

Sugar End Evaluation (1900 Series)

Location: Inkster, ND
Plot design: 4 rows X 30 feet X 4 reps; RCBD
All 4 rows were sprayed; foliar disease data was taken from the center 2 rows.

Planting date: June 3, 2011
Row width: 36 inches
Seed spacing: 14 inches
Cultivar: Russet Burbank
50% Emergence: June 22

Herbicide: Matrix (1.5 oz / a) + Ad-Wet 90 Plus (1.0 pt / 100gal); July 3

Fertilizer: Broadcast: 61#N, 200#K, 30#S; May 26
Starter: 29#N, 100#P; June 3
Sidedress: 59#N; June 30
Fertigation: 30#N; August 9
20#N; August 16

Insecticide: Admire Pro (8.7 oz/a) + Ultra Flourish (12.2 oz/a); in furrow at plant
Kaiso (2.0 oz/a); August 11

Objective: Determine effect of foliar applications of QoI on sugar end development as a result of water stress.

Fungicide application dates: July 15, 22, 28, August 4, 11, 18, 23, September 1, 6

Fungicide application method: Fungicide applications 1 and 3 in treatments 1904, 1905, 1910, and 1912 were performed using a hand held CO₂ sprayer with 5 gallons of water per acre (GPA) as indicated by the protocol. All other fungicides were applied using a converted ATV with 60 GPA of water (55 psi; 61 gpa; 11005XR nozzles).

Fungicide overspray dates:

July 28	Presidio (4.0 oz/a)
August 4	Presidio (4.0 oz/a)
August 11	Ranman (2.75 oz/a)
August 18	Ranman (2.75 oz/a)
August 26	Presidio (4.0 oz/a)
September 2	Revus (8 oz/a)
September 8	Omega (5.5 oz/a)

Vinekill: Killing frost; September 14
Rotobeat; October 17

Harvest: October 20

NDSU fry evaluation: November 21, December 20, January 18, February 22

Lamb Weston fry evaluation: November 7, January 20, March 1, April 2

Sugar evaluation: December 7, February 1

NDSU Fry Protocol: Three tubers (170-227 g each) were cut into fries (1 cm², the full length of the tuber) using a manual cutter (Ductile, Bloomfield, Indiana, or Cabela's model AUFA International Corp). Nine central fries from each tuber were rinsed in cool water and fried in vegetable oil (Flavorite) at 375°F for 3.5 minutes. Fries were visually graded using the USDA Fry Color chart for fry color and sugar end (stem end fry color) color if different from the main body of the fry. The USDA scale defines a range of color from 000 to 4.0, with lower numbers indicating lighter color. A rating of 2.0 or lower is considered acceptable by the industry. In order to conduct statistical analysis of the data, a 000 was scored as 0.1, 00 as 0.3, and a 0 as 0.5. Average fry color, percent sugar ends, and average sugar end fry color were calculated. Mottling and vascular discoloration also were noted if present.

Sugar end analyses were performed in two ways. Common industry practice is to grade any stem end with a color score of 3.0 or higher on the USDA scale, as a sugar end. In addition to analyzing the data using the industry standard, in the present study, a sugar end was defined as any stem end which varied by one or more scale unit darker from the main body of the fry. Therefore, this definition of sugar end is more stringent, and will result in higher levels of sugar ends, than that used in the processing industry.

Lamb Weston Fry Protocol: Two sets of ratings were performed by Lamb Weston on each date. For the first set, raw product was fried at 375°F for 3 min., for the second set, raw product first was blanched for 10 min. at 175°F and subsequently fried for 3 min. at 375°F. In both sets, sugar ends were scored if a color of #3 or greater was observed in at least 1/3 of the stem end of the final fry product.

Treatment	Rate	Schedule	Notes	Foliar Disease (% Severity)									AUDPC	RAUDPC	Total Yield (cwt/a)
				7/13	7/20	7/27	8/2	8/9	8/16	8/24	8/29	9/12			
1909 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.0	0.11	0.15	0.10	0.18	0.28	0.24	0.14	1.53	18.7	0.003	531.1
1910 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.0	0.09	0.13	0.05	0.13	0.33	0.26	0.13	1.08	14.6	0.002	531.6
1911 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.0	0.11	0.11	0.14	0.11	0.24	0.14	0.18	1.79	19.5	0.003	543.9
1912 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.0	0.09	0.11	0.11	0.12	0.25	0.42	0.34	1.49	22.1	0.004	532.6
LSD _P = 0.05				.	NS	0.09	0.08	NS	NS	0.17	0.16	NS	NS	NS	NS

