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2008 Michigan Grass Variety Trials Report

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Comments on the 2008 Growing Season

Winter kill of perennial ryegrass, festulolium, and one cultivar of orchardgrass was evident in the spring. A cold, snowless period in February may have been the cause. Cooler temperatures in the spring resulted in late first cuttings and reduced first cutting yields. Temperatures across the state dipped into the mid-20 degree F range in late-April and again on May 28 which resulted in damaging frost and reduced growth. An extended dry period from mid-July to early-September reduced late-season yields in East Lansing. Growing season precipitation amounts are presented for each location in Table 1.

Grass variety trials are seeded with a Carter Nursery seeder in plot lengths of 15 ft. or more at a width of 3 or 6 ft into a conventionally prepared seedbed. Species evaluated include: brome, Perennial ryegrass, hybrid ryegrass, Italian ryegrass, festulolium, orchardgrass, timothy, Kentucky bluegrass and Tall fescue. Weeds are controlled with herbicide when necessary and soil tests are taken and amendments are made annually. Hay trials, both annual and perennial (East Lansing, location 2) are harvested when leaf lengths of 12+ inches or just prior to boot stage, and grazing trials (Lake City, location 1) are harvested at 8+inches using Angus steers. Grazing trials (plots are mowed following grazing events if grass residual heights are greater than 6 inches. Nitrogen is applied in the form of urea (early spring) or ammonium sulfate at a rate of 50 lbs of actual N/acre at green-up and following each harvest. The 2008 annual ryegrass trial was seeded in East Lansing on Apr. 21 and three cuttings were taken. The 2008 Upper Peninsula trial was successfully seeded in Chatham but no harvests were taken. Visual ratings of winterkill/injury are presented within each table for East Lansing and for the 2005 trial at Lake City.



Lake City (44.35°N) in Northern Lower Michigan

Lake City (location 1) is 130 miles north of East Lansing and has colder winters than East Lansing and less snow than Chatham. Trials here are managed as intensively grazed pastures with nitrogen fertilizer applications at green-up and following grazing events. Persistence under livestock hoof pressures and repeated, close-grazing events are monitored. Trials at Lake City are usually grazed three to four times per year. The 2005 trial was inadvertently grazed in June, therefore no data was obtained. Yield data is presented in tables 2 and 3, and forage quality is

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reported in tables 4 and 5 for the 2005 and 2006 seedings. An animal preference rating (based on a visual estimate of stand consumption) is included for the 2006 trial.

East Lansing (42.72°N) in Southern Lower Michigan

Four hay grass variety trials (3 perennial & 1 annual) were harvested at East Lansing in southern lower-Michigan (location 2). East Lansing trials are located at the Crop and Soil Sciences Agronomy Farm. Four cuttings are normally obtained from the grass trials at this location. Grass plots are blocked by species and an entire block is harvested at the same time so maturity will vary; however, the goal is to harvest in the boot stage. Yield and winterkill / injury data are reported in tables 4-6 for established perennial trials. The 2008 annual ryegrass variety trial was harvested three times; yield and forage quality results are presented in table 7.

Statistics

Data are analyzed using PROC GLM or MIXED in SAS v. 8.2 software (Cary, NC). Means and Fischer’s Least Significant Difference (LSD) are reported at the bottom of each column. The LSD is used to compare values *within* a column and is the minimum difference between two values for a “real” difference to exist. The alpha level for the LSD in these trials was 0.05 or 5%, which means, we are 95% certain that values differing by more than the LSD are not due to chance.

Table 1.

2008 Precipitation (inches)

	Lake City			East Lansing		
	Norm*	2008	dev	Norm*	2008	dev
Apr	2.88	3.49	0.61	2.81	2.15	-0.66
May	2.67	1.79	-0.88	2.73	1.36	-1.37
June	3.09	7.15	4.06	3.54	4.80	1.26
July	3.26	3.93	0.67	3.02	3.72	0.70
Aug	3.01	2.16	-0.85	3.12	0.50	-2.62
Sept	3.25	2.95	-0.3	2.50	8.42	5.92
Oct	2.65	2.69	0.04	2.20	1.61	-0.59
Total	20.81	24.16	3.35	19.92	22.56	2.64

*30 yr ave.

Table 2.

