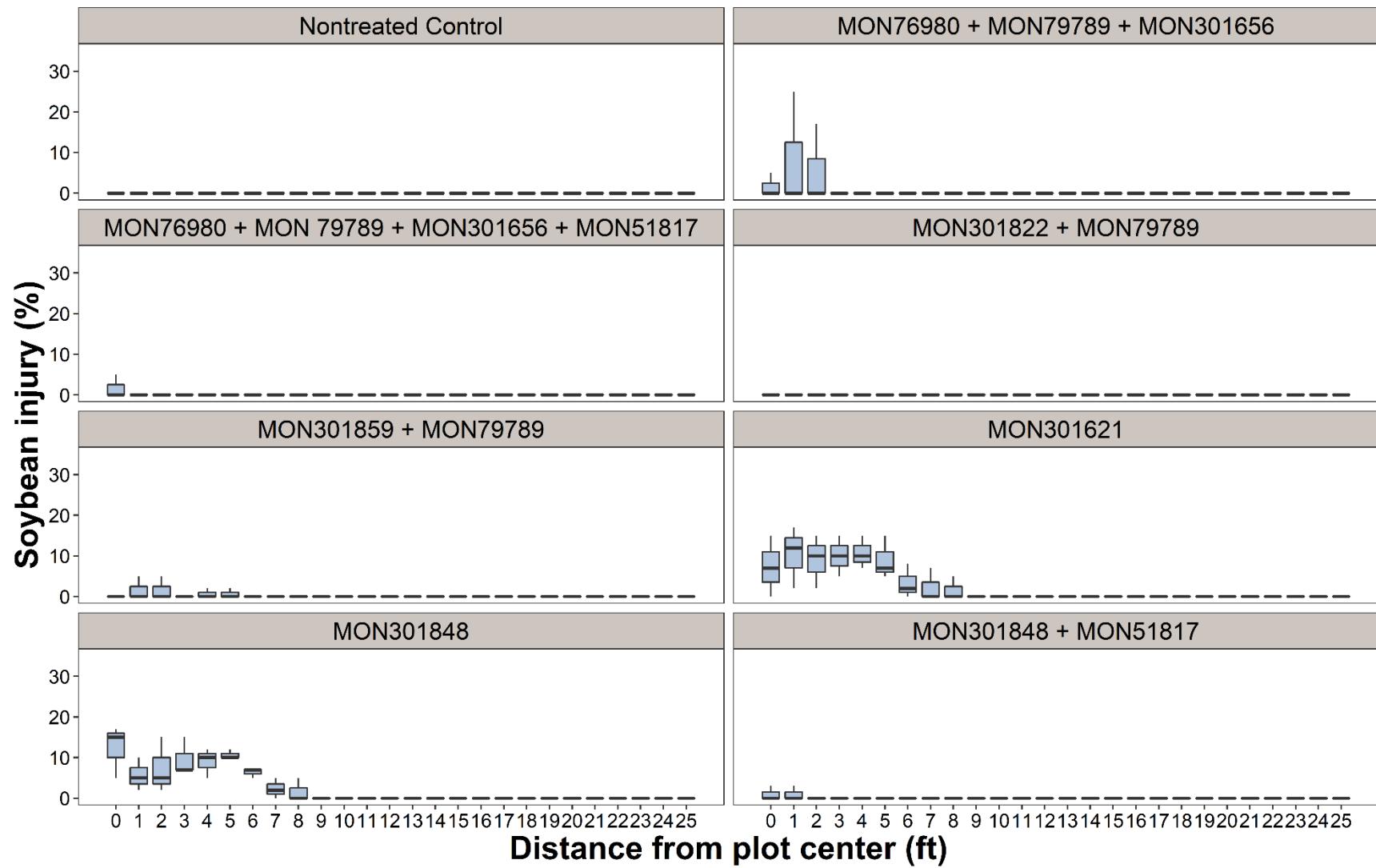
Source: University of Wisconsin-Madison Cropping Systems Weed Science, 2020

