



World Class. Face to Face.

2013

Washington State Hay Growers Association

ALFALFA VARIETY

YIELD TRIALS

Conducted by Washington State University Extension

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Washington State Hay Growers Association

Alfalfa Variety Trials

Conducted by Washington State University Extension

Seven alfalfa trials were harvested for yield in irrigated central Washington State in 2013. The Washington State Hay Growers Association (WSHGA) sanctions the trials with contracts with Washington State University (WSU) Extension to conduct and report the research. Three trials are conducted near Othello, WA and four trials near Pasco, WA.

The Othello site is located on the WSU Othello research farm 6 miles ESE of Othello, WA at Lat: N46°47'41 Lng: W119°02'33 and at an elevation of 1154 feet. One Pasco site is located on Selph Landing Road about 8 miles North of Pasco, WA at Lat: N46°19'75, Lng: W119°09'94 at an elevation of 457 feet, the other west of Garfield Road at Lat: N46°28'999, Lng: W119°06'852.

The soils are a Shano silt loam (coarse-silty, mixed-mesic Xerollic Camborthids) at Othello, and a Sagehill very fine sandy loam (coarse-loamy, mixed, mesic Xerillic Camborthids) at the Garfield Road location. All trials were sprinkler irrigated throughout the April-October growing season. The frost-free (32°F) period at Othello averages 180 days and 209 days at Pasco.

Each trial is arranged in a randomized complete block (RCB) design with 4 replications. All are seeded at about 20 lbs/ac in rows spaced 6 inches apart with a 1-foot inter-plot separation. Plot size is 4 x 15 feet. The trials contain some experimental entries that are not available for commercial planting. Forage yields are normally collected for each submitted entry for three years on each planting. Coefficient of Variation or "CV" is estimated using statistics and gives an estimate of the variability in the field. The lower the number the less variation in the measurements taken and the more likely you can determine a significant difference between treatments. Least significant difference or "LSD" is also determined for each measured effect. If the difference between two treatment means is greater than the LSD then you can determine that one variety yielded greater than another with a high level of confidence.

Tables 1 and 2 contain a summary of yields for alfalfa varieties that have been tested for three years at the Pasco and Othello locations. Yields are presented in percent of mean of the test for ease of comparison. Table 3 is from: NAFA's "Winter Survival, Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties – 2014 Edition and previous editions". For a complete copy of the NAFA document visit www.alfalfa.org/varietyLeaflet.php.

Forage yields for each harvest, total season yield for 2013 and the totals for all years of the trials to date are reported in Tables 4 through 9. Yields are determined from whole plot fresh weights converted to a dry matter basis using a constant dry matter fraction of 20%. Ratings for regrowth after 4th cutting were taken on September 26, 2013, and represent visual ratings from 1-5. Rating scale was: 1 - little to no regrowth, 2 – below average regrowth, 3 - average regrowth, 4 - above average regrowth, and 5 - high amount of regrowth. In 2013 a lot of regrowth occurred due to warm fall and timing of last cutting.

At the end of each experiment final stands were evaluated for percent stand. This was determined by visually determining how many 6 inch gaps were found between plants in each of the seeded rows compared to the number of 6 inch blocks there are in a plot and calculating the percentage.

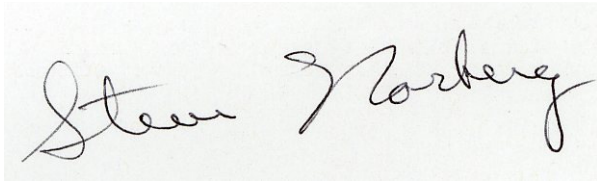
The WSHGA-WSU goal for the alfalfa variety testing project is to identify varieties for growers that are adapted to the Columbia Basin region that will tolerate both biotic (pests) and abiotic (environmental) stresses.

2013 summer was unusually warm even by recent standards. Overall, this summer was the second warmest summer on record, and featured warm readings at night. June was generally balmy in spite of the rainfall in eastern Washington late in the month. July was particularly hot and dry and some of the hottest average monthly temperatures were recorded.

I want to especially thank Jesus Ramos, Javier Ramos, and Emanuel Farias for their assistance with this year's trials and planting of next years trials. I also want to thank the Washington State Hay Growers Association and Washington State University Extension for their continued support.

Please don't hesitate to contact me if you have any questions on the trials.

Sincerely,

A handwritten signature in black ink on a light-colored background. The signature reads "Steve Norberg" in a cursive, flowing script.

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Table 1. 2013 Summary of Conventionally Sprayed Alfalfa Yield Trials Since 2010 - Franklin Co., WA

