



2014

Washington State Hay Growers Association

ALFALFA VARIETY

YIELD TRIALS

Conducted by Washington State University Extension

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Alfalfa Variety Trials

Conducted by Washington State University Extension

Eight alfalfa trials were harvested for yield in irrigated central Washington State in 2014. 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 five 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 22 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 annual total of yields for alfalfa varieties since the fall planting in 2010 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 – 2015 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 2014 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 23 & 25, 2014, 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 2014 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.

The summer of 2014 was one of the hottest summers on record. Overall mean highs and lows were above normal for most of the summer. Good irrigation was more critical than ever in 2014.

I want to especially thank Emanuel Farias and Fernando Mendez 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 that reads "Steve Norberg". The signature is written in a cursive, flowing style. The first name "Steve" is written with a large, looped 'S', and the last name "Norberg" is written with a large, looped 'N' and a trailing flourish.

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Table 1. 2014 Summary of Conventionally Sprayed Alfalfa Yield Trials Since 2010 - Franklin County, WA

Entry	Seeded August 2010				Seeded August 2011				Seeded August 2012				Seeded August 2013				6 YR Avg.
	2011	2012	2013	3 Yr.	2012	2013	2014	3 Yr.	2013	2014	2015	2 Yr.	2014	2015	2016	2 Yr.	2010 & 2011 Trials
12005													100.5%				
55Q27									99.7%	104.9%		102.0%					
6401N									100.6%	101.4%		100.8%					
6422Q					107.7%	104.5%	105.5%	105.8%									
64Q22	92.8%	102.9%	103.8%	101.6%													
6585Q													102.3%				
6R100					102.7%	100.1%	99.3%	100.5%									
AmeriStand 407TQ	98.8%	96.9%	98.7%	97.9%	103.2%	100.5%	100.4%	101.2%									99.6%
AmeriStand 427TQ													92.8%				
AmeriStand 445NT	100.4%	100.8%	101.0%	100.8%	108.6%	104.1%	106.8%	106.3%	101.1%	101.0%		100.9%	105.9%				103.6%
Archer III	103.1%	101.1%	102.6%	102.2%													
Camas													103.7%				
CB11001									106.4%	99.1%		102.7%					
CB11011									92.1%	98.5%		95.0%					
CB9003									96.3%	100.4%		98.1%					
CW 085028									99.8%	107.4%		103.3%					
DG 4210	112.4%	105.1%	103.0%	105.4%	102.0%	93.0%	98.1%	97.3%	103.5%	99.2%		101.3%	105.9%				101.4%
DKA 41-18 RR					109.3%	99.5%	97.0%	101.4%									
DKA 43-13	95.0%	96.4%	98.3%	97.1%					99.9%	99.5%		99.5%					
DKA 43-22 RR					105.4%	103.5%	104.0%	104.2%									
DKA 50-18	102.0%	103.1%	100.8%	101.7%					101.8%	100.1%		100.8%					
FGI 48W201					104.3%	98.5%	106.1%	102.8%									
FGI 48W202					101.3%	103.9%	102.7%	102.8%									
FGI 48W203					103.1%	100.0%	105.8%	102.9%	104.0%	103.1%		103.4%					
FGI 59W212					102.2%	100.9%	99.3%	100.7%									
FGI R58HG236					101.4%	101.6%	105.7%	102.9%									
FSG524													104.8%				
GrandStand	102.2%	104.6%	103.8%	103.9%	101.2%	103.4%	97.7%	100.8%					100.6%				102.4%
Gunner									96.8%	101.2%		98.7%					
HybriForce-2600					109.5%	104.0%	103.2%	105.3%	97.4%	91.0%		94.2%					
Integra 8420									99.7%	98.6%		99.9%					
L455HD													99.1%				
LegenDairy 5.0					105.1%	100.8%	98.3%	101.2%									
MasterPiece II					109.3%	101.9%	96.5%	102.1%	96.3%	100.3%		100.8%					
McSunstra 810	97.5%	98.0%	94.6%	96.4%													
Nimbus													104.6%				
PGI 557					109.2%	102.2%	103.2%	104.5%									
Rebound 6.0	93.6%	88.8%	97.4%	93.6%	103.8%	100.9%	101.6%	102.0%	102.9%	100.2%		101.4%					97.8%
Vernal													84.9%				
Vernema													94.9%				
Whitney									101.8%	94.3%		98.0%					
Winchester	93.6%	100.0%	95.1%	96.7%													
WL 363HQ	108.5%	102.2%	100.9%	102.7%													
WL354HQ					107.2%	107.1%	107.1%	107.1%	99.8%	99.8%		98.8%					
AV-T/AC	4.51	9.93	11.66	26.10	7.84	10.39	9.71	27.94	11.36	10.66		22.06	7.47				
LSD 10-11 (0.05) 12-13(0.10)	9.1%	7.6%	6.0%	4.8%	8.8%	9.0%	5.9%	4.9%	5.1%	5.6%		4.7%	8.4%				
CV(%)	6.5	5.9	4.1	3.3	6.2	6.3	8.3	6.9	4.3	4.8		4.0	7.0				

