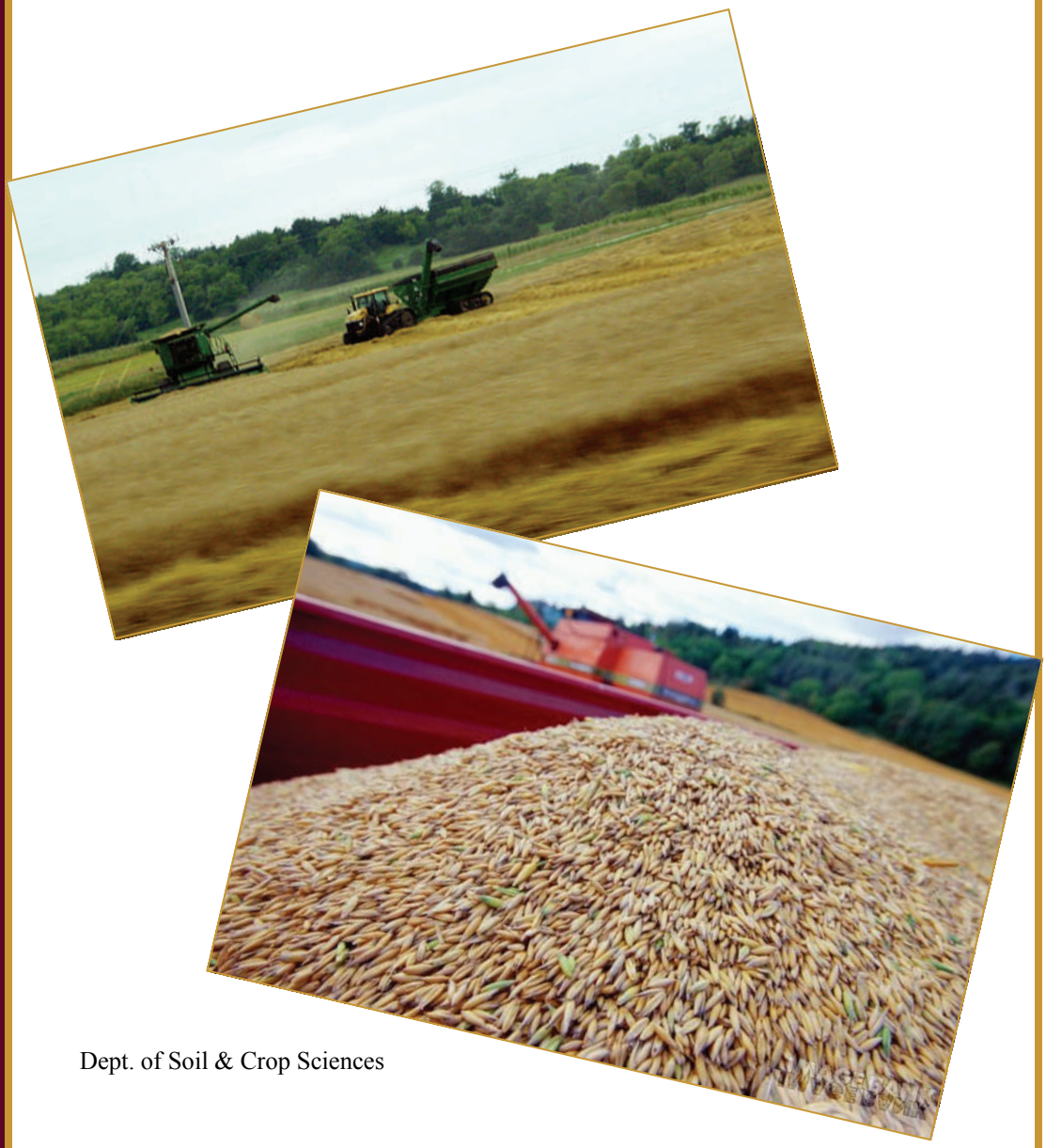
SCS-2010-06

2010 Texas Oat Variety Results

2010



Dept. of Soil & Crop Sciences

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2010
Texas Oat Variety Trials
varietytesting.tamu.edu/wheat