Entry	Seeded March 2010				Seeded August 2010				Seeded August 2011				Seeded August 2012				6 YR Avg.	
	2010	2011	2012	3 Yr.	2011	2012	2013	3 Yr.	2012	2013	2014	2 Yr.	2013	2014	2015	3 Yr.	3/10 & 8/10	
45417	108.9%	95.1%	92.7%	96.6%														
55Q27													99.7%					
64Q22	100.0%	103.8%	113.8%	108.5%	92.8%	102.9%	103.8%	101.6%									105.1%	
6422Q									107.7%	104.5%		105.9%						
6R100									102.7%	100.1%		101.2%						
AmeriStand 407TQ	109.1%	105.1%	96.5%	101.3%	98.8%	96.9%	98.7%	97.9%	103.2%	100.5%		101.6%					99.6%	
AmeriStand 445NT					100.4%	100.8%	101.0%	100.8%	108.6%	104.1%		106.0%	101.1%					
Archer III	96.2%	98.1%	103.0%	100.4%	103.1%	101.1%	102.6%	102.2%									101.3%	
CB11001													106.4%					
CB11011													92.1%					
CB9003													96.3%					
CW064004	94.1%	103.4%	101.6%	101.6%														
CW 085028													99.8%					
DG 4210					112.4%	105.1%	103.0%	105.4%	102.0%	93.0%		96.9%	103.5%					
DKA 41-18 RR									109.3%	99.5%		103.7%						
DKA 42-15	92.3%	89.1%	92.9%	91.9%														
DKA 43-13					95.0%	96.4%	98.3%	97.1%					99.9%					
DKA 43-22 RR									105.4%	103.5%		104.3%						
DKA 50-18					102.0%	103.1%	100.8%	101.7%					101.8%					
FG 45W271	100.3%	105.3%	107.8%	105.7%														
FG 45W273	100.5%	108.3%	103.5%	104.2%														
FG 46W201	98.9%	98.0%	100.5%	99.6%														
FG 46W202	108.1%	100.0%	103.8%	103.7%														
FGI 48W201									104.3%	98.5%		101.0%						
FGI 48W202									101.3%	103.9%		102.8%						
FGI 48W203									103.1%	100.0%		101.3%	104.0%					
FGI 59W212									102.2%	100.9%		101.5%						
FGI R58HG236									101.4%	101.6%		101.5%						
GrandStand	108.2%	99.2%	101.8%	102.4%	102.2%	104.6%	103.8%	103.9%	101.2%	103.4%		102.5%					103.2%	
Gunner													96.8%					
HybriForce-2600									109.5%	104.0%		106.4%	97.4%					
HybriForce Exp 802	100.2%	102.4%	97.4%	99.2%														
HybriForce Exp 807	97.6%	92.1%	93.1%	93.8%														
LegenDairy 5.0									105.1%	100.8%		102.7%						
Integra 8400	97.8%	101.3%	101.9%	100.9%														
Integra 8420													99.7%					
Magna 551	107.2%	98.5%	99.0%	100.5%														
MasterPiece II	99.6%	102.1%	105.6%	103.5%					109.3%	101.9%		105.1%	96.3%					
Mountaineer 2.0	109.5%	95.6%	97.9%	99.7%														
McSunstra 810					97.5%	98.0%	94.6%	96.4%										
NEXGROW 6401N													100.6%					
PGI 557	96.9%	107.7%	101.0%	101.9%					109.2%	102.2%		105.2%						
Prosementi	96.3%	114.3%	99.3%	102.6%														
Rebound 6.0					93.6%	88.8%	97.4%	93.6%	103.8%	100.9%		102.2%	102.9%					
Summit	86.2%	101.9%	99.8%	97.6%														
Vernal	88.5%	76.4%	79.4%	80.0%														
Vernema																		
Winchester					93.6%	100.0%	95.1%	96.7%										
Whitney													101.8%					
WL354HQ									107.2%	107.1%		107.2%	99.8%					
WL 363HQ	103.5%	102.1%	107.6%	105.4%	108.5%	102.2%	100.9%	102.7%									104.1%	
AV-T/AC	3.12	3.98	8.50	15.60	4.51	9.93	11.66	26.10	7.84	10.39		18.22	11.36					
LSD 9-11 (0.05) 12 (0.10)	12.3%	13.1%	5.3%	6.4%	9.1%	7.6%	6.0%	4.8%	8.8%	9.0%		7.4%	5.1%					
CV(%)	8.5	9.2	5.3	1.0	6.5	5.9	4.1	3.3	6.2	6.3		5.2	4.3					

Table 2. 2013 Summary of Conventionally Sprayed Alfalfa Yield Trials Since fall of 2009-Othello, WA