Table 2. 2014 Summary of Conventionally Sprayed Alfalfa Yield Trials Since fall of 2010-Othello, WA

Entry	Seeded August 2010				Seeded August 2011				Seeded August 2012				Seeded August 2013				6 YR Avg. of 2010 & 2011 Trials
	2011	2012	2013	3 Yr.	2012	2013	2014	3 Yr.	2013	2014	2015	2 Yr.	2014	2015	2016	2 Yr.	
12005													105.1%				
4R200					111.6%	101.6%	104.2%	105.7%									
55Q27									106.5%	108.4%		107.4%					
6305Q	93.0%	98.0%	99.1%	98.6%	96.4%	105.7%	105.9%	102.7%									100.7%
6422Q	92.2%	100.4%	101.7%	99.5%													
6585Q													105.6%				
AmeriStand 407TQ	99.7%	99.1%	103.2%	100.8%	99.8%	104.9%	104.5%	103.1%									102.0%
AmeriStand 427TQ													98.4%				
AmeriStand 445NT	106.2%	94.1%	98.0%	98.0%	115.8%	110.3%	108.2%	111.3%					98.5%				104.7%
Camas													96.0%				
CB001					102.8%	98.7%	101.4%	100.9%	96.7%	94.2%		95.5%					
CB11001									100.4%	98.6%		99.5%					
CB11011									98.2%	95.1%		96.8%					
CW 104038									98.2%	96.1%		97.2%					
DG4210	94.9%	106.2%	105.8%	104.0%	92.9%	85.1%	84.8%	87.5%	105.7%	110.7%		108.1%	103.6%				95.8%
DKA 34-17 RR					104.6%	102.0%	100.1%	102.2%									
DKA 41-18 RR					101.7%	96.7%	99.3%	99.2%									
DKA 43-13	105.7%	99.8%	102.4%	102.0%					101.6%	105.5%		103.4%					
DKA 43-22 RR					108.7%	102.6%	103.7%	104.9%									
DKA 50-18									99.7%	105.2%		102.2%					
DSB01-T					105.9%	91.5%	90.5%	95.8%									
DSB08-M					110.1%	101.9%	94.8%	102.2%									
DSD01-T													110.4%				
DSD06-M													104.7%				
Enhancer II					106.3%	97.1%	90.8%	98.6%									
FGI 48W201					101.9%	104.4%	102.2%	102.9%									
FGI 48W202					94.2%	102.4%	107.0%	101.2%									
FGI 48W203					102.7%	106.9%	109.6%	106.4%	95.0%	108.2%		101.6%					
FGI R58HG236					100.2%	100.4%	106.0%	102.2%									
FSG403LR													102.7%				
FSG423ST													98.9%				
FSG424													96.9%				
GrandStand	102.3%	101.8%	98.8%	100.5%	100.3%	104.6%	106.5%	103.8%					96.7%				102.2%
Gunner					114.1%	114.7%	114.9%	114.6%									
Hybri Force-240	108.7%	95.2%	94.1%	97.2%													
HybriForce-3400					114.0%	99.2%	92.8%	101.9%									
LegenDairy 5.0	96.8%	98.7%	99.6%	98.6%	101.2%	102.6%	103.4%	102.4%									100.5%
Magna 551	102.7%	101.4%	96.3%	99.5%													
Magnum 7					109.7%	99.3%	100.3%	103.0%	111.5%	103.4%		107.7%					
MasterPiece II					103.8%	104.3%	105.0%	104.4%	104.7%	103.0%		103.9%					
Nimbus													101.4%				
PGI 424					103.2%	100.1%	101.1%	101.1%									
Rebound 6.0	100.6%	100.8%	99.2%	100.1%	103.0%	105.2%	104.7%	104.3%									102.2%
Seneca									100.8%	102.6%		101.6%					
Vernal									81.9%	82.6%		82.2%	82.0%				
Vernema									97.7%	89.0%		93.6%	99.1%				
Whitney									101.4%	97.6%		99.6%					
WL 354HQ					104.8%	109.5%	112.6%	109.0%									
WL 363HQ	97.1%	102.2%	101.8%	101.0%													
AV-T/AC	4.39	9.55	10.42	24.35	9.81	9.52	9.13	27.62	11.60	10.26		21.85					
LSD 9-11 (0.05) 12 (0.10)	NS	NS	6.0%	NS	9.8%	7.7%	9.1%	8.1%	7.5%	5.7%		6.1%					
CV (%)	8.4%	4.6%	4.6%	3.9%	7.9%	5.4%	6.5%	5.8%	6.3%	4.7%		5.1%					