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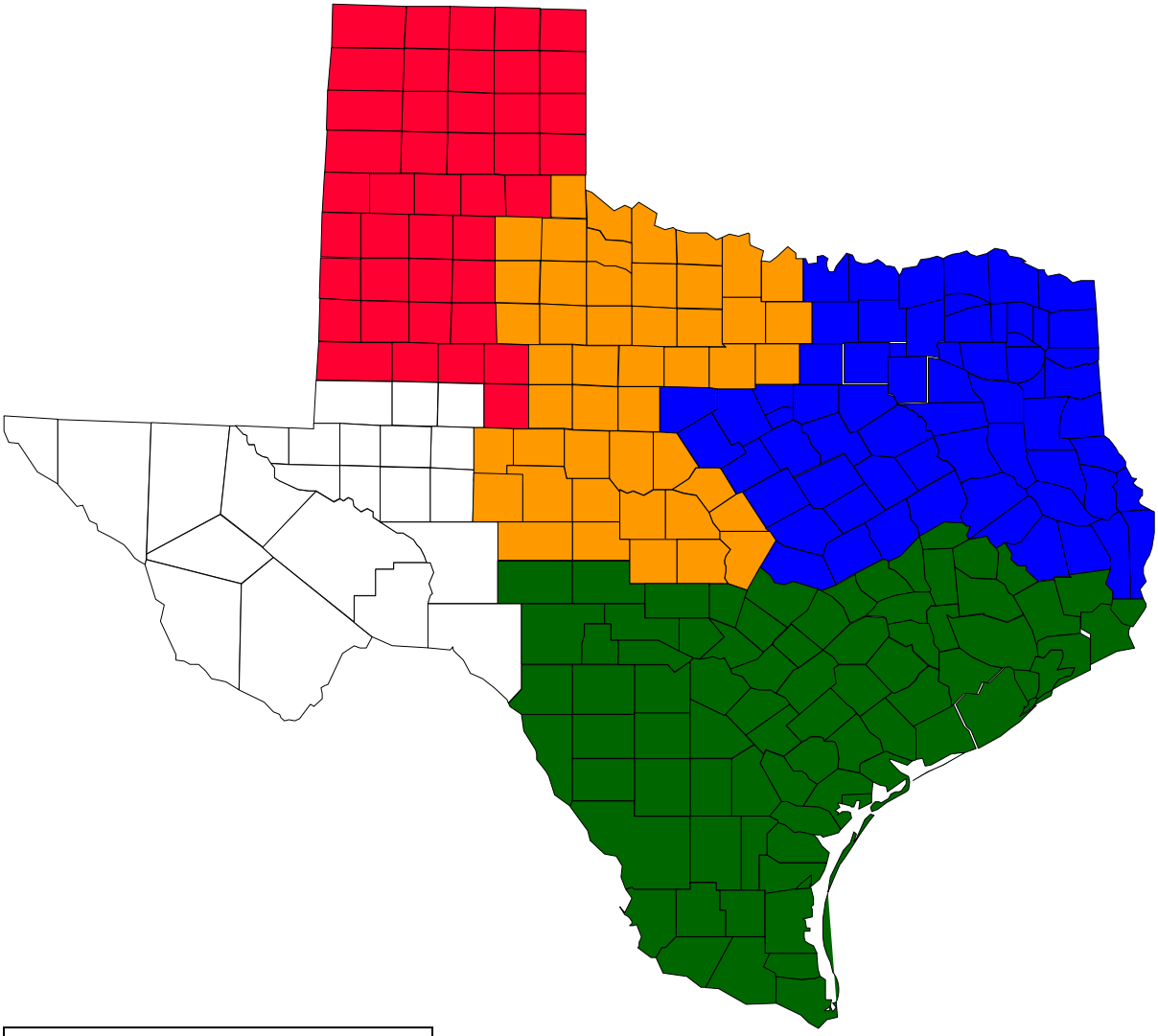
Texas Small Grains Regional Map