2005 Lake City Perennial Grass Variety Trial
Missaukee Co., Michigan
 Sown Aug 2005
 Non-irrigated

<i>Species/Marketer</i>	Cultivar	23-May	31-Jul	2008	2007	2006	3-yr.	Winterkill 1 to 10**
		DM tons/acre						
<i>Brome</i>								
public	VNS	0.54	0.72	1.26	2.66	2.55	6.47	1.0
DLF International	AC Knowles	0.34	0.34	0.68	2.67	2.32	5.67	1.3
<i>Bentgrass</i>								
public turf-type	Putter	0.00	0.00	0.00	1.23	0.61	1.84	1.0
Rose-Agriseed, Inc	PST ORAF	0.00	0.37	0.37	0.83	0.64	1.84	1.0
<i>Perennial Ryegrass</i>								
Michigan State Seed Solutions	Sierra	0.06	0.18	0.24	2.33	3.81	6.38	8.8
Michigan State Seed Solutions	Herbie	0.12	0.33	0.45	1.66	3.55	5.66	7.3
<i>Tall fescue</i>								
Fraser Seeds	CNS26	0.31	0.51	0.82	3.34	2.95	7.11	3.3
Pennington Seed	Advance MaxQ	0.35	0.74	1.09	2.91	2.59	6.59	4.0
<i>Orchardgrass</i>								
FFR Cooperative	OG0001	1.16	0.46	1.62	3.99	3.36	8.97	1.0
Mean		0.32	0.41	0.73	2.40	2.49	5.61	3.2
CV%		44	38	35	13	13	12	43
LSD (0.05)‡		0.25	0.24	0.42	0.43	0.60	1.26	1.8

Location: Lake City Experiment Station
 Design: RCB, plot size 3 x 24'
 Seeded: 15-Aug-05
 Soil Type: Nester Sandy loam
 Fertilizer: 150 lbs N/a. (50 lbs/a. following green-up, 50 lbs/a. after cuts 1-2)
 Cuttings: Cattle knocked down the fence and grazed the trial in June, so yields are not available for this harvest.

**Visual Rating of winter kill or injury 1 to 10 (10= 91-100% of stand damaged)

‡95% certain that values which are separated by a number greater than the LSD are statistically different

Table 3.

2006 Lake City Perennial Grass Variety Trial
Missaukee Co., Michigan
 Sown July 2006
 Non-irrigated

<i>Species/Marketer</i>	Cultivar	23-May	25-Jun	3-Aug	2008	2007	2-yr.	Preference 1 to 5**
		DM tons/acre						
<i>Orchardgrass</i>								
Standish Milling	Bounty	1.61	1.32	0.86	3.79	4.90	8.69	4.6
American Grass Seed Producers	Ambrosia	1.21	1.45	1.00	3.66	4.85	8.51	4.5
Standish Milling	Extend	1.18	1.16	1.02	3.36	4.53	7.89	4.7
Columbia Seed/Seed Res. of OR	Harvestar	0.85	1.34	0.89	3.08	4.76	7.84	4.6
<i>Perennial Ryegrass</i>								
Columbia Seed	Verano	0.26	0.57	0.40	1.23	4.14	5.37	4.8
Michigan State Seed Solutions	Eurostar	0.38	0.49	0.38	1.25	4.11	5.36	5.1
<i>Reed canary</i>								
Standish Milling public	Marathon Chiefton	0.77 1.31	1.22 0.92	0.67 0.60	2.66 2.83	4.32 2.52	6.98 5.35	3.8 3.8
<i>Tall fescue</i>								
Standish Milling	Enhance	0.83	1.07	0.95	2.85	4.74	7.59	4.2
American Grass Seed Producers	Verdant	0.69	0.92	0.96	2.57	3.78	6.35	3.6
<i>Timothy</i>								
Allied Seed	Summit	1.24	0.50	0.66	2.40	3.80	6.20	4.8
Allied Seed	Crest	0.96	0.75	0.75	2.46	3.61	6.07	5.1
public	Climax	0.91	0.99	0.48	2.38	3.07	5.45	4.8
	Mean	0.94	0.98	0.74	2.30	4.09	6.74	4.5
	CV%	26	20	31	17	9	9	7
	LSD (0.05)‡	0.35	0.27	0.32	0.6	0.57	0.91	0.4

Location: Lake City Experiment Station
 Design: RCB, plot size 3 x 24'
 Seeded: 24-Jul-06
 Soil Type: Nester Sandy loam
 Fertilizer: 150 lbs N/a. (50 lbs/a. following green-up, 50 lbs/a. after cuts 1-2)

**Visual Rating 1-5 with 5 = 80-100% of plot consumed, 4=60-80%, 3=40-60%, 2=20-40%, 1=0-20%

‡95% certain that values which are separated by a number greater than the LSD are statistically different

Table 4.