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
428RR	Allied Seed LLC	4	1	HR	HR	HR	HR	HR	HR		HR		MR		
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		
6585Q	Nexgrow Alfalfa	5	2	HR	HR	HR	HR	HR	HR		R		HR		
AmeriStand 407TQ	America's Alfalfa	4	2	HR	HR	HR	HR	HR	HR	R	HR		MR		R
AmeriStand 427TQ	America's Alfalfa	4	1	HR	HR	HR	HR	HR	HR		R		HR		
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
Camas	Eureka Seeds, Inc.	4		HR	R	HR	HR	HR	HR		R		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
DKA41-18RR	DeKalb	4	2	HR	HR	HR	HR	HR	HR	HR	HR		R		R
DKA43-13	DeKalb	4	1	HR	HR	HR	HR	HR	HR		R		R		R
DKA43-22RR	DeKalb	4	2	HR	HR	HR	HR	HR	HR				HR		R
DKA44-16RR	DeKalb	4	2	HR	HR	HR	HR	HR	HR	R	R		R		
DKA50-18	DeKalb	5	2	HR	HR	HR	HR	HR	HR	R	R		R		
FSG428RR	Allied Seed	4	1	HR	HR	HR	HR	HR	HR		HR		MR		
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 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
Nimbus	CropPlan Genetics	5		HR	H	HR	HR	HR	HR		HR		HR		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
PGI 424	Producer's Choice	4		HR		HR	HR	HR	R		R		HR		R
Plumas	Eureka Seeds, Inc.	4		HR	R	HR	HR	HR	R	R	R		HR		MR
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
Vernema	Public	4		MR	MR		LR	LR		MR			HR		
Whitney	Eureka Seeds, Inc.	4	3	HR	HR	HR	HR	HR		R	HR		HR		HR
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
Variety	Contact for Marketing Info.	FD		BW	VW	FW	AN	PRR	APH	SAA	PA	BAA	SN	SRKN	NRKN

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 – 2015 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. Only data from these publications were used.