Legend:

- Texas High Plains
- Texas Rolling Plains
- Texas Blacklands
- South Texas

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Introduction

Texas producers planted 550,000 acres in oats for the 2009-2010 cropping season according to the National Agricultural Statistics Service (NASS). This figure is down by 50,000 acres planted last cropping season and 150,000 acres in the past 3 years according to NASS. This season, oat acres planted were the lowest since 1997.

The Uniform Oat Variety Trial (UOVT) is coordinated and implemented by numerous Texas AgriLife Extension and Research faculty and staff from Commerce, Vernon, San Angelo and College Station. We also appreciate the cooperation from numerous County Extension Agents and producers that aid us with locations and property to conduct these field trials. The purpose of this publication is to provide unbiased yield and disease data for oat producers across the state. With this information, Texas oat producers can make a more educated decision about the most appropriate varieties for their geographic region.

Variety Selection:

Selection of small grain varieties is one of the most important decisions a producer will make. This decision impacts the potential yield (forage and grain), seed quality (test weight and protein), disease and insect management, and maturity. It is important that producers diversify the varieties to be planted on their farms. Variety diversification spreads the risk associated with potentially devastating pests (rusts, Hessian fly, leaf curl mite, greenbugs, etc.) and yield loss from adverse environmental factors (freeze, drought, hail, etc.).

Producers should select no fewer than 2 varieties to plant on their farms and preferably more, depending on size and location of fields. Variety selection should be based upon a combination of sound data from university trials, county agent strip trials, and other reliable sources. Wheat varieties should be chosen based on multiple years of data (yield, pest resistance, grain quality and maturity). High yields over multiple years and multiple locations demonstrate a variety's ability to perform well over diverse environmental factors. Stable yield performance of quality grain is the best variety selection tool. It is important to consider decreasing yields over a 2 or 3 year time frame, which may reflect a change in disease and/or insect resistance.

When selecting a variety for the 2010-11 season, producers need to consider the 2009-10 season, recognizing the unusually wet, cold conditions that impacted yield and quality. It is strongly encouraged that producers look at the 2 and 3 year averages for the varieties and to look at numerous relevant variety trial locations. There are typically 10+ oat variety trials conducted across the state each year.

Interpreting the Data:

Yield and test weight at each location has been statistically analyzed using the recommended procedures. The statistical analysis provides the mean, coefficient of variation (CV), and LSD values. It is important to note these statistical values to prevent misinterpretation of the data.

The mean is another term for the average. Therefore, a mean value is the average of all the variety's yield within a trial. The CV value, expressed at a percentage, indicates the level of unexplained variability present within the trial. A high CV value indicates a lot of variability existed within the trial not related to normal variations that might be expected between the varieties in the test. This variability may be the result of non-uniform stands, non-uniform insect or disease pressure, variability in harvesting, or other issues. High CV values indicate a great deal of variation due to factors other than the genetic variation between varieties. CV values in excess of 15% should cause the person using the data to understand that there were problems in the trial that will cause questions about the validity of the data as a true representation of varietal performance. The LSD value indicates if the varieties performed differently from one another within the trial. If the LSD value is 5 bu/ac in a trial in which Variety A yielded 36 bu/a and Variety B yielded 30 bu/a, then Variety A is said to be significantly better. In a trial with an LSD value of 5 bu/ac at a 0.05 (or 5%) level the statistical inference is that Variety A would yield better than Variety B in 19 out of 20 trials conducted in which there was a 5 bushel difference in yield. In this hypothetical comparison, you might have a 20^{th} trial with a 5 bu/ac difference that there is not truly a difference between A and B, but random chance caused the 5 bushel difference.