2005 Lake City Perennial Grass Variety Trial
Missaukee Co., Michigan
 Sown Aug 2005
 Non-irrigated

<i>Species/Marketer</i>	Cultivar	Cut 1, 2008		Cut 2, 2008	
		CP%	RFV	CP%	RFV
<i>Brome</i>					
public	VNS	14.9	135.0	16.4	104.2
DLF International	AC Knowles	16.7	154.0	14.9	107.6
<i>Bentgrass</i>					
public turf-type	Putter
Rose-Agriseed, Inc	PST ORAF	.	.	11.7	96.4
<i>Perennial Ryegrass</i>					
Michigan State Seed Solutions	Sierra	17.8	149.1	11.1	97.6
Michigan State Seed Solutions	Herbie	16.6	173.7	11.9	90.8
<i>Tall fescue</i>					
Fraser Seeds	CNS26	17.4	155.9	15.2	99.3
Pennington Seed	Advance MaxQ	16.6	144.7	13.1	96.1
<i>Orchardgrass</i>					
FFR Cooperative	OG0001	17.3	136.0	13.9	88.6
Mean		16.8	149.8	13.5	97.6
CV%		9	6	13	7
LSD (0.05)‡		2.1	13.8	3.1	12.1

Location: Lake City Experiment Station
 Design: RCB, plot size 3 x 24'
 Seeded: 15-Aug-05
 Soil Type: Nester Sandy loam
 Fertilizer: 150 lbs N/a. (50 lbs/a. following green-up, 50 lbs/a. after cuts 1-2)
 ‡95% certain that values which are separated by a number greater than the LSD are statistically different

Table 5.

2006 Lake City Perennial Grass Variety Trial
Missaukee Co., Michigan
 Sown July 2006
 Non-irrigated

<i>Species/Marketer</i>	Cultivar	cut 1, 2008		cut 3, 2008	
		CP%	RFV	CP%	RFV
<i>Orchardgrass</i>					
Standish Milling	Bounty	16.7	122.5	13.7	97.2
American Grass Seed Producers	Ambrosia	18.1	137.6	15.6	98.4
Standish Milling	Extend	15.9	123.3	17.1	101.0
Columbia Seed/Seed Res. of OR	Harvestar	17.5	137.4	15.7	103.5
<i>Perennial Ryegrass</i>					
Columbia Seed	Verano	15.0	205.6	12.3	107.5
Michigan State Seed Solutions	Eurostar	14.4	194.7	13.0	110.0
<i>Reed canary</i>					
Standish Milling	Marathon	18.8	139.2	15.1	105.0
public	Chiefton	17.5	139.6	14.5	113.1
<i>Tall fescue</i>					
Standish Milling	Enhance	17.8	141.7	17.5	115.6
American Grass Seed Producers	Verdant	17.1	143.2	15.8	107.4
<i>Timothy</i>					
Allied Seed	Summit	16.8	145.0	10.7	118.2
Allied Seed	Crest	16.0	152.5	10.1	115.7
public	Climax	17.0	167.8	13.0	120.6
Mean		16.8	150.0	14.2	108.7
CV%		8	4	16	5
LSD (0.05)‡		2.1	10.8	3.7	8.7

Location: Lake City Experiment Station
 Design: RCB, plot size 3 x 24'
 Seeded: 24-Jul-06
 Soil Type: Nester Sandy loam
 Fertilizer: 150 lbs N/a. (50 lbs/a. following green-up, 50 lbs/a. after cuts 1-2)

‡95% certain that values which are separated by a number greater than the LSD are statistically different

Table 6. 2005 East Lansing Perennial Grass Variety Trial
 Ingham Co., Michigan
 Sown April 2005
 Non-irrigated