Table 4. Three-Year Forage Yield - Fall 2011 Alfalfa Variety Trial in 2014, Othello, Adams County, WA
Forage Yield (Ton DM/ac)

Seeded 8/26/2011	2012				2013		2014 Harvests (tons/acre)						3 Yr. Total		2014 Fall
	RR or	Total			Total		5-20	6-25	7-25	9-9	Total		2011 - 2014		Stand
Company	Entry	Conv.	tons/acre	% Mean	tons/acre	% Mean	Cut 1	Cut 2	Cut 3	Cut 4	Total	% Mean	Total	% Mean	%
Croplan Genetics	Gunner	Conv.	10.23	114.0%	10.91	114.7%	3.11	3.04	2.42	1.92	10.50	114.9%	31.64	114.6%	91.8
America's Alfalfa	AmeriStand 445NT	Conv.	10.38	115.7%	10.49	110.3%	3.09	2.78	2.14	1.87	9.88	108.2%	30.75	111.3%	83.0
W-L Research	WL 354HQ	Conv.	9.40	104.7%	10.42	109.5%	3.31	2.84	2.24	1.90	10.28	112.6%	30.10	109.0%	80.0
Forage Genetics	FGI 48W203	Conv.	9.21	102.7%	10.17	106.9%	3.07	2.81	2.28	1.84	10.00	109.6%	29.39	106.4%	79.2
Eureka Seeds	4R200	RR	10.00	111.5%	9.67	101.6%	3.05	2.67	2.07	1.74	9.52	104.2%	29.19	105.7%	79.8
Monsanto	DKA 43-22 RR	RR	9.74	108.6%	9.76	102.6%	3.09	2.65	2.01	1.72	9.47	103.7%	28.97	104.9%	78.1
JR Simplot	MasterPiece II	Conv.	9.31	103.8%	9.92	104.3%	3.01	2.65	2.03	1.89	9.59	105.0%	28.82	104.4%	81.9
Croplan Genetics	Rebound 6.0	Conv.	9.23	102.9%	10.01	105.2%	2.97	2.68	2.12	1.78	9.56	104.7%	28.81	104.3%	78.7
Crop Production Services	Grandstand	Conv.	8.99	100.2%	9.96	104.6%	3.16	2.75	2.11	1.70	9.72	106.5%	28.66	103.8%	77.4
America's Alfalfa	AmeriStand 407TQ	Conv.	8.95	99.8%	9.98	104.9%	3.04	2.74	2.04	1.72	9.54	104.5%	28.48	103.1%	79.2
Dairyland Seed Co.	Magnum 7	Conv.	9.84	109.6%	9.45	99.3%	3.18	2.47	1.85	1.66	9.16	100.3%	28.45	103.0%	74.9
Forage Genetics	FGI 48W201	Conv.	9.14	101.8%	9.94	104.4%	2.84	2.63	2.10	1.77	9.34	102.2%	28.41	102.9%	81.9