Entry	Seeded August 2009				Seeded August 2010				Seeded August 2011				Seeded August 2012				6 YR Avg. of 2009 & 2010
	2010	2011	2012	3 Yr.	2011	2012	2013	3 Yr.	2012	2013	2014	2 Yr.	2013	2014	2015	3 Yr.	
45417	103.0%	103.7%	91.5%	97.4%													
4R200									111.6%	101.6%		106.4%					
55Q27													106.5%				
6305Q					93.0%	98.0%	99.1%	98.6%	96.4%	105.7%		101.1%					
63Q05	98.8%	88.2%	97.6%	95.8%													
6422Q					92.2%	100.4%	101.7%	99.5%									
64Q22	102.2%	95.2%	101.5%	100.3%													
AmeriStand 407TQ	97.6%	103.3%	104.5%	102.4%	99.7%	99.1%	103.2%	100.8%	99.8%	104.9%		102.4%				101.6%	
AmeriStand 445NT					106.2%	94.1%	98.0%	98.0%	115.8%	110.3%		112.9%					
CB001									102.8%	98.7%		100.7%	96.7%				
CB11001													100.4%				
CB11011													98.2%				
CW 064004	103.4%	108.3%	110.7%	108.2%													
CW 104038													98.2%				
DG4210					94.9%	106.2%	105.8%	104.0%	92.9%	85.1%		88.8%	105.7%				
DKA 34-17 RR									104.6%	102.0%		103.3%					
DKA 41-18 RR									101.7%	96.7%							
DKA 42-15	97.7%	92.6%	96.3%	95.9%													
DKA 43-13					105.7%	99.8%	102.4%	102.0%					101.6%				
DKA 43-22 RR									108.7%	102.6%		105.5%					
DKA 50-18													99.7%				
DSB01-T									105.9%	91.5%		98.4%					
DSB08-M									110.1%	101.9%			105.8%				
Enhancer II									106.3%	97.1%		102.5%					
FG45W271	98.4%	92.9%	101.5%	98.8%													
FG45W273	98.2%	97.2%	100.7%	99.2%													
FG46W201	103.3%	109.0%	101.6%	103.7%													
FG46W202	107.4%	102.9%	107.2%	106.3%													
FG 48W203													95.0%				
FGI 48W201									101.9%	104.4%		103.2%					
FGI 48W202									94.2%	102.4%		98.4%					
FGI 48W203									102.7%	106.9%		104.9%					
FGI R58HG236									100.2%	100.4%		100.3%					
GrandStand	105.1%	98.2%	105.2%	103.6%	102.3%	101.8%	98.8%	100.5%	100.3%	104.6%		102.5%				102.1%	
Gunner									114.1%	114.7%		114.4%					
Hybri Force-240					108.7%	95.2%	94.1%	97.2%									
HybriForce-3400									114.0%	99.2%		106.4%					
Hybri Force Exp 802	93.9%	91.0%	89.8%	91.1%													
HybriForce Exp 807	93.0%	103.5%	98.1%	97.9%													
Integra 8300	103.8%	99.9%	104.5%	103.3%													
Integra 8400	99.5%	105.6%	105.9%	104.1%													
LegenDairy 5.0					96.8%	98.7%	99.6%	98.6%	101.2%	102.6%		101.9%					
Magna 551					102.7%	101.4%	96.3%	99.5%									
Magnum 7									109.7%	99.3%		104.3%	111.5%				
MasterPiece II									103.8%	104.3%		104.0%	104.7%				
PGI 424									103.2%	100.1%		101.6%					
PGI 557	105.5%	112.4%	97.8%	103.1%													
Prosementi	95.1%	104.9%	88.5%	93.9%													
Rebound 5.0	103.0%	100.7%	106.9%	104.4%													
Rebound 6.0					100.6%	100.8%	99.2%	100.1%	103.0%	105.2%		104.1%					
Seneca													100.8%				
Summit	102.1%	94.5%	107.9%	103.3%													
Vernal	95.3%	93.2%	82.0%	88.1%									81.9%				
Whitney													101.4%				
Vernema													97.7%				
WL 343 HQ	94.1%	103.1%	100.3%	99.2%													
WL 354HQ									104.8%	109.5%		107.2%					
WL 363HQ					97.1%	102.2%	101.8%	101.0%									
AV-T/AC	4.53	3.70	8.40	16.63	4.39	9.55	10.42	24.35	9.81	9.52		18.49	11.60				
LSD 9-11 (0.05) 12 (0.10)	NS	NS	7.60%	9.20%	NS	NS	6.0%	NS	9.8%	7.7%		8.5%	7.5%				
CV (%)	10.8%	12.6%	5.4%	6.5%	8.4%	4.6%	4.6%	3.9%	7.9%	5.4%		6.1%	6.3%				

Table 3. Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties in these Trials*