<i>Species/Marketer</i>	Cultivar	cut 1	cut 2	cut 3	cut 4	2008	2007	2006	3-yr	Winterkill
		DM tons/acre								1 to 10*
<i>Bentgrass</i>										
Rose Agri-Seed, Inc. (turf-type)	PST-ORAF	1.80	1.36	.	.	3.16	2.99	1.95	8.10	1.0
	Putter	0.30	0.55	.	.	0.85	1.83	0.95	3.63	1.0
<i>Brome</i>										
Ampac Seed Company	RAD-BIX28	1.50	1.41	0.45	.	3.36	4.85	6.23	14.44	1.0
Columbia	RAD-BI29	1.63	1.58	0.33	.	3.54	4.73	6.16	14.43	1.0
Public	VNS	1.70	1.41	0.40	.	3.51	4.87	5.63	14.01	1.0
<i>Perennial Ryegrass</i>										
DLF International Seed	Respect (2n)	1.16	0.47	0.58	.	2.21	5.36	5.86	13.43	4.5
Columbia/Seed Research of OR	Elgon (4n)	0.25	0.75	0.70	.	1.70	5.10	6.57	13.37	7.4
Seed Research of OR	Proton (4n)	0.40	0.77	0.43	.	1.60	5.00	6.29	12.89	8.1
Michigan State Seed Solutions	Herbie (2n)	0.40	0.77	0.30	.	1.47	4.85	5.90	12.22	6.5
Mich. State Seed/Lewis Seed Co.	Sierra (2n)	0.64	0.38	0.45	.	1.47	4.87	5.88	12.22	6.5
Seed Research of OR	Laguna (2n)	0.67	0.87	0.38	.	1.92	4.76	5.41	12.09	5.3
Seed Research of OR	Captain (2n)	0.52	0.64	0.45	.	1.61	4.80	5.21	11.62	6.3
<i>Tall fescue</i>										
Michigan State Seed Solutions	Fawn	1.74	1.09	0.48	0.26	3.57	6.44	8.90	18.91	1.0
Rose Agri-Seed, Inc.	PST-5NF	1.50	0.85	0.56	0.27	3.18	5.92	9.25	18.35	1.0
Fraser Seed	CNS26	1.42	0.97	0.55	0.21	3.15	5.67	8.25	17.07	1.0
<i>Timothy</i>										
Michigan State Seed Solutions	Talon	2.74	1.67	0.30	.	4.71	6.21	6.74	17.66	1.0
AMPAC Seed Company	Tuuka	2.06	0.94	0.23	.	3.23	4.09	4.55	11.87	1.0
	Mean	1.20	0.97	0.44	0.25	2.60	4.84	5.88	13.3	3.2
	CV%	22	27	31	38	11	10	9	3	22
	LSD (0.05)†	0.38	0.37	0.19	0.16	0.62	0.69	0.80	0.84	1.0

Location: Mich. State Univ. Exp. Station, East Lansing
 Design: RCB, plot size 3 x 24 (3 x 21 harvested)
 Seeded: 19-Apr-05
 Soil Type: Capac loam, tile drainage
 Fertilizer: 200 lbs N/a. (50 lbs/A following emergence, 50 lbs/A after cuts 1-3)

† 95% certain that values which are separated by a number greater than the LSD are statistically different

*Winter injury: visual rating with a scale 1 to 10, 10 = 91-100% of stand damaged

harvest blocks are grouped by species and harvest is taken when the boot stage is the average for all entries

Table 7. **2006 East Lansing Perennial Grass Variety Trial**
Ingham Co., Michigan
 Sown April 2006
 Non-irrigated