Syngenta	6305Q	Conv.	8.64	96.3%	10.06	105.7%	3.17	2.73	2.08	1.70	9.67	105.9%	28.37	102.7%	82.1
Croplan Genetics	LegenDairy 5.0	Conv.	9.07	101.1%	9.76	102.6%	3.09	2.64	2.03	1.68	9.44	103.4%	28.28	102.4%	82.9
Monsanto	DKA 34-17 RR	RR	9.38	104.5%	9.71	102.0%	2.95	2.55	2.02	1.62	9.14	100.1%	28.23	102.2%	78.7
Dairyland Seed Co.	DSB08-M	Conv.	9.87	110.0%	9.69	101.9%	2.83	2.27	1.80	1.76	8.66	94.8%	28.22	102.2%	91.1
Forage Genetics	FGI R58HG236	Conv.	8.99	100.2%	9.55	100.4%	2.80	2.71	2.28	1.88	9.68	106.0%	28.21	102.2%	83.7
Dairyland Seed Co.	HybriForce-3400	Conv.	10.22	114.0%	9.44	99.2%	2.87	2.21	1.73	1.66	8.48	92.8%	28.14	101.9%	73.8
Forage Genetics	FGI 48W202	Conv.	8.45	94.2%	9.74	102.4%	2.97	2.76	2.18	1.85	9.77	107.0%	27.96	101.2%	83.8
Producer's Choice	PGI 424	Conv.	9.25	103.1%	9.53	100.1%	3.02	2.53	1.87	1.72	9.14	100.1%	27.92	101.1%	77.4
Columbia Basin	CB001	Conv.	9.22	102.8%	9.39	98.7%	3.01	2.58	1.97	1.71	9.26	101.4%	27.87	100.9%	75.0
Monsanto	DKA 41-18 RR	RR	9.11	101.6%	9.21	96.7%	2.84	2.45	2.04	1.74	9.07	99.3%	27.39	99.2%	77.7
Crop Production Services	Enhancer II	Conv.	9.71	108.2%	9.24	97.1%	2.86	2.19	1.68	1.56	8.29	90.8%	27.24	98.6%	83.7
Dairyland Seed Co.	DSB01-T	Conv.	9.49	105.8%	8.70	91.5%	2.79	2.20	1.70	1.57	8.27	90.5%	26.46	95.8%	80.6
Crop Production Services	DG4210	Conv.	8.33	92.8%	8.10	85.1%	2.46	2.05	1.69	1.54	7.75	84.8%	24.17	87.5%	82.4
Public	Vernema ¹	Conv.	4.11	45.8%	7.18	75.5%	2.34	1.76	1.36	1.34	6.80	74.5%	18.09	65.5%	50.1
Public	Vernal ¹	Conv.	3.98	44.4%	6.93	72.9%	2.42	1.60	1.23	1.32	6.58	72.0%	17.49	63.3%	16.3
	Mean		8.97	100.0%	9.52	100.0%	2.94	2.52	1.97	1.71	9.13	100.0%	27.62	100.0%	77.2
	CV %		7.9	7.9	5.4	5.4	9.8	6.3	6.2	6.9	6.5	6.5	5.8	5.8	10.1
	LSD 5%		0.88	9.81	0.73	7.7%	0.40	0.22	0.17	0.17	0.83	9.1%	2.23	8.1%	11.0