Variety	Contact for Marketing Info.	FD	WS	BW	VW	FW	AN	PRR	APH ¹	SAA	PA	BAA	SN	SRKN	NRKN
4R200	Eureka Seeds, Inc.	4	2	HR	HR	HR	HR	HR	HR	MR	R	MR	HR		R
54V09	Pioneer Hi-Bred Int'l, Inc.	4		HR	HR	R	HR	HR	R	R	HR		HR		HR
6R100	Eureka Seeds, Inc.	6		HR	R	HR	HR	HR		HR	R	HR	R	HR	
55Q27	Pioneer Hi-Bred Int'l, Inc.	5		HR	HR	HR	HR	HR	HR	R	R		HR		
6305Q	Nexgrow Alfalfa	3	1	HR	HR	HR	HR	HR	HR	HR			R		
6401N	Nexgrow Alfalfa	4		HR	HR	HR	HR	NR	R		HR		HR		HR
6422Q	Nexgrow Alfalfa	4	1	HR	HR	HR	HR	HR	HR		R		R		
64Q22	Syngenta	4	1	HR	HR	HR	HR	HR	HR		R		R		
AmeriStand 407TQ	America's Alfalfa	4	2	HR	HR	HR	HR	HR	HR	R	HR		MR		R
AmeriStand 444NT	America's Alfalfa	4		R	HR	HR	HR	HR	HR	R	HR		HR		HR
AmeriStand 445NT	America's Alfalfa	4		HR	R	HR	HR	HR	R	HR	R		HR		HR
Archer III	America's Alfalfa	5	2	HR	HR	HR	HR	HR	HR		HR		HR		HR
DG4210	Crop Production Services	4	1	HR	HR	HR	HR	HR	HR	HR	R		R		
DKA34-17RR	DeKalb	3	2	HR	HR	HR	HR	HR	HR		HR		R		R
DKA41-18 RR	DeKalb	4	2	HR	HR	HR	HR	HR	HR	HR	HR		R		R
DKA42-15	DeKalb	4	1	HR	HR	HR	HR	HR	HR	R	HR		R		
DKA43-13	DeKalb	4	1	HR	HR	HR	HR	HR	HR		R		R		R
DKA43-22 RR	DeKalb	4	2	HR	HR	HR	HR	HR	HR				HR		R
DKA50-18	DeKalb	5	2	HR	HR	HR	HR	HR	HR	R	R		R		
FSG 429SN	Farm Science Genetics	4	2	HR	HR	HR	HR	HR	HR	R	HR		HR		R
FSG 528SF	Farm Science Genetics	5		HR	HR	HR	HR	R	R		R	R			
FSG 639ST	Farm Science Genetics	6	3	HR	R	HR	R	HR	MR		R		HR	R	HR
GrandStand	Crop Production Services	4	1	HR	HR	HR	HR	HR	HR	R	HR		MR		R
Gunner	CropPlan Genetics	5	1	HR	HR	HR	HR	HR	HR		R		R		HR
HybridForce 420/wet	Dairyland Seed Co., Inc.	4	2	HR	R	HR	R	HR	R	R	R		HR		HR
HybridForce 2600	Dairyland Seed Co., Inc.	6	2	HR	R	HR	HR	HR	R		R		HR	R	HR
Integra 8300	Wilbur Ellis Company	3	1	HR	HR	HR	HR	HR	HR		HR		R		R
Integra 8400	Wilbur Ellis Company	4	2	HR	HR	HR	HR	HR	HR		HR		R		R
Integra 8420	Wilbur Ellis Company	4		HR		HR	HR	HR	HR		R		HR		HR
Lariat	J. R. Simplot Company	3	1	HR	HR	HR	HR	HR	HR		HR		R		R
LegenDairy 5.0	CropPlan Genetics	3	1	HR	HR	HR	HR	HR	HR	R	R		MR		R
Magna 551	Dairyland Seed Co., Inc.	5	2	HR	HR	HR	R	HR	HR				R		HR
Magnum 7	Dairyland Seed Co., Inc.	4	2	HR	HR	HR	HR	HR	HR		R		HR	R	HR
Masterpiece	J. R. Simplot Company	4		HR	R	HR	HR	HR	R	HR		R	HR		R
MasterPiece II	J. R. Simplot Company	5		HR	HR	HR	HR	HR	HR		HR		HR		
Medalist	Union	4	3	HR	HR	HR	HR	HR	R	HR	R		HR		HR
Mountaineer 2.0	CropPlan Genetics	5		HR	R	HR	HR	HR	R	R	HR		HR		R
PGI 424	Producer's Choice	4		HR		HR	HR	HR	R		R		HR		R
PGI 557	Producer's Choice	5		HR	HR	HR	HR	HR	HR		R	R	HR		HR
Plumas	Eureka Seeds, Inc.	4		HR	R	HR	HR	HR	R	R	R		HR		MR
Rebound 5.0	CropPlan Genetics	4	2	HR	HR	HR	HR	HR	HR	R	HR		R		R
Rebound 6.0	CropPlan Genetics	4	1	HR	HR	HR	HR	HR	HR	HR	R		R		
Seneca	Crop Production Services	4	2	HR	HR	HR	HR	HR	HR		R		MR		R
Vernal	Public	2		R	S	MR	S	S	S				SN		MR
Whitney	Eureka Seeds, Inc.	4	3	HR	HR	HR	HR	HR		R	HR		HR		HR
WL 343 HQ	W-L Research, Inc.	4	1	HR	HR	HR	HR	HR	HR		HR		R		
WL 354 HQ	W-L Research, Inc.	4	1	HR	HR	HR	HR	HR	HR	HR	HR		R		
WL 363HQ	W-L Research, Inc.	5	1	HR	HR	HR	HR	HR	HR		HR		HR		HR

FD Fall Dormancy
 WS Winter Survival
 BW Bacterial Wilt
 VW Verticillium Wilt
 FW Fusarium Wilt
 AN Anthracnose Race 1
 PRR Phytophthora Root Rot

SAA Spotted Alfalfa Aphid
 PA Pea Aphid
 BAA Blue Alfalfa Aphid
 SN Stem Nematode
 APH¹ Aphanomyces Race 1
 SRKN Southern Root Knot Nematode
 NRKN Northern Root Knot Nematode

* NAFA's "Winter Survival, Fall Dormancy & Pest Resistance Ratings for Alfalfa Varieties – 2013 Edition and previous editions." For a complete copy of the NAFA document visit www.alfalfa.org/varietyLeaflet.php.

Blanks mean adequate testing has not yet occurred.

Table 4. Three-Year Forage Yield-- Fall 2010 Alfalfa Variety Trial, Othello, Adams County, WA
Forage Yield (Ton DM/ac)

Planted Aug 17, 2010	2011 Harvests		2012 Harvests		2013 Harvests.						2011-2013		9-Sep-13
	Total	% Mean	Total	% Mean	Harv. 5/15	Hav. 7/3	Harv.7/30	Harv. 9/9	Total	% Mean	3 Yr. Total	% of Mean	
Variety	Total	% Mean	Total	% Mean	Cut 1	Cut 2	Cut 3	Cut 4	Total	% Mean	3 Yr. Total	% of Mean	% Stand
DG4210	4.17	94.9%	10.15	106.3%	3.80	3.24	2.35	1.63	11.02	105.8%	25.33	104.0%	88.1
DKA43-13	4.64	105.7%	9.53	99.8%	3.82	3.12	2.18	1.55	10.67	102.4%	24.84	102.0%	87.0
WL 363 HQ	4.26	97.1%	9.74	102.0%	3.67	3.17	2.16	1.61	10.60	101.8%	24.61	101.0%	87.5
AmeriStand 407TQ	4.38	99.7%	9.43	98.8%	3.78	3.13	2.15	1.68	10.75	103.2%	24.56	100.8%	86.2
Grandstand	4.49	102.3%	9.70	101.6%	3.64	3.06	2.03	1.56	10.29	98.8%	24.48	100.5%	86.7
Rebound 6.0	4.42	100.6%	9.62	100.8%	3.71	3.03	2.08	1.51	10.33	99.2%	24.37	100.1%	83.5
6422Q	4.05	92.2%	9.59	100.5%	3.72	2.99	2.19	1.69	10.59	101.7%	24.23	99.5%	85.1
Magna 551	4.51	102.7%	9.69	101.4%	3.87	2.79	1.86	1.51	10.03	96.3%	24.23	99.5%	86.9
LegenDairy 5.0	4.25	96.8%	9.43	98.7%	3.72	3.04	2.03	1.59	10.37	99.6%	24.05	98.8%	86.6
6305Q	4.08	93.0%	9.61	100.7%	3.74	2.88	2.13	1.58	10.33	99.1%	24.02	98.6%	90.3
AmeriStand 445NT	4.66	106.2%	8.99	94.1%	3.54	3.08	2.00	1.59	10.21	98.0%	23.86	98.0%	87.6
HybriForce Exp 240	4.77	108.7%	9.10	95.3%	3.66	2.85	1.77	1.52	9.80	94.1%	23.67	97.2%	87.9
Mean	4.39	100.0%	9.55	100.0%	3.72	3.03	2.08	1.59	10.42	100.0%	24.35	100.0%	87.0
CV %	8.4	8.4	4.6	4.6	7.0	9.6	5.6	7.0	4.6	4.6	3.9	3.9	2.7
LSD 5%	NS	NS	NS	NS	NS	NS	0.17	NS	0.63	6.0%	NS	NS	NS