<i>Species</i> /Marketer	Cultivar	cut 1	cut 2	cut 3	cut 4	2008	2007	2006	3-yr	winterkill
		DM tons/acre								
<i>Orchardgrass</i>										
Standish Milling	Extend	1.32	1.04	0.41	0.83	3.60	6.53	1.89	12.02	1.8
Standish Milling	Bounty	1.38	1.00	0.39	0.78	3.55	6.21	2.11	11.87	1.0
DLF International Seed	IS-OG 39	1.53	1.13	0.36	0.69	3.71	6.12	1.94	11.77	1.5
Columbia/Seed Res. of OR	Harvestar	0.78	1.14	0.34	0.84	3.10	6.37	1.88	11.35	3.5
American Grass Seed Prod.	Ambrosia	1.00	1.17	0.42	0.72	3.31	5.91	1.76	10.98	2.8
Ag Research, LTD	AGRDG 101	0.04	0.29	0.01	0.08	0.42	3.50	1.82	5.74	10.0
<i>Perennial Ryegrass</i>										
Lewis Seed	Quartermaster (4n)	0.88	0.79	0.59	.	2.26	4.68	2.66	9.60	7.1
Standish Milling	Boost (2n)	1.08	0.52	0.46	.	2.06	5.00	2.48	9.54	5.9
Michigan St. Seed Solutions	Eurostar (2n)	0.43	0.53	0.60	.	1.56	4.74	2.00	8.30	8.0
Columbia Seed	Verano (4n)	0.17	0.67	0.42	.	1.26	4.53	2.01	7.80	7.6
Cropmark	LP2005GA (4n)	0.09	0.23	0.00	.	0.32	4.21	2.53	7.06	10.0
<i>Tall fescue</i>										
Standish Milling	Enhance	1.61	0.87	0.31	0.75	3.54	6.55	3.37	13.46	1.0
Various sources	Fawn	1.98	0.98	0.25	0.50	3.71	5.78	3.05	12.54	1.0
American Grass Seed Prod.	Verdant	1.57	0.89	0.41	0.42	3.29	6.11	3.00	12.40	1.0
<i>Reed Canary</i>										
Standish Milling	Marathon	1.31	1.25	0.37	0.30	3.23	5.58	3.28	12.09	1.0
Michigan St. Seed Solutions	Chiefton	1.41	1.31	0.30	0.51	3.53	4.37	3.40	11.30	1.0
<i>Timothy</i>										
Allied Seed	Crest	2.69	1.86	0.50	.	5.05	6.76	1.82	13.63	1.0
Allied Seed	Summit	2.34	1.54	0.77	.	4.65	6.84	1.63	13.12	1.0
Michigan St. Seed Solutions	Climax	2.37	1.36	0.63	.	4.36	5.72	1.18	11.26	1.0
	Mean	1.26	0.98	0.4	0.58	2.97	5.55	2.31	10.8	3.5
	CV%	15	16	39	29	10	13	12	7	18
	LSD (0.05)†	0.27	0.22	0.22	0.24	0.46	1.01	0.46	1.27	0.9

Design: RCB, plot size 3 x 25 (3 x 22 harvested)

Seeded: 21-Apr-06

Soil Type: Capac loam, tile drainage

Fertilizer: 200 lbs N/a. (50 lbs/A following emergence, 50 lbs/A after cuts 1-3)

† 95% certain that values which are separated by a number greater than the LSD are statistically different
 harvest blocks are grouped by species and harvest is taken when the boot stage is the average for all entries

*Winter injury: visual rating with a scale 1 to 10, 10 = 91-100% of stand damaged

Table 8. 2007 East Lansing, MI Perennial Grass Variety Trial
Sown May 2007, Non-irrigated