¹ Vernal and Vernema seed was of poor quality so replanting was accomplished in Spring of 2012.

Table 5. Three-Year Forage Yield-Fall 2011 Alfalfa Variety Trial in 2014, Franklin County, WA
Forage Yield (Ton DM/A)

Seeded 9/1/2011		RR or Conv.	2012		2013		2014 Harvests						3 Yr. Total		Fall 2014
Company	Entry		Total Tons/A	% of Mean	Total Tons/A	% of Mean	15-May Cut 1	24-Jun Cut 2	22-Jul Cut 3	10-Sep Cut 4	Total	% of Mean	Total Tons/A	% of Mean	Stand %
W-L Research	WL 354HQ	Conv.	8.40	107.2%	11.13	107.1%	3.43	2.70	2.57	1.70	10.40	107.1%	29.93	107.1%	88.1
America's Alfalfa	445NT	Conv.	8.51	108.6%	10.81	104.1%	3.64	2.72	2.13	1.89	10.37	106.8%	29.69	106.3%	82.5
Syngenta	6422Q	Conv.	8.44	107.7%	10.86	104.5%	3.42	2.74	2.38	1.71	10.25	105.5%	29.54	105.8%	85.7
Dairyland Seed Co.	HybriForce-2600	Conv.	8.58	109.5%	10.81	104.0%	3.40	2.57	2.37	1.68	10.02	103.2%	29.41	105.3%	84.8
Producer's Choice	PGI 557	Conv.	8.55	109.2%	10.62	102.2%	3.57	2.44	2.30	1.71	10.02	103.2%	29.19	104.5%	81.8
Monsanto	DKA 43-22 RR	RR	8.26	105.4%	10.75	103.5%	3.45	2.45	2.45	1.75	10.10	104.0%	29.11	104.2%	84.9
Forage Genetics	FGI R58HG236	Conv.	7.95	101.4%	10.55	101.6%	3.29	2.71	2.45	1.82	10.26	105.7%	28.76	102.9%	86.3
Forage Genetics	FGI 48W203	Conv.	8.08	103.1%	10.38	100.0%	3.68	2.63	2.24	1.73	10.27	105.8%	28.74	102.9%	83.2
Forage Genetics	FGI 48W201	Conv.	8.17	104.3%	10.24	98.5%	3.59	2.57	2.42	1.72	10.30	106.1%	28.71	102.8%	86.8
Forage Genetics	FGI 48W202	Conv.	7.94	101.3%	10.79	103.9%	3.40	2.60	2.31	1.65	9.97	102.7%	28.71	102.8%	86.0
JR Simplot Co.	MasterPiece II	Conv.	8.56	109.3%	10.59	101.9%	3.33	2.35	2.10	1.58	9.37	96.5%	28.52	102.1%	83.5
Croplan Genetics	Rebound 6.0	Conv.	8.13	103.8%	10.49	100.9%	3.25	2.50	2.33	1.79	9.87	101.6%	28.49	102.0%	84.6
Monsanto	DKA 41-18 RR	RR	8.57	109.3%	10.33	99.5%	3.18	2.47	2.18	1.59	9.42	97.0%	28.32	101.4%	88.0
America's Alfalfa	407TQ	Conv.	8.09	103.2%	10.44	100.5%	3.40	2.47	2.21	1.67	9.75	100.4%	28.27	101.2%	88.5
Croplan Genetics	LegenDairy 5.0	Conv.	8.24	105.1%	10.47	100.8%	3.45	2.35	2.13	1.62	9.55	98.3%	28.26	101.2%	80.0
Crop Production Services	Grandstand	Conv.	7.93	101.2%	10.75	103.4%	3.31	2.46	2.13	1.59	9.49	97.7%	28.17	100.8%	77.9
Forage Genetics	FGI 59W212	Conv.	8.01	102.2%	10.48	100.9%	3.41	2.45	2.23	1.55	9.64	99.3%	28.13	100.7%	84.6
Eureka Seeds	6R100	RR	8.05	102.7%	10.40	100.1%	3.13	2.43	2.31	1.79	9.64	99.3%	28.09	100.5%	91.0
Crop Production Services	DG4210	Conv.	8.00	102.0%	9.67	93.0%	3.20	2.44	2.12	1.77	9.53	98.1%	27.19	97.3%	86.8
Public	Vernema	Conv.	3.82	48.8%	9.35	90.0%	2.92	1.98	1.80	1.43	8.13	83.8%	21.31	76.3%	83.1
Public	Vernal	Conv.	4.27	54.5%	8.27	79.6%	2.90	1.72	1.53	1.39	7.58	78.1%	20.13	72.1%	76.5
Mean			7.84	100.0%	10.39	100.0%	3.35	2.46	2.22	1.67	9.71	100.0%	27.94	100.0%	84.5
CV %			6.2	6.2	6.3	6.3	7.3	8.3	9.5	9.0	5.9	5.9	4.9	4.9	5.9
LSD 5%			0.69	8.8%	0.94	9.0%	0.35	0.29	0.30	0.21	0.81	8.3%	1.92	6.9%	7.1

¹ Vernal and Vernema seed was of poor quality so replanting was accomplished in Spring of 2012.

Table 6. Two-Year Forage Yield-Fall 2012 Planting in 2014, Franklin County, WA
Forage Yield (Ton DM/A)