NS = Data was not statistically significant at the alpha = 0.05

Table 5. Three-Year Forage Yield-Fall 2010 Alfalfa Variety Trial in 2013, Franklin County, WA
Forage Yield (Ton DM/A)

Planted Aug 18, 2010 Variety	Total of 2011 Harvests		Total of 2012 Harvests		2013 Harvests.						3 Year Total	
	tons/acre	% of Mean	tons/acre	% of Mean	5/20 Cut 1	6/28 Cut 2	7/31 Cut 3	9/10 Cut 4	Total	Percent of Mean	Total	% Mean
DG4210	5.07	112.4%	10.45	105.2%	4.09	2.78	2.91	2.22	12.00	103.0%	27.52	105.4%
Grandstand	4.61	102.2%	10.40	104.7%	4.42	2.75	2.83	2.10	12.10	103.8%	27.11	103.9%
WL 363 HQ	4.89	108.5%	10.15	102.2%	4.17	2.78	2.72	2.10	11.76	100.9%	26.80	102.7%
Archer III	4.65	103.1%	10.04	101.2%	4.23	2.82	2.87	2.04	11.96	102.6%	26.66	102.2%
DKA50-18	4.60	102.0%	10.18	102.5%	4.10	2.66	2.93	2.05	11.75	100.8%	26.53	101.7%
64Q22	4.19	92.8%	10.23	103.0%	4.14	2.88	2.95	2.14	12.10	103.8%	26.52	101.6%
AmeriStand 445NT	4.53	100.4%	10.01	100.8%	4.15	2.57	2.88	2.16	11.77	101.0%	26.31	100.8%
AmeriStand 407TQ	4.46	98.8%	9.58	96.5%	4.05	2.48	2.93	2.03	11.50	98.7%	25.54	97.9%
DKA43-13	4.29	95.0%	9.58	96.5%	4.13	2.51	2.88	1.95	11.46	98.3%	25.33	97.1%
Winchester	4.22	93.6%	9.94	100.1%	3.89	2.61	2.62	1.97	11.08	95.1%	25.25	96.7%
MsSunstra 810	4.40	97.5%	9.74	98.1%	4.17	2.44	2.49	1.92	11.03	94.6%	25.16	96.4%
Rebound 6.0	4.22	93.6%	8.86	89.2%	4.00	2.66	2.65	2.04	11.35	97.4%	24.43	93.6%
Mean	4.51	100.0%	9.93	100.0%	4.13	2.66	2.81	2.06	11.66	100%	26.10	100%
CV %	6.5	6.5	5.9	5.9	7.0	4.0	7.5	9.2	4.1	4.1	3.3	3.3
LSD 5%	0.41	9.14	0.75	7.55	NS	0.42	NS	NS	0.70	6.0	1.24	4.8

NS = Data was not statistically significant at the alpha = 0.05

Table 6. Two-Year Forage Yield-Fall 2011 Planting in 2013, Franklin County, WA
Forage Yield (Ton DM/A)