2010 Texas Oat Overview by Region

Texas Blacklands:

The Texas Blackland region had ample rainfall this growing season. In the northern Blacklands, planting was delayed due to wet field conditions. High winds and heavy rain events caused severe lodging throughout much of this region. Some varieties of oats had shattering issues due to the environmental conditions. The freezes that occurred this year did not seem to have an adverse effect on the yield. Crown and stem rust also did not have a major impact on yields in this region.

Texas Rolling Plains:

The Rolling Plains, like most of the state, had good moisture throughout the growing season. Heavy rains and high winds caused some seed shattering and lodging in the trials conducted in this region of the state. Rusts were not a problem here, nor were the early season freezes.

South Texas:

The South Texas locations also experienced an abnormally wet winter and early spring. This caused shallow penetration of the roots in comparison to root development under normal conditions; therefore, when dry conditions followed in late April, moisture became a limiting factor for the late maturing varieties in dryland fields. Additionally, both crown and stem rust ranged from moderate to severe in this region. The College Station trial had moderate stem rust, which came in late and didn't affect yields very much, due to seed maturity. The Castroville trial had both moderate crown rust and moderate late stem rust.

Texas Blackland Location

Location[1]	Planting Date	Fertilizer (Total)	Row Spacing	Pesticide Applied	Date Appl.	Yield Limiting Issues
		(lbN/a)	inch			
Ellis County	11/5/2009	80	7	Amber (1/2 oz/a)	11/15/09	Excessive moisture early; dry spring
Grayson County	11/18/2009	80	7	Amber (1/2 oz/a)	11/24/09	Excessive moisture early; dry spring
McGregor	11/9/2009	80	7	Dimethoate (3/4 pt/a) Weedmaster (3/4 pt/a)	2/19/10 1/27/10	Light shattering; Moderate lodging

[1]None of these locations were irrigated and all were grown under conventional till.

Ellis County Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Test Wt. (lb/bu) 2010
1	TX05CS542	TAMU	144.7	-	33.6
2	Buck Forage (LA 99017)	LSU	139.5	-	34.6
3	RAM 99016	LSU	139.4	122.0	35.5
4	Horizon 201	UF	139.2	-	33.5
5	Horizon 270	UF	137.2	124.8	34.9
6	Harrison	LSU	134.6	113.7	36.9
7	TAMO 606	TAMU	133.5	119.1	35.6
8	TX05CS347-1	TAMU	130.8	-	33.8
9	TAMO 406	TAMU	124.7	113.5	36.0
10	TX02U7682	TAMU	121.4	117.1	33.9
11	Plot Spike	LSU	114.5	-	32.8
12	TAMO 405	TAMU	107.9	96.6	34.6
13	Dallas	TAMU	105.8	108.8	34.0
14	Mac	California	90.1	-	30.1
		Mean	**132.7**	**118.4**	**34.6**
		CV (%)	**6.9**		
		LSD (5%)	**11.4**		

†Yield average for 2010 and 2007

[1] **UF** = University of Florida,
LSU = Louisiana State University,
and **TAMU** = Texas A&M University

Grayson County Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Test Wt. (lb/bu) 2010
1	Horizon 201	UF	155.9	-	34.5
2	TX05CS542	TAMU	146.0	104.7	34.8
3	Harrison	LSU	143.4	110.6	35.2
4	Buck Forage (LA 99017)	LSU	142.1	116.6	35.5
5	TAMO 606	TAMU	141.3	119.0	35.0
6	RAM 99016	LSU	138.9	124.6	35.8
7	TX05CS347-1	TAMU	137.5	118.4	36.1
8	Horizon 270	UF	133.2	117.8	33.0
9	TAMO 406	TAMU	131.3	130.3	36.6
10	TX02U7682	TAMU	128.9	108.7	34.8
11	Plot Spike	LSU	125.5	111.4	35.9
12	TAMO 405	TAMU	125.4	107.0	33.7
13	Dallas	TAMU	117.9	109.5	33.4
14	Mac	California	64.2	-	30.3
		Mean	**138.5**	**116.2**	**35.2**
		CV (%)	**6.1**		
		LSD (5%)	**10.5**		