Planted 8/24/2012		Fall	2013		2014 Harvests						2 Yr. Total		Regrowth*
		Dorm.	Total	% of	5-14	6-24	7-22	9-10	Total	% of	Total	% of	Rating
Company	Entry	Rating	Tons/A	Mean	Cut 1	Cut 2	Cut 3	Cut 4	Total	Mean	Tons/A	Mean	23-Sep-14
Forage Genetics	FG 48W203	4	11.82	103.7%	3.78	2.60	2.69	1.92	10.99	103.1%	22.82	103.4%	4.00
Producer's Choice	CW 085028	5	11.34	99.5%	3.86	2.87	2.78	1.95	11.45	107.4%	22.79	103.3%	4.50
Precision Genetics	CB11001	4	12.09	106.1%	3.59	2.57	2.42	1.99	10.56	99.1%	22.65	102.7%	4.75
Pioneer Hi Bred	55Q27	5	11.33	99.4%	3.92	2.73	2.60	1.92	11.18	104.9%	22.51	102.0%	4.75
Croplan Genetics	Rebound 6.0	4	11.69	102.6%	3.75	2.55	2.66	1.72	10.68	100.2%	22.37	101.4%	3.25
Services	DG 4210	4	11.77	103.2%	3.58	2.56	2.52	1.91	10.57	99.2%	22.34	101.3%	4.50
America's Alfalfa	445NT	4	11.49	100.8%	3.58	2.55	2.71	1.93	10.76	101.0%	22.26	100.9%	4.50
NEXGROW	6401N	4	11.43	100.3%	3.65	2.48	2.74	1.94	10.81	101.4%	22.24	100.8%	5.00
Monsanto	DKA 50-18	5	11.57	101.5%	3.48	2.63	2.67	1.90	10.67	100.1%	22.24	100.8%	4.75
JR Simplot Co.	MasterPiece II	4	11.54	101.2%	3.61	2.63	2.43	2.03	10.69	100.3%	22.23	100.8%	4.75
Wilbur-Ellis Co.	Integra 8420	4	11.52	101.1%	3.67	2.54	2.43	1.86	10.51	98.6%	22.03	99.9%	4.50
Monsanto	DKA 43-13	4	11.35	99.6%	3.74	2.64	2.43	1.80	10.61	99.5%	21.95	99.5%	3.75
W-L Research	WL 354HQ	4	11.16	97.9%	3.55	2.62	2.54	1.93	10.64	99.8%	21.80	98.8%	4.50
Croplan Genetics	Gunner	5	11.00	96.5%	3.86	2.64	2.49	1.80	10.78	101.2%	21.78	98.7%	4.25
Precision Genetics	CB9003	4	10.95	96.1%	3.71	2.62	2.42	1.95	10.70	100.4%	21.65	98.1%	5.00
Eureka	Whitney	4	11.57	101.5%	3.28	2.46	2.34	1.96	10.05	94.3%	21.62	98.0%	4.75
Precision Genetics	CB11011	4	10.47	91.8%	3.67	2.48	2.44	1.91	10.50	98.5%	20.96	95.0%	5.00
Dairyland Seed Co.	HybriForce-2600	6	11.07	97.2%	3.43	2.32	2.28	1.67	9.70	91.0%	20.77	94.2%	3.50
Mean		4.3	11.40	100.0%	3.65	2.58	2.53	1.89	10.66	100.0%	22.06	100.0%	4.44
CV %			4.3	4.3	7.1	5.6	8.2	8.3	4.8	4.8	4.00	4.0	11.5
LSD 10%			0.58	5.1%	NS	0.17	0.24	NS	0.60	5.6%	1.04	4.7%	0.60

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

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

Table 7. Two-Year Forage Yield-Fall 2012 Alfalfa Variety Trial in 2014, Othello, Adams County, WA
Forage Yield (Ton DM/A)