Seeded 9/1/2011	2012				2013 Harvests						2 Yr. Total		Regrowth*
	Entry	RR or Conv.	Total Tons/A	% Mean	15-May Cut 1	27-Jun Cut 2	1-Aug Cut 3	10-Sep Cut 4	Total	% Mean	Total Tons/A	% Mean	Rating
W-L Research	WL 354HQ	Conv.	8.40	107.2%	3.77	2.62	2.76	1.98	11.13	107.1%	19.53	107.2%	4.75
Dairyland Seed Co.	HybriForce-2600	Conv.	8.58	109.5%	3.81	2.42	2.49	2.09	10.81	104.0%	19.39	106.4%	3.50
America's Alfalfa	AmeriStand 445NT	Conv.	8.51	108.6%	3.62	2.57	2.44	2.18	10.81	104.1%	19.32	106.0%	5.00
Syngenta	6422Q	Conv.	8.44	107.7%	3.86	2.55	2.33	2.11	10.86	104.5%	19.30	105.9%	4.75
Producer's Choice	PGI 557	Conv.	8.55	109.2%	3.75	2.45	2.36	2.06	10.62	102.2%	19.17	105.2%	4.50
JR Simplot	MasterPiece II	Conv.	8.56	109.3%	3.48	2.36	2.65	2.10	10.59	101.9%	19.15	105.1%	4.50
Monsanto	DKA 43-22 RR	RR	8.26	105.4%	3.80	2.41	2.53	2.02	10.75	103.5%	19.01	104.3%	4.25
Monsanto	DKA 41-18 RR	RR	8.57	109.3%	3.64	2.33	2.46	1.90	10.33	99.5%	18.90	103.7%	3.25
Forage Genetics	FGI 48W202	Conv.	7.94	101.3%	4.16	2.56	2.29	1.79	10.79	103.9%	18.73	102.8%	4.75
Croplan Genetics	LegenDairy 5.0	Conv.	8.24	105.1%	3.95	2.32	2.30	1.89	10.47	100.8%	18.71	102.7%	3.50
Crop Production Services	Grandstand	Conv.	7.93	101.2%	3.93	2.44	2.49	1.89	10.75	103.4%	18.68	102.5%	4.00
Croplan Genetics	Rebound 6.0	Conv.	8.13	103.8%	3.72	2.41	2.44	1.92	10.49	100.9%	18.62	102.2%	4.25
America's Alfalfa	AmeriStand 407TQ	Conv.	8.09	103.2%	3.58	2.49	2.33	2.04	10.44	100.5%	18.52	101.6%	4.50
Forage Genetics	FGI R58HG236	Conv.	7.95	101.4%	3.54	2.42	2.61	1.98	10.55	101.6%	18.50	101.5%	4.75
Forage Genetics	FGI 59W212	Conv.	8.01	102.2%	3.57	2.51	2.40	2.01	10.48	100.9%	18.49	101.5%	4.50
Forage Genetics	FGI 48W203	Conv.	8.08	103.1%	3.49	2.47	2.39	2.02	10.38	100.0%	18.46	101.3%	5.00
Eureka Seeds	6R100	RR	8.05	102.7%	3.69	2.30	2.47	1.93	10.40	100.1%	18.44	101.2%	5.00
Forage Genetics	FGI 48W201	Conv.	8.17	104.3%	3.30	2.41	2.56	1.97	10.24	98.5%	18.41	101.0%	4.75
Crop Production Services	DG4210	Conv.	8.00	102.0%	3.17	2.23	2.28	1.98	9.67	93.0%	17.66	96.9%	3.25
Public	Vernema ¹	Conv.	3.82	48.8%	3.49	1.91	2.22	1.72	9.35	90.0%	13.17	72.3%	3.25
Public	Vernal ¹	Conv.	4.27	54.5%	3.11	1.86	1.64	1.43	8.27	79.6%	12.54	68.8%	2.00
	Mean		7.84	100.0%	3.64	2.38	2.40	1.95	10.39	100.0%	18.22	100.0%	4.19
	CV %		6.2	6.2	10.3	7.1	8.5	7.3	6.3	6.3	5.2	5.2	13.4
	LSD 5%		0.69	8.8%	0.53	0.24	0.29	0.20	0.94	9.0%	1.34	7.4%	0.79

* Rating scale was: 1 - little to no regrowth, 2 – below average regrowth, 3 - average regrowth, 4 - above average regrowth, 5 - high amount of regrowth.

¹ Vernal and Vernema seed did not germinate due to bad seed. These varieties were replanted in the spring so lower yields resulted.

Table 7. Two-Year Forage Yield-Fall 2011 Alfalfa Variety Trial in 2013, Othello, Adams County, WA
Forage Yield (Ton DM/A)