†Yield average for 2010 and 2008

[1] **UF** = University of Florida,
LSU = Louisiana State University,
and **TAMU** = Texas A&M University

McGregor Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Yield (bu/a) 3-Year††	Test Wt. (lb/bu) 2010
1	TX05CS542	TAMU	164.4	155.9	137.8	37.0
2	Horizon 270	UF	161.8	159.3	142.6	35.0
3	Plot Spike	LSU	161.0	149.5	132.2	37.0
4	TX02U7682	TAMU	158.2	148.3	133.9	36.0
5	Horizon 201	UF	157.4	142.0	-	35.0
6	Harrison	LSU	155.9	141.2	121.6	38.0
7	RAM 99016	LSU	154.2	147.3	134.5	37.5
8	TX05CS347-1	TAMU	153.6	152.1	133.7	36.5
9	Buck Forage (LA 99017)	LSU	149.9	143.9	131.3	34.0
10	Dallas	TAMU	142.7	136.9	122.2	36.5
11	TAMO 606	TAMU	138.9	125.7	110.5	35.0
12	TAMO 405	TAMU	134.8	127.2	119.3	35.5
13	Mac	California	122.6	-	-	29.5
14	TAMO 406	TAMU	110.7	112.4	111.0	33.0
		Mean	**147.6**	**141.6**	**127.5**	**35.4**
		CV (%)	**11.2**			
		LSD (5%)	**22.0**			

†Yield average for 2010 and 2009
††Yield average for 2010, 2009, and 2008

[1] **UF** = University of Florida,
LSU = Louisiana State University,
and **TAMU** = Texas A&M University

McGregor Uniform Oat Variety Trial Ratings - 2010

Variety	Source	Height (inches)	Heading (Day)	Crown Rust[1]	Lodging[2]
Dallas	TAMU	42	106	10S	4.5
Harrison	LSU	43	106	TR	4.5
Horizon 201	UF	41	104	0	2
Horizon 270	UF	36	107	0	4.5
RAM 99016	LSU	38	104	0	3
Buck Forage (LA 99017)	LSU	46	106	0	1
Mac	California	43	110	TR	0.5
Plot Spike	LSU	40	108	0	2
TAMO 405	TAMU	35	105	0	4.5
TAMO 406	TAMU	41	108	0	4.5
TAMO 606	TAMU	40	109	5S	4
TX02U7682	TAMU	38	105	0	1.5
TX05CS347-1	TAMU	39	107	0	1
TX05CS542	TAMU	41	102	0	3.5

[1]Rating - Number is % of leaf area covered by rust; followed by letter that indicates susceptibility
S = Susceptible, TR = Trace

[2]Rating - 0-5 scale, 0 = no lodging

Texas Rolling Plains Location Details

Location[1]	Planting Date	Fertilizer (Total)	Row Spacing	Pesticide Applied	Date Appl.	Yield Limiting Issues
		(lbN/a)	inch			
Abilene	10/27/2009	Producer Applied	7	None	-	Light crown rust; Some BYDV[2]
Brady	11/4/2009	61	7	Dimethoate (3/4 pt/a)	1/22/10	Some lodging; Moderate BYDV[2]
Chillicothe	10/19/2009	80	7	None	-	Light crown rust; Some BYDV[2]

[1]All locations were grown under conventional tillage and no irrigation.
[2]BYDV – Barley Yellow Dwarf Virus