<i>Species</i> /Marketer	Cultivar	cut 1	cut 2	cut 3	cut 4	2008	2007	2-yr.	Winterkill
<i>Festulolium</i>		DM tons/acre							1 to 10*
Rose Agri-Seed, Inc.	Spring Green, organic	1.71	0.64	0.23	0.49	3.07	1.91	4.98	3.1
Allied Seed	Gain	0.83	0.70	0.26	0.35	2.14	2.31	4.45	7.8
<i>Orchardgrass</i>									
Rose Agri-Seed, Inc.	Megabite	2.10	1.60	0.83	0.84	5.37	2.18	7.55	1.4
public	Potomac	1.59	1.70	0.92	1.27	5.48	2.02	7.50	1.9
Columbia Seed/Seed Res. of OR	OG0204G	2.05	1.68	0.81	0.85	5.39	1.99	7.38	1.3
ProSeeds Marketing	Warrior II	1.36	1.58	0.81	1.26	5.01	2.16	7.17	2.8
Allied Seed	OG0203G	1.99	1.65	0.77	0.68	5.09	2.01	7.10	1.1
AMPAC Seed	AMOG4	1.06	1.63	0.80	1.00	4.49	2.28	6.77	3.8
Rose Agri-Seed, Inc.	Elsie	1.25	1.54	0.62	0.88	4.29	2.12	6.41	3.1
<i>Perennial Ryegrass</i>									
Barenbrug	Remington (4n)	1.67	0.86	0.61	.	3.14	1.96	5.10	4.4
Barenbrug	Barsprinter (2n)	1.54	0.71	0.49	.	2.74	2.27	5.01	1.6
Barenbrug	BG34 (blend)	0.46	1.07	0.59	.	2.12	2.01	4.13	5.9
AMPAC Seed	AMPOW4n (4n)	0.61	0.90	0.43	.	1.94	2.17	4.11	3.8
Czech Republic	Korok (4n)	0.41	0.97	0.55	.	1.93	2.02	3.95	8.3
AgResearch, LTD	KLp401 (4n)	0.16	0.48	0.35	.	0.99	1.97	2.96	6.8
AgResearch, LTD	KLp507 (4n)	0.03	0.41	0.17	.	0.61	1.90	2.51	9.8
Cropmark Seeds	LP2006DA (4n)	0.00	0.00	0.00	.	0.00	2.51	2.51	9.0
Cropmark Seeds	LP2005GA (4n)	0.00	0.00	0.00	.	0.00	1.78	1.78	7.8
<i>Tall fescue</i>									
Columbia Seed/Seed Res. of OR	TFO203G	2.10	1.58	1.08	0.87	5.63	2.29	7.92	1.0
ProSeeds Marketing	Noria	1.38	1.61	0.98	1.13	5.10	2.78	7.88	1.3
Rose Agri-Seed, Inc.	Cowgirl	2.02	1.45	0.92	0.83	5.22	2.56	7.78	1.0
Barenbrug	BarElite	1.66	1.76	0.87	0.89	5.18	2.35	7.53	1.1
<i>Meadow/hybrid brome</i>									
Columbia Seed/Seed Res. of OR	Montana	2.99	1.06	1.11	0.43	5.59	1.52	7.11	1.0
DLF International	AC Knowles	2.25	1.00	0.72	0.23	4.20	1.63	5.83	1.0
<i>Timothy</i>									
public	Climax	3.13	1.28	0.36	.	4.77	2.26	7.03	1.1
Barenbrug	Barpenta	2.88	1.13	0.29	.	4.30	2.11	6.41	1.0
Barenbrug	Barfleo	0.51	0.01	0.00	.	0.52	0.87	1.39	1.0
	Mean	1.40	1.07	0.58	0.8	3.49	2.07	5.56	3.5
	CV%	22	22	30	31	11	12	9	41
	LSD (0.05)†	0.39	0.33	0.23	0.35	0.79	0.38	0.9	1.8

Design: RCB, plot size 3 x 25 (3 x 22 harvested)

Seeded/Soil Type: 5/7/2007 / Capac loam, tile drainage

Fertilizer: 200 lbs N/a. (50 lbs/A following emergence, 50 lbs/A after cuts 1-3)

† 95% certain that values which are separated by a number greater than the LSD are statistically different

harvest blocks are grouped by species and cuttings are taken when the boot stage is the average

*Winter injury: visual rating with a scale 1 to 10, 10 = 91-100% of stand damaged

Table 9.

2008 Annual Ryegrass Variety Trial
East Lansing, MI
 Sown April 2008
 Non-irrigated

Breeder/Marketer	Entry	18-Jun	15-Jul	10-Oct	Total	cut 1		cut 2		cut 3	
						CP%	RFV	CP%	RFV	CP%	RFV
		DM tons/acre									
DLF International	HZ LWT 0331 PX17 (4n)	0.67	1.09	0.81	2.57	15.7	100.2	10.1	98.4	23.9	131.4
Allied Seed	DH3 (2n)	0.67	0.67	1.01	2.35	16.3	102.4	11.5	106.9	21.8	132.6
Pickseed	PSG 29BF06 (4n)	0.59	0.75	1.00	2.34	17.8	111.0	12.1	114.0	20.6	137.7
Allied Seed	Nibbio (2n)	0.61	0.56	0.90	2.06	16.7	110.0	11.0	101.6	22.7	137.2
Seed Res. of OR	Aurelia (4n)	0.48	0.40	0.98	1.86	17.4	111.7	11.9	111.2	21.1	135.1
	Mean	0.60	0.69	0.94	2.24	16.8	107.1	11.3	106.4	22.0	134.8
	CV%	25	29	30	17	13	4	13	10	6	6
	LSD (0.05)†	NS	0.31	NS	0.59	2.8	6.2	NS	NS	2.0	NS

Location: Mich. State Univ. Exp. Station, East Lansing

Design: RCB, plot size 3 x 25' (3 x 22' harvested)

Seeded: 21-Apr-08

Soil Type: Colwood-Brookston, tile drainage

Fertility: 150 lbs N/a. (50 lbs/A following emergence, 50 lbs/A after cuts 1-2)

† 95% certain that values which are separated by a number greater than the LSD are statistically different