2010 Sugar End Evaluation - Inkster Series 1900
NDSU Fry Analysis (11/21/11)

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration
1901 Luna Tranquility Echo Zn Scala + Dithane	11.0 fl oz / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.71	1.5	41.5	25.0	25.0	0.0
1902 Scala Echo Zn Luna Tranquility + Dithane	7.0 fl oz / a 2.125 pt / a 11.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.88	1.0	16.5	0.0	0.0	0.0
1903 Reason + Bond + Dithane Echo Zn Scala + Dithane	6.9 fl oz / a + 0.1% v/v + 1.5 lb / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.83	1.2	33.3	0.0	0.0	0.0
1904 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.71	0.9	16.8	0.0	0.0	0.0
1905 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.54	0.7	24.8	0.0	8.3	25.0
1906 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.67	1.1	41.5	0.0	0.0	0.0
1907 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.54	0.8	33.3	0.0	0.0	25.0
1908 Manzate Bravo Zn	2.0 lb / a 2.125 pt / a	1,3,5,7,9 2,4,6,8,10	60 GPA ATV	0.54	0.6	8.3	0.0	0.0	16.5

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration	
1909	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.79	1.5	41.5	33.3	0.0	0.0
1910	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.53	0.9	25.0	0.0	0.0	0.0
1911	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.58	1.0	41.5	0.0	0.0	0.0
1912	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.30	0.3	0.0	0.0	0.0	0.0
LSD _{P = 0.05}				NS	NS	NS	NS	NS	NS	NS

^aFry color scores: 0.1 corresponds to 000, 0.3 corresponds to 00, 0.5 corresponds to 0, 1.0 equals 1.0 and subsequent numbers follow rating scale for scale of 000 to 4.0.

^bFry color score for the stem end of the tuber. Any stem end darker than the main fry is considered a sugar end, the worst case scenario.

^cPercent sugar end was defined as any stem end which varied by one or more scale unit darker from the main body of the fry.

^dPercent sugar end based on fry color greater than or equal to a score of 3 in less than or equal to 1/3 of the length of the stem end of the fry, as per French fry industry protocol.

2010 Sugar End Evaluation - Inkster Series 1900
NDSU Fry Analysis (12/20/11)

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration
1901 Luna Tranquility Echo Zn Scala + Dithane	11.0 fl oz / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.9	1.1	33.3	0.0	0.0	33.3
1902 Scala Echo Zn Luna Tranquility + Dithane	7.0 fl oz / a 2.125 pt / a 11.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.4	0.4	0.0	0.0	0.0	0.0
1903 Reason + Bond + Dithane Echo Zn Scala + Dithane	6.9 fl oz / a + 0.1% v/v + 1.5 lb / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.3	0.4	8.3	0.0	0.0	0.0
1904 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.4	0.4	0.0	0.0	0.0	0.0
1905 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.3	0.3	0.0	0.0	0.0	0.0
1906 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.4	0.4	0.0	0.0	0.0	0.0
1907 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.5	0.5	0.0	0.0	0.0	0.0
1908 Manzate Bravo Zn	2.0 lb / a 2.125 pt / a	1,3,5,7,9 2,4,6,8,10	60 GPA ATV	0.3	0.4	16.5	0.0	0.0	0.0

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration	
1909	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.3	0.4	16.8	0.0	0.0	0.0
1910	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.3	0.4	16.5	0.0	0.0	16.8
1911	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.3	0.4	24.8	0.0	0.0	0.0
1912	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.4	0.5	8.3	0.0	0.0	0.0
LSD _{P = 0.05}				0.3	0.3	NS	.	.	NS	

^aFry color scores: 0.1 corresponds to 000, 0.3 corresponds to 00, 0.5 corresponds to 0, 1.0 equals 1.0 and subsequent numbers follow rating scale for scale of 000 to 4.0.

^bFry color score for the stem end of the tuber. Any stem end darker than the main fry is considered a sugar end, the worst case scenario.

^cPercent sugar end was defined as any stem end which varied by one or more scale unit darker from the main body of the fry.

^dPercent sugar end based on fry color greater than or equal to a score of 3 in less than or equal to 1/3 of the length of the stem end of the fry, as per French fry industry protocol.