Abilene Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Test Wt. (lb/bu) 2010
1	TAMO 606	TAMU	85.4	36.0
2	Horizon 201	UF	84.6	35.3
3	Plot Spike	LSU	81.0	36.7
4	TX02U7682	TAMU	80.3	36.8
5	Dallas	TAMU	77.4	35.5
6	Harrison	LSU	77.0	37.4
7	Mac	California	72.4	36.2
8	TX05CS347-1	TAMU	70.3	37.6
9	TX05CS542	TAMU	67.4	37.4
10	TAMO 406	TAMU	65.2	35.0
11	Buck Forage (LA 99017)	LSU	63.8	36.0
12	Horizon 270	UF	63.2	38.2
13	RAM 99016	LSU	53.9	38.1
14	TAMO 405	TAMU	49.4	33.6
		Mean	**75.0**	**36.4**
		CV (%)	**9.4**	
		LSD (5%)	**9.5**	

[1] **UF** = University of Florida, **LSU** = Louisiana State University, and **TAMU** = Texas A&M University

Brady Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Yield (bu/a) 3-Year††	Test Wt. (lb/bu) 2010
1	RAM 99016	LSU	151.0	128.8	118.9	32.5
2	Horizon 201	UF	147.2	118.2	-	32.0
3	Buck Forage (LA 99017)	LSU	142.0	117.3	115.9	31.0
4	Plot Spike	LSU	138.5	118.2	112.0	32.5
5	Horizon 270	UF	137.5	115.6	109.9	30.5
6	TX05CS542	TAMU	133.3	110.2	106.5	33.5
7	TAMO 406	TAMU	132.8	110.6	108.6	31.5
8	Harrison	LSU	129.4	101.7	94.0	35.0
9	TAMO 405	TAMU	126.3	109.3	107.9	32.0
10	TAMO 606	TAMU	124.1	112.0	103.2	34.0
11	TX02U7682	TAMU	115.8	101.8	105.4	33.0
12	TX05CS347-1	TAMU	114.0	106.7	103.6	34.5
13	Dallas	TAMU	97.7	103.4	103.4	33.0
14	Mac	California	55.2	-	-	30.0
		Mean	**134.4**	**113.1**	**108.2**	**32.5**
		CV (%)	**17.2**			
		LSD (5%)	**30.4**			

†Yield average for 2010 and 2009

††Yield average for 2010, 2009, and 2008

[1] **UF** = University of Florida, **LSU** = Louisiana State University, and **TAMU** = Texas A&M University

Chillicothe Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Yield (bu/a) 3-Year††	Test Wt. (lb/bu) 2010
1	Horizon 201	UF	138.6	-	-	34.7
2	RAM 99016	LSU	131.1	111.8	99.5	36.8
3	TAMO 406	TAMU	125.2	109.9	104.5	35.0
4	Plot Spike	LSU	120.5	105.8	-	36.5
5	Horizon 270	UF	118.5	99.3	88.2	35.0
6	TX05CS347-1	TAMU	116.9	108.1	-	37.6
7	TAMO 606	TAMU	112.6	93.2	88.1	36.4
8	TX02U7682	TAMU	109.9	94.6	83.5	36.0
9	TX05CS542	TAMU	109.6	89.8	-	37.1
10	Dallas	TAMU	106.0	94.8	88.9	35.0
11	TAMO 405	TAMU	101.0	87.9	87.3	36.4
12	Harrison	LSU	96.7	77.6	76.1	37.6
13	Buck Forage (LA 99017)	LSU	91.7	94.4	-	34.3
14	Mac	California	84.1	-	-	34.7
		Mean	**117.3**	**99.5**	**91.4**	**36.0**
		CV (%)	**11.4**			
		LSD (5%)	**17.4**			

†Yield average for 2010 and 2008

††Yield average for 2010, 2008, and 2007

[1] **UF** = University of Florida, **LSU** = Louisiana State University, and **TAMU** = Texas A&M University

South Texas Location Details

Location[1]	Planting Date	Fertilizer (Total)	Water*	Row Spacing	Pesticide Applied	Date Appl.	Yield Limiting Issues
		(lbN/a)		inch			
Castroville	11/19/2009	83	IL	7	Dimethoate (3/4 pt/a)	1/26/10	Moderate crown rust, stem rust and lodging
College Station	11/11/2009	83	D	7	Dimethoate (3/4 pt/a) + Weedmaster (3/4 pt/a)	2/18/10	Moderate stem rust; Light crown rust; Moderate lodging;