Seeded 8/26/2011		RR	2012	2012	2013 Harvests						2 Yr. Total		Regrowth*
		or	Total		5-15	7-3	7-30	9-9	Total		2012 & 2013		Rating
Company	Entry	Conv.	Total	% Mean	Cut 1	Cut 2	Cut 3	Cut 4	Total	% Mean	Total	% Mean	26-Sep-13
Croplan Genetics	Gunner	Conv.	10.23	114.0%	3.75	3.09	2.26	1.82	10.91	114.7%	21.14	114.4%	5.00
America's Alfalfa	AmeriStand 445NT	Conv.	10.38	115.7%	3.88	2.84	1.90	1.87	10.49	110.3%	20.87	112.9%	4.50
W-L Research	WL 354HQ	Conv.	9.40	104.7%	3.69	2.85	2.05	1.83	10.42	109.5%	19.81	107.2%	4.75
Eureka Seeds	4R200	RR	10.00	111.5%	3.47	2.70	1.82	1.68	9.67	101.6%	19.67	106.4%	4.00
Dairyland Seed Co.	HybriForce-3400	Conv.	10.22	114.0%	3.76	2.52	1.50	1.66	9.44	99.2%	19.66	106.4%	2.50
Dairyland Seed Co.	DSB08-M	Conv.	9.87	110.0%	3.60	2.59	1.71	1.80	9.69	101.9%	19.57	105.8%	2.75
Monsanto	DKA 43-22 RR	RR	9.74	108.6%	3.68	2.66	1.76	1.68	9.76	102.6%	19.51	105.5%	3.75
Forage Genetics	FGI 48W203	Conv.	9.21	102.7%	3.68	2.82	2.00	1.68	10.17	106.9%	19.38	104.9%	4.25
Dairyland Seed Co.	Magnum 7	Conv.	9.84	109.6%	3.43	2.73	1.59	1.70	9.45	99.3%	19.28	104.3%	2.75
Croplan Genetics	Rebound 6.0	Conv.	9.23	102.9%	3.68	2.74	1.90	1.70	10.01	105.2%	19.25	104.1%	3.75
JR Simplot	MasterPiece II	Conv.	9.31	103.8%	3.53	2.66	1.86	1.87	9.92	104.3%	19.23	104.0%	4.50
Monsanto	DKA 34-17 RR	RR	9.38	104.5%	3.46	2.73	1.81	1.71	9.71	102.0%	19.09	103.3%	3.75
Forage Genetics	FGI 48W201	Conv.	9.14	101.8%	3.47	2.80	2.01	1.66	9.94	104.4%	19.07	103.2%	4.50
Crop Production Services	Enhancer II	Conv.	9.71	108.2%	3.48	2.49	1.54	1.72	9.24	97.1%	18.95	102.5%	2.75
Crop Production Services	Grandstand	Conv.	8.99	100.2%	3.86	2.66	1.75	1.69	9.96	104.6%	18.94	102.5%	3.25
America's Alfalfa	AmeriStand 407TQ	Conv.	8.95	99.8%	3.59	2.78	1.88	1.73	9.98	104.9%	18.94	102.4%	3.50
Croplan Genetics	LegenDairy 5.0	Conv.	9.07	101.1%	3.54	2.77	1.80	1.66	9.76	102.6%	18.83	101.9%	3.50
Producer's Choice	PGI 424	Conv.	9.25	103.1%	3.43	2.71	1.73	1.66	9.53	100.1%	18.78	101.6%	3.25
Syngenta	6305Q	Conv.	8.64	96.3%	3.74	2.77	1.86	1.68	10.06	105.7%	18.70	101.1%	3.25
Columbia Basin	CB001	Conv.	9.22	102.8%	3.42	2.60	1.70	1.67	9.39	98.7%	18.61	100.7%	3.75
Forage Genetics	FGI R58HG236	Conv.	8.99	100.2%	3.16	2.64	2.07	1.68	9.55	100.4%	18.54	100.3%	5.00
Monsanto	DKA 41-18 RR	RR	9.11	101.6%	3.31	2.53	1.75	1.62	9.21	96.7%	18.32	99.1%	3.75
Dairyland Seed Co.	DSB01-T	Conv.	9.49	105.8%	3.34	2.39	1.44	1.54	8.70	91.5%	18.20	98.4%	2.75
Forage Genetics	FGI 48W202	Conv.	8.45	94.2%	3.20	2.90	1.97	1.67	9.74	102.4%	18.19	98.4%	4.75
Crop Production Services	DG4210	Conv.	8.33	92.8%	3.01	2.30	1.31	1.48	8.10	85.1%	16.42	88.8%	2.00
Public	Vernema ¹	Conv.	4.11	45.8%	2.64	2.06	1.10	1.39	7.18	75.5%	11.29	61.1%	2.50
Public	Vernal ¹	Conv.	3.98	44.4%	2.69	1.85	0.97	1.42	6.93	72.9%	10.92	59.1%	1.25
Mean			8.97	100.0%	3.46	2.64	1.74	1.68	9.52	100.0%	18.49	100.0%	3.56
CV %			7.9	7.9	7.7	6.4	6.5	6.7	5.4	5.4	6.10	6.1%	13.6
LSD 5%			0.88	9.81	0.38	0.24	0.16	0.16	0.73	7.7%	1.58	8.5%	0.68

* Rating scale was: 1 - little to no regrowth, 2 - below average regrowth, 3 - average regrowth, 4 - above average regrowth, 5 - high amount of regrowth.

¹ Vernal and Vernema seed did not germinate due to bad seed. These varieties were replanted in the spring so lower yields resulted.

Table 8. One-Year Forage Yield-Fall 2012 Alfalfa Variety Trial in 2013, Othello, Adams County, WA
Forage Yield (Ton DM/A)

Planted August 24, 2012		Fall	2013 Harvests						Regrowth*
Company	Entry	Dorm.	20-May	3-Jul	30-Jul	9-Sep	Total	% Mean	Rating
		Rating	Cut 1	Cut 2	Cut 3	Cut 4	Total		26-Sep-13
Dairyland Seed Co.	Magnum 7	4	5.55	3.26	2.05	2.06	12.93	111.5%	3.25
Pioneer Hi Bred	55Q27	5	4.74	3.31	2.25	2.05	12.35	106.5%	4.75
Crop Production Services	DG 4210	4	4.55	3.44	2.22	2.06	12.26	105.7%	4.50
JR Simplot Co.	MasterPiece II	4	4.91	3.01	2.14	2.09	12.15	104.7%	4.75
Monsanto	DKA 43-13	4	4.24	3.32	2.26	1.95	11.78	101.6%	5.00
Eureka	Whitney	4	4.87	2.91	1.95	2.03	11.75	101.4%	4.25
Crop Production Services	Seneca	4	4.50	3.14	2.01	2.04	11.69	100.8%	3.75
Precision Genetics	CB11001	4	4.62	3.08	2.01	1.93	11.64	100.4%	4.00
Monsanto	DKA 50-18	5	4.37	3.05	2.15	1.99	11.56	99.7%	4.75
Precision Genetics	CB11011	4	4.66	3.06	1.79	1.89	11.39	98.2%	3.75
Producers Choice	CW 104038	4	4.59	3.07	1.80	1.92	11.39	98.2%	3.00
WA Seed Certif.	Vernema	4	4.91	2.89	1.71	1.81	11.33	97.7%	3.00
Precision Genetics	CB001	4	4.37	3.10	1.89	1.86	11.21	96.7%	3.50
Forage Genetics	FG 48W203	4	3.96	2.96	2.17	1.92	11.01	95.0%	4.25
WA Seed Certif.	Vernal	2	3.94	2.43	1.37	1.76	9.50	81.9%	2.00
	Mean	4.0	4.59	3.07	1.99	1.96	11.60	100.0%	3.90
	CV %		10.5	6.9	7.2	6.8	6.3	6.3	10.7
	LSD 10%		0.57	0.25	0.17	0.16	0.87	7.5%	0.49

* Rating scale was: 1 - little to no regrowth, 2 – below average regrowth, 3 - average regrowth, 4 - above average regrowth, 5 - high amount of regrowth.