2010 Sugar End Evaluation - Inkster Series 1900
NDSU Fry Analysis (1/18/12)

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration
1901 Luna Tranquility	11.0 fl oz / a	1,3	60 GPA ATV	0.6	1.2	66.8	0.0	0.0	8.3
Echo Zn	2.125 pt / a	2,5-8,10							
Scala +	7.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1902 Scala	7.0 fl oz / a	1,3	60 GPA ATV	0.6	0.6	8.3	0.0	0.0	0.0
Echo Zn	2.125 pt / a	2,5-8,10							
Luna Tranquility +	11.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1903 Reason +	6.9 fl oz / a +	1,3	60 GPA ATV	0.6	0.8	16.5	0.0	0.0	0.0
Bond +	0.1% v/v +								
Dithane	1.5 lb / a								
Echo Zn	2.125 pt / a	2,5-8,10							
Scala +	7.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1904 Aproach	9.0 fl oz / a	1,3	5 GPA Hand	0.4	1.0	50.0	0.0	0.0	8.3
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1905 Aproach	16.0 fl oz / a	1,3	5 GPA Hand	0.4	0.6	41.5	0.0	0.0	8.3
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1906 Aproach	9.0 fl oz / a	1,3	60 GPA ATV	0.5	1.5	66.5	25.0	0.0	0.0
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1907 Aproach	16.0 fl oz / a	1,3	60 GPA ATV	0.3	1.3	58.3	16.8	8.3	25.0
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1908 Manzate	2.0 lb / a	1,3,5,7,9	60 GPA ATV	0.5	1.4	50.0	25.0	8.3	0.0
Bravo Zn	2.125 pt / a	2,4,6,8,10							

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration	
1909	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.5	1.7	58.3	33.5	8.3	25.0
1910	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.8	1.6	25.0	25.0	41.8	0.0
1911	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.4	1.6	75.0	33.3	0.0	0.0
1912	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.3	0.5	50.0	0.0	0.0	0.0
LSD _{P = 0.05}				NS	NS	NS	NS	22.1	NS	

^aFry color scores: 0.1 corresponds to 000, 0.3 corresponds to 00, 0.5 corresponds to 0, 1.0 equals 1.0 and subsequent numbers follow rating scale for scale of 000 to 4.0.

^bFry color score for the stem end of the tuber. Any stem end darker than the main fry is considered a sugar end, the worst case scenario.

^cPercent sugar end was defined as any stem end which varied by one or more scale unit darker from the main body of the fry.

^dPercent sugar end based on fry color greater than or equal to a score of 3 in less than or equal to 1/3 of the length of the stem end of the fry, as per French fry industry protocol.

2010 Sugar End Evaluation - Inkster Series 1900
NDSU Fry Analysis (2/22/12)

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration
1901 Luna Tranquility	11.0 fl oz / a	1,3	60 GPA ATV	0.8	0.9	16.5	0.0	0.0	8.3
Echo Zn	2.125 pt / a	2,5-8,10							
Scala +	7.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1902 Scala	7.0 fl oz / a	1,3	60 GPA ATV	0.4	0.9	33.5	16.8	0.0	0.0
Echo Zn	2.125 pt / a	2,5-8,10							
Luna Tranquility +	11.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1903 Reason +	6.9 fl oz / a +	1,3	60 GPA ATV	0.4	0.9	58.3	0.0	25.0	0.0
Bond +	0.1% v/v +								
Dithane	1.5 lb / a								
Echo Zn	2.125 pt / a	2,5-8,10							
Scala +	7.0 fl oz / a +	4,9							
Dithane	1.5 lb / a								
1904 Aproach	9.0 fl oz / a	1,3	5 GPA Hand	0.9	0.9	8.3	0.0	0.0	0.0
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1905 Aproach	16.0 fl oz / a	1,3	5 GPA Hand	0.8	2.0	75.0	8.3	0.0	8.3
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1906 Aproach	9.0 fl oz / a	1,3	60 GPA ATV	0.5	1.9	75.0	0.0	0.0	0.0
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1907 Aproach	16.0 fl oz / a	1,3	60 GPA ATV	0.5	1.4	58.5	25.0	0.0	0.0
Manzate	2.0 lb / a	5,7,9							
Bravo Zn	2.125 pt / a	2,4,6,8,10							
1908 Manzate	2.0 lb / a	1,3,5,7,9	60 GPA ATV	0.5	1.6	75.0	0.0	0.0	33.3
Bravo Zn	2.125 pt / a	2,4,6,8,10							