[1]All locations were grown under conventional till.
*Irrigation/Type: IL = Irrigated Limited, D = Dryland

Castroville Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year†	Yield (bu/a) 3-Year††	Test Wt. (lb/bu) 2010
1	Horizon 270	UF	181.1	129.2	117.5	35.0
2	Buck Forage (LA 99017)	LSU	170.0	132.5	117.8	36.5
3	TX05CS347-1	TAMU	156.7	128.2	114.6	38.5
4	RAM 99016	LSU	146.6	102.4	88.1	37.5
5	TX02U7682	TAMU	139.4	105.0	92.0	36.0
6	TX05CS542	TAMU	133.8	97.9	78.8	34.0
7	TAMO 405	TAMU	133.1	93.3	84.4	33.5
8	Plot Spike	LSU	129.6	115.0	104.6	37.5
9	Horizon 201	UF	112.0	98.2	-	34.5
10	TAMO 406	TAMU	111.1	105.1	99.3	38.0
11	Mac	California	93.9	-	-	33.5
12	TAMO 606	TAMU	93.2	102.6	103.3	35.0
13	Harrison	LSU	86.4	82.0	80.2	35.0
14	Dallas	TAMU	76.4	84.9	77.9	28.0
		Mean	**137.0**	**110.7**	**99.7**	**35.9**
		CV (%)	**17.5**			
		LSD (5%)	**32.0**			

†Yield average for 2010 and 2009
††Yield average for 2010, 2009, and 2008
[1] **UF** = University of Florida,
LSU = Louisiana State University,
and **TAMU** = Texas A&M University

College Station Uniform Oat Variety Trial Yield - 2010

2010 Rank	Variety	Source[1]	Yield (bu/a) 2010	Yield (bu/a) 2-Year †	Yield (bu/a) 3-Year††	Test Wt. (lb/bu) 2010
1	Horizon 270	UF	147.9	139.3	133.7	31.5
2	TX05CS542	TAMU	146.7	134.7	132.1	33.5
3	Plot Spike	LSU	135.2	113.3	109.4	32.5
4	TX05CS347-1	TAMU	133.7	120.8	118.3	31.0
5	Buck Forage (LA 99017)	LSU	131.5	129.6	124.9	31.5
6	TX02U7682	TAMU	129.8	129.6	131.6	32.5
7	TAMO 606	TAMU	129.4	112.0	108.1	27.5
8	RAM 99016	LSU	117.1	130.3	129.5	32.0
9	Mac	California	116.1	-	-	29.0
10	Horizon 201	UF	115.6	130.2	-	31.5
11	TAMO 406	TAMU	111.8	109.7	114.7	30.5
12	TAMO 405	TAMU	107.9	121.1	119.0	34.0
13	Dallas	TAMU	102.5	101.9	95.0	29.0
14	Harrison	LSU	84.8	91.7	99.2	29.0
		Mean	**122.1**	**120.3**	**118.0**	**31.1**
		CV (%)	**12.5**			
		LSD (5%)	**21.8**			

†Yield average for 2010 and 2009

††Yield average for 2010, 2009, and 2008

[1] **UF** = University of Florida,
LSU = Louisiana State University,
and **TAMU** = Texas A&M University