Table 9. One-Year Forage Yield-Fall 2012 Planting in 2013, Franklin County, WA
Forage Yield (Ton DM/A)

Planted August 24, 2012		Fall	2013 Harvests						Regrowth*
		Dorm.	5-14	6-28	7-31	9-11	Total	% Mean	Rating
Company	Entry	Rating	Cut 1	Cut 2	Cut 3	Cut 4	tons/a		26-Sep-13
Precision Genetics	CB11001	4	4.42	2.76	2.74	2.17	12.09	106.4%	3.00
Forage Genetics	FG 48W203	4	3.88	2.84	2.96	2.14	11.82	104.0%	4.00
Crop Protection Services	DG 4210	4	3.92	2.82	2.91	2.12	11.77	103.5%	3.50
Croplan Genetics	Rebound 6.0	4	3.86	2.84	2.92	2.07	11.69	102.9%	2.50
Monsanto	DKA 50-18	5	3.80	2.72	2.80	2.26	11.57	101.8%	4.25
Eureka	Whitney	4	4.13	2.66	2.59	2.19	11.57	101.8%	3.25
America's Alfalfa	AmeriStand 445NT	4	3.78	2.63	2.91	2.18	11.49	101.1%	4.00
NEXGROW	6401N	4	3.92	2.61	2.85	2.05	11.43	100.6%	4.50
Monsanto	DKA 43-13	4	3.70	2.74	2.82	2.09	11.35	99.9%	3.50
Producer's Choice	CW 085028	5	3.61	2.74	2.87	2.13	11.34	99.8%	4.75
W-L Research	WL 354HQ	4	3.61	2.74	2.87	2.13	11.34	99.8%	4.75
Pioneer Hi Bred	55Q27	5	3.84	2.73	2.65	2.10	11.33	99.7%	3.75
Wilbur-Ellis Co.	Integra 8420	4	3.84	2.73	2.65	2.10	11.33	99.7%	3.75
Dairyland Seed Co.	HybriForce-2600	6	4.08	2.52	2.52	1.95	11.07	97.4%	2.75
Croplan Genetics	Gunner	5	3.86	2.52	2.54	2.07	11.00	96.8%	3.25
Precision Genetics	CB9003	4	3.76	2.70	2.46	2.03	10.95	96.3%	4.50
JR Simplot Co.	MasterPiece II	4	3.76	2.70	2.46	2.03	10.95	96.3%	4.50
Precision Genetics	CB11011	4	3.50	2.58	2.39	2.00	10.47	92.1%	4.25
	Mean	4.3	3.85	2.70	2.72	2.10	11.36	100.0%	3.82
	CV %		5.9	5.6	6.2	6.2	4.3	4.3	15.6
	LSD 10%		0.27	0.18	0.20	0.15	0.58	5.1%	0.69

* Rating scale was: 1 - little to no regrowth, 2 – below average regrowth, 3 - average regrowth, 4 - above average regrowth, 5 - high amount of regrowth.

Table 10. One-Year Roundup Ready Forage Yield 2012 Alfalfa Variety Trial in 2013, Franklin County, WA
Forage Yield (Ton DM/A)

Planted August 24, 2012		Fall	2013 Harvests						Regrowth*
Company	Entry	Dorm.	6-2	7-2	8-3	9-13	Total	% Mean	Rating
		Rating	Cut 1	Cut 2	Cut 3	Cut 4	Total		26-Sep-13
NEXGROW	6547R	5	3.93	2.74	2.88	2.23	11.78	104.2%	4.3
W-L Research	WL 372HQ.RR	4	3.91	2.79	2.89	2.13	11.71	103.6%	3.8
Croplan Genetics	RR NemaStar	4	3.91	2.68	2.90	2.12	11.61	102.7%	4.3
Eureka	4R200	4	3.81	2.83	2.86	2.03	11.53	102.0%	4.3
America's Alfalfa	AmeriStand 455TQ RR	5	3.97	2.71	2.80	2.02	11.50	101.8%	3.3
Croplan Genetics	RR Tonnica	5	3.75	2.68	2.77	2.17	11.37	100.6%	3.8
NEXGROW	6516R	5	3.70	2.73	2.77	2.09	11.29	99.9%	4.0
Croplan Genetics	RR AlphaTron	5	3.86	2.65	2.71	2.05	11.27	99.7%	3.3
America's Alfalfa	AmeriStand 415NT RR	4	3.72	2.77	2.68	2.05	11.22	99.3%	4.5
NEXGROW	Mutiny	4	3.65	2.66	2.75	2.13	11.19	99.0%	4.0
Monsanto	DKA 44-16 RR	4	3.68	2.63	2.79	2.05	11.15	98.7%	4.3
Monsanto	DKA 43-22 RR	4	3.69	2.66	2.69	2.06	11.10	98.2%	3.8
Pioneer Hi Bred	55VR05	5	3.68	2.67	2.77	1.92	11.04	97.7%	3.3
Wilbur Ellis Co.	Integra 8444RR	5	3.57	2.69	2.70	1.96	10.92	96.6%	4.5
W-L Research	WL 356HQ.RR	4	3.27	2.74	2.66	2.18	10.86	96.1%	4.0
	Mean	4.5	3.74	2.71	2.78	2.08	11.30	100.0%	3.9
	CV %		6.3	5.8	5.5	5.5	3.5	3.5	14.6
	LSD 10%		0.28	NS	NS	0.14	0.48	4.2%	0.7

NS = Data was not statistically significant at the alpha = 0.10

* Rating scale was: 1 - little to no regrowth, 2 – below average regrowth, 3 - average regrowth, 4 - above average regrowth, 5 - high amount of regrowth.