Treatment	Rate	Schedule	Notes	Fry Color ^a	Sugar End Color ^b	% Sugar Ends ^c	% Sugar Ends (#3) ^d	% Mottled Fries	% Fries with Dark Vascular Discoloration	
1909	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.6	0.8	25.0	0.0	0.0	16.8
1910	Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.5	0.8	41.5	0.0	0.0	0.0
1911	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.4	1.1	66.8	0.0	0.0	0.0
1912	Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.3	0.4	8.3	0.0	0.0	0.0
LSD _{P = 0.05}				0.3	0.7	46.9	NS	NS	NS	

^aFry color scores: 0.1 corresponds to 000, 0.3 corresponds to 00, 0.5 corresponds to 0, 1.0 equals 1.0 and subsequent numbers follow rating scale for scale of 000 to 4.0.

^bFry color score for the stem end of the tuber. Any stem end darker than the main fry is considered a sugar end, the worst case scenario.

^cPercent sugar end was defined as any stem end which varied by one or more scale unit darker from the main body of the fry.

^dPercent sugar end based on fry color greater than or equal to a score of 3 in less than or equal to 1/3 of the length of the stem end of the fry, as per French fry industry protocol.

2010 Sugar End Evaluation - Inkster Series 1900
Lamb Weston Fry Analysis (11-7-11)

Treatment	Rate	Schedule	Notes	Raw Fry				Blanch Fry			Total Defects / lb
				Color Score	0 & 1 (%)	% Sugar Ends	Total Color	Color Score	% Sugar Ends	Total Color	
1901 Luna Tranquility	11.0 fl oz / a	1,3	60 GPA ATV	0.12	97.0	0.0	0.12	0.00	0.0	0.00	0.5
Echo Zn	2.125 pt / a	2,5-8,10									
Scala +	7.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1902 Scala	7.0 fl oz / a	1,3	60 GPA ATV	0.10	97.0	0.0	0.10	0.00	0.0	0.00	0.1
Echo Zn	2.125 pt / a	2,5-8,10									
Luna Tranquility +	11.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1903 Reason +	6.9 fl oz / a +	1,3	60 GPA ATV	0.12	98.0	0.0	0.12	0.00	0.0	0.00	0.5
Bond +	0.1% v/v +										
Dithane	1.5 lb / a										
Echo Zn	2.125 pt / a	2,5-8,10									
Scala +	7.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1904 Aproach	9.0 fl oz / a	1,3	5 GPA Hand	0.07	99.0	0.0	0.07	0.00	0.0	0.00	0.1
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1905 Aproach	16.0 fl oz / a	1,3	5 GPA Hand	0.12	98.0	1.0	0.13	0.00	0.0	0.00	0.5
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1906 Aproach	9.0 fl oz / a	1,3	60 GPA ATV	0.04	100.0	1.0	0.05	0.00	0.0	0.00	0.5
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1907 Aproach	16.0 fl oz / a	1,3	60 GPA ATV	0.08	100.0	0.0	0.08	0.00	0.0	0.00	0.2
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1908 Manzate	2.0 lb / a	1,3,5,7,9	60 GPA ATV	0.08	100.0	0.0	0.08	0.00	0.0	0.00	0.3
Bravo Zn	2.125 pt / a	2,4,6,8,10									

Treatment	Rate	Schedule	Notes	Raw Fry				Blanch Fry			Total Defects / lb
				Color Score	0 & 1 (%)	% Sugar Ends	Total Color	Color Score	% Sugar Ends	Total Color	
1909 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.08	99.0	0.0	0.08	0.00	0.0	0.00	0.5
1910 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.07	100.0	1.0	0.08	0.01	1.0	0.02	0.4
1911 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.12	100.0	0.0	0.12	0.00	0.0	0.00	1.0
1912 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.12	98.0	0.0	0.12	0.02	0.0	0.02	0.8
LSD _{P = 0.05}				NS	NS	NS	NS	NS	NS	0.01	NS