College Station Uniform Oat Variety Trial Ratings - 2010

Variety	Source	Height (inches)	Heading (Day)	Crown Rust[1]	Stem Rust[1]	Lodging[2]
Dallas	TAMU	45	100	S	S	2
Harrison	LSU	53	102	S	VS	1
Horizon 201	UF	51	98	0	S	1
Horizon 270	UF	40	98	0	MS	0
RAM 99016	LSU	47	98	0	VS	0
Buck Forage (LA 99017)	LSU	52	101	0	MR	1
Mac	California	54	105	0	S	3
Plot Spike	LSU	51	104	0	MR	0
TAMO 405	TAMU	36	96	0	MS	1
TAMO 406	TAMU	45	98	0	MS	3
TAMO 606	TAMU	46	104	0	S	4
TX02U7682	TAMU	48	95	0	MR	0
TX05CS347-1	TAMU	44	101	0	MR	0
TX05CS542	TAMU	47	93	0	MS	0

[1]Rating - Number is % of leaf area covered by rust; followed by letter that indicates susceptibility
VS = Very Susceptible, S = Susceptible, MS = Moderately Susceptible,
MR = Moderately Resistant, and TR = Trace

[2]Rating - 0-5 scale, 0 = no lodging

Uniform Oat Variety Trial State Wide Yield - 2010

2010 Rank	Variety	Source[1]	2010 Yield (bu/a)								2010 Yield Average (bu/a)
			Abilene	Brady	Castroville	Chillicothe	College Station	Ellis County	McGregor	Prosper	State Wide
1	Horizon 270	UF	63.2	137.5	181.1	118.5	147.9	137.2	161.8	133.2	135.1
2	Horizon 201	UF	84.6	147.2	112.0	138.6	115.6	139.2	157.4	155.9	131.3
3	TX05CS542	TAMU	67.4	133.3	133.8	109.6	146.7	144.7	164.4	146.0	130.7
4	RAM 99016	LSU	53.9	151.0	146.6	131.1	117.1	139.4	154.2	138.9	129.0
5	Buck Forage (LA 99017)	LSU	63.8	142.0	170.0	91.7	131.5	139.5	149.9	142.1	128.8
6	TX05CS347-1	TAMU	70.3	114.0	156.7	116.9	133.7	130.8	153.6	137.5	126.7
7	Plot Spike	LSU	81.0	138.5	129.6	120.5	135.2	114.5	161.0	125.5	125.7
8	TX02U7682	TAMU	80.3	115.8	139.4	109.9	129.8	121.4	158.2	128.9	123.0
9	TAMO 606	TAMU	85.4	124.1	93.2	112.6	129.4	133.5	138.9	141.3	119.8
10	TAMO 406	TAMU	65.2	132.8	111.1	125.2	111.8	124.7	110.7	131.3	114.1
11	Harrison	LSU	77.0	129.4	86.4	96.7	84.8	134.6	155.9	143.4	113.5
12	TAMO 405	TAMU	49.4	126.3	133.1	101.0	107.9	107.9	134.8	125.4	110.7
13	Dallas	TAMU	77.4	97.7	76.4	106.0	102.5	105.8	142.7	117.9	103.3
14	Mac	California	72.4	55.2	93.9	84.1	116.1	90.1	122.6	64.2	87.3
		Mean	**72.0**	**133.2**	**132.7**	**115.6**	**122.1**	**132.7**	**147.6**	**138.5**	**124.3**
		CV (%)	**9.4**	**17.2**	**17.5**	**11.4**	**12.5**	**6.9**	**11.2**	**6.1**	
		LSD (5%)	**9.5**	**30.4**	**32.0**	**17.4**	**21.8**	**11.4**	**22.0**	**10.5**	

[1] **UF** = University of Florida, **LSU** = Louisiana State University, and **TAMU** = Texas A&M University

Oat Distributor Seed Source

We greatly appreciate the following distributors for their donation of seed for the county demonstration and variety research trials.

Company	**Contact**	**Seed Variety**
Douglass King Co. - San Antonio	210-661-4191	TAMO 406
Pogue Seed Co. – Kenedy, TX	830-583-3456	TAMO 405 TAMO 406
Justin Seed Co. – Justin, TX	940-759-2924	TAMO 606
East TX Seed – Tyler, TX	903-597-6637	Horizon 314 Heavy Grazer 7630