## 20-ARL-SB23 at 14 DAT



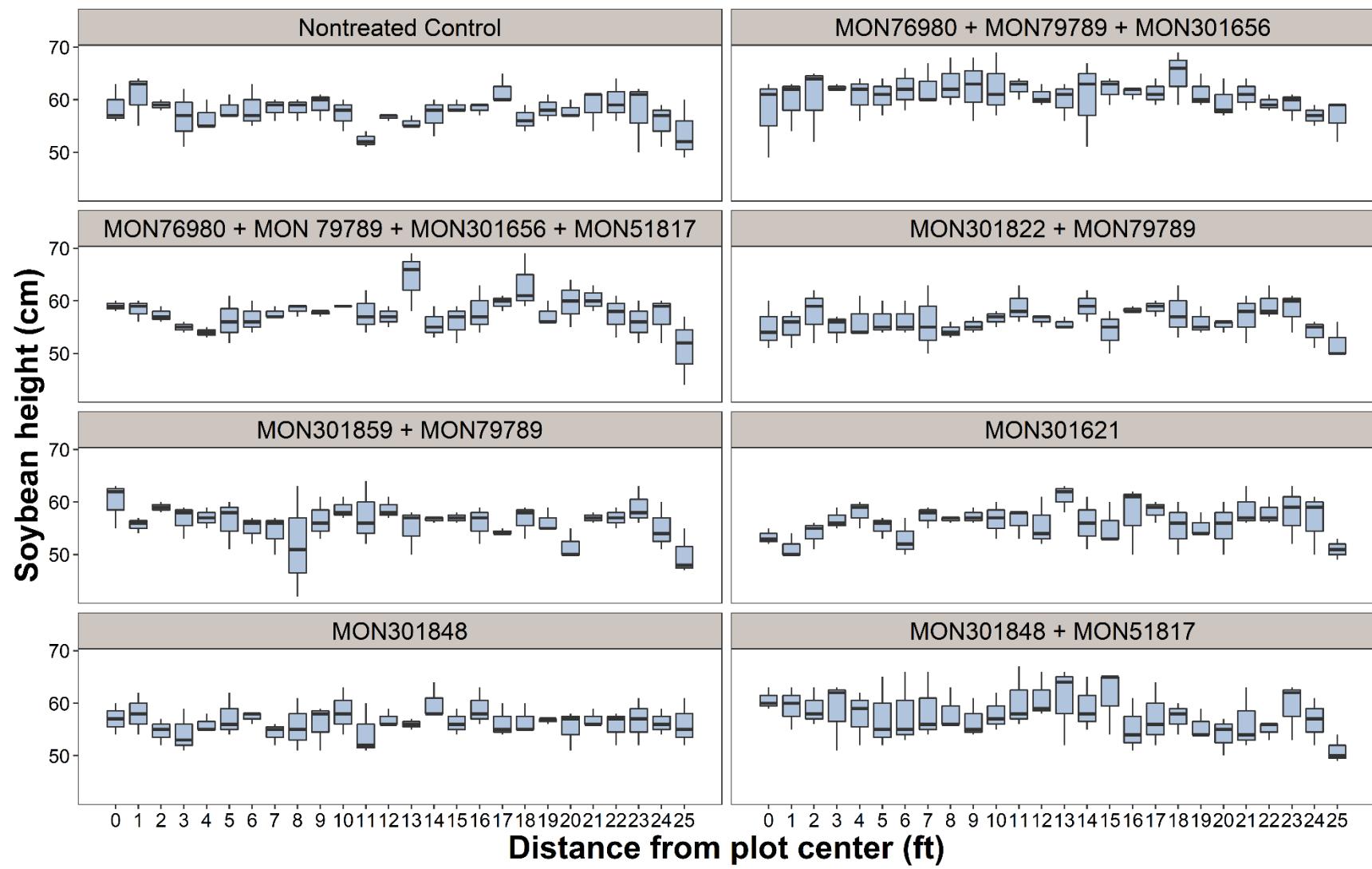
Source: University of Wisconsin-Madison Cropping Systems Weed Science, 2020

## 20-ARL-SB23 at 28 DAT



Source: University of Wisconsin-Madison Cropping Systems Weed Science, 2020

## 20-ARL-SB23 at 28 DAT



Source: University of Wisconsin-Madison Cropping Systems Weed Science, 2020

Table 2. Sum of soybean stand count, sum of injured plants and the % of injured soybean plants 14 and 28 days after treatment in the three replications within 25 ft quadrant at the University of Wisconsin-Madison Agriculture Research Station.

Treatment	Stand count	Injured plants		% Injured plants	
		14	28	14	28
Nontreated Check	157	0	0	0	0.0
MON 76980 + MON 79789 + MON 301656	169	4	8	2.4	4.5
MON 76980 + MON 79789 + MON 301656 + MON 51817 – VaporGrip	159	2	0	1.4	0.0
MON 301822 + MON 79789	179	1	0	0.8	0.0
MON 301859 + MON 79789	178	4	3	2.5	1.6
MON 301621	151	50	49	32.8	32.4
MON 301848	171	59	61	34.5	35.8
MON 301848 + MON 51817 - VaporGrip	166	7	3	4.4	1.5



Figure 1. Nontreated Check at 28 DAT.



Figure 2. MON 76980 + MON 79789 + MON 301656 at 28 DAT.



Figure 3. MON 76980 + MON 79789 + MON 301656 + MON 51817 – VaporGrip at 28 DAT.



Figure 4. MON 301822 + MON 79789 at 28 DAT.



Figure 5. MON 301859 + MON 79789 at 28 DAT.



Figure 6. MON 301621 at 28 DAT.



Figure 7. MON 301848 at 28 DAT.



Figure 8. MON 301848 + MON 51817 – VaporGrip at 28 DAT.