2010 Sugar End Evaluation - Inkster Series 1900
Lamb Weston Fry Analysis (1-20-12)

Treatment	Rate	Schedule	Notes	Raw Fry				Blanch Fry			Total Defects / lb
				Color Score	0 & 1 (%)	% Sugar Ends	Total Color	Color Score	% Sugar Ends	Total Color	
1901 Luna Tranquility	11.0 fl oz / a	1,3	60 GPA ATV	0.11	99.0	2.0	0.14	0.00	0.00	0.00	2.3
Echo Zn	2.125 pt / a	2,5-8,10									
Scala +	7.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1902 Scala	7.0 fl oz / a	1,3	60 GPA ATV	0.03	100.0	1.0	0.04	0.00	0.00	0.00	0.5
Echo Zn	2.125 pt / a	2,5-8,10									
Luna Tranquility +	11.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1903 Reason +	6.9 fl oz / a +	1,3	60 GPA ATV	0.08	100.0	1.0	0.09	0.01	0.00	0.01	1.5
Bond +	0.1% v/v +										
Dithane	1.5 lb / a										
Echo Zn	2.125 pt / a	2,5-8,10									
Scala +	7.0 fl oz / a +	4,9									
Dithane	1.5 lb / a										
1904 Aproach	9.0 fl oz / a	1,3	5 GPA Hand	0.10	99.0	1.0	0.13	0.00	0.00	0.00	0.8
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1905 Aproach	16.0 fl oz / a	1,3	5 GPA Hand	0.06	100.0	0.0	0.06	0.00	0.00	0.00	1.8
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1906 Aproach	9.0 fl oz / a	1,3	60 GPA ATV	0.06	100.0	0.0	0.06	0.00	0.00	0.00	1.1
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1907 Aproach	16.0 fl oz / a	1,3	60 GPA ATV	0.15	98.0	0.0	0.15	0.00	0.00	0.00	1.5
Manzate	2.0 lb / a	5,7,9									
Bravo Zn	2.125 pt / a	2,4,6,8,10									
1908 Manzate	2.0 lb / a	1,3,5,7,9	60 GPA ATV	0.06	100.0	1.0	0.09	0.00	1.00	0.02	0.5
Bravo Zn	2.125 pt / a	2,4,6,8,10									

Treatment	Rate	Schedule	Notes	Raw Fry				Blanch Fry			Total Defects / lb
				Color Score	0 & 1 (%)	% Sugar Ends	Total Color	Color Score	% Sugar Ends	Total Color	
1909 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.04	99.0	2.0	0.07	0.00	0.0	0.00	0.7
1910 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.16	96.0	10.0	0.33	0.00	1.0	0.01	0.2
1911 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.05	100.0	2.0	0.08	0.00	0.0	0.00	0.0
1912 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.09	98.0	1.0	0.11	0.01	1.0	0.02	0.3
LSD _{P = 0.05}				NS	3.3	NS	0.14	NS	NS	NS	NS

2010 Sugar End Evaluation - Inkster Series 1900

Treatment	Rate	Schedule	Notes	12/7/2011		2/1/2012	
				% Glucose	% Sucrose	% Glucose	% Sucrose
1901 Luna Tranquility Echo Zn Scala + Dithane	11.0 fl oz / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.10	0.11	0.06	0.07
1902 Scala Echo Zn Luna Tranquility + Dithane	7.0 fl oz / a 2.125 pt / a 11.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.04	0.10	0.04	0.08
1903 Reason + Bond + Dithane Echo Zn Scala + Dithane	6.9 fl oz / a + 0.1% v/v + 1.5 lb / a 2.125 pt / a 7.0 fl oz / a + 1.5 lb / a	1,3 2,5-8,10 4,9	60 GPA ATV	0.13	0.11	0.09	0.10
1904 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.05	0.09	0.03	0.09
1905 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.11	0.07	0.04	0.08
1906 Aproach Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.10	0.08	0.08	0.10
1907 Aproach Manzate Bravo Zn	16.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.08	0.10	0.04	0.08
1908 Manzate Bravo Zn	2.0 lb / a 2.125 pt / a	1,3,5,7,9 2,4,6,8,10	60 GPA ATV	0.07	0.09	0.06	0.08

Treatment	Rate	Schedule	Notes	12/7/2011		2/1/2012	
				% Glucose	% Sucrose	% Glucose	% Sucrose
1909 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.06	0.08	0.05	0.09
1910 Headline + Activator 90 Manzate Bravo Zn	9.0 fl oz / a + 0.25% v/v 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.10	0.11	0.06	0.08
1911 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	60 GPA ATV	0.11	0.09	0.07	0.09
1912 Quadris Manzate Bravo Zn	9.0 fl oz / a 2.0 lb / a 2.125 pt / a	1,3 5,7,9 2,4,6,8,10	5 GPA Hand	0.07	0.10	0.06	0.10
LSD _{P = 0.05}				NS	NS	NS	0.02