Planted 8/24/2012		Fall	2013		2014 Harvests						2 Yr Total		Regrowth*
		Dorm.	Total	% of	20-May	25-Jun	25-Jul	9-Sep	Total	% of	Total	% of	Rating
Company	Entry	Rating	Tons/A	Mean	Cut 1	Cut 2	Cut 3	Cut 4	tons/a	Mean	Tons/A	Mean	25-Sep-14
Services	DG 4210	4	12.262	105.7%	3.53	3.21	2.52	2.10	11.36	110.7%	23.62	108.1%	4.25
Dairyland Seed Co.	Magnum 7	4	12.926	111.5%	3.56	2.91	2.10	2.03	10.60	103.4%	23.53	107.7%	3.50
Pioneer Hi Bred	55Q27	5	12.355	106.5%	3.46	3.13	2.45	2.07	11.12	108.4%	23.47	107.4%	4.75
JR Simplot Co.	MasterPiece II	4	12.148	104.7%	3.35	2.91	2.24	2.07	10.56	103.0%	22.71	103.9%	4.50
Monsanto	DKA 43-13	4	11.783	101.6%	3.28	3.10	2.44	2.00	10.82	105.5%	22.60	103.4%	4.50
Monsanto	DKA 50-18	5	11.558	99.7%	3.34	3.08	2.39	1.97	10.78	105.2%	22.34	102.2%	4.75
Services	Seneca	4	11.687	100.8%	3.44	2.92	2.17	1.99	10.52	102.6%	22.21	101.6%	3.75
Forage Genetics	FGI 48W203	4	11.013	95.0%	3.34	3.16	2.50	2.09	11.10	108.2%	22.11	101.2%	5.00
Eureka	Whitney	4	11.754	101.4%	3.21	2.76	2.11	1.92	10.00	97.6%	21.76	99.6%	3.75
Precision Genetics	CB11001	4	11.643	100.4%	3.27	2.80	2.15	1.88	10.11	98.6%	21.75	99.5%	4.50
Producers Choice	CW 104038	4	11.391	98.2%	3.49	2.68	1.89	1.79	9.85	96.1%	21.24	97.2%	2.25
Precision Genetics	CB11011	4	11.393	98.2%	3.33	2.81	1.93	1.68	9.75	95.1%	21.15	96.8%	2.75
Precision Genetics	CB001	4	11.215	96.7%	3.00	2.73	2.10	1.83	9.66	94.2%	20.87	95.5%	3.50
WA Seed Certif.	Vernema	4	11.327	97.7%	3.09	2.47	1.82	1.74	9.12	89.0%	20.45	93.6%	2.25
WA Seed Certif.	Vernal	2	9.4997	81.9%	3.04	2.18	1.63	1.62	8.47	82.6%	17.97	82.2%	1.25
Mean		4.0	11.60	100.0%	3.32	2.86	2.16	1.92	10.26	100.0%	21.85	100.0%	3.68
CV %			6.3	6.3	6.3	5.2	5.4	6.5	4.7	4.7	5.1	5.1	14.3
LSD 10%			0.87	7.5%	0.25	0.18	0.14	0.15	0.58	5.7%	1.33	6.1%	0.63

* 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 8. Two-Year Roundup Ready Forage Yield 2012 Alfalfa Variety Trial in 2014, Franklin County, WA
Forage Yield (Ton DM/A)

Planted 8/24/2014		Fall	2013		2014 Harvests						2013 & 2014		Regrowth*
		Dorm.	Total	% of	19-May	24-Jun	22-Jul	10-Sep	Total	% of	Total	% of	Rating
Company	Entry	Rating	Tons/A	Mean	Cut 1	Cut 2	Cut 3	Cut 4	Tons/A	Mean	Tons/A	Mean	23-Sep-14
NEXGROW	6547R	5	11.78	104.2%	3.43	2.65	2.36	1.90	11.78	104.3%	23.56	104.3%	5.00
W-L Research	WL 372HQ.RR	4	11.71	103.6%	3.49	2.82	2.46	1.81	11.71	103.7%	23.43	103.7%	4.50
Croplan Genetics	RR NemaStar	4	11.61	102.7%	3.08	2.67	2.42	1.74	11.61	102.8%	23.22	102.8%	4.75
Eureka	4R200	4	11.53	102.0%	3.54	2.75	2.43	1.97	11.53	102.1%	23.06	102.1%	4.75
America's Alfalfa	AmeriStand 455TQ RR	5	11.50	101.8%	3.61	2.67	2.35	1.82	11.50	101.9%	23.01	101.8%	4.00
Croplan Genetics	RR Tonnica	5	11.37	100.6%	3.57	2.58	2.51	1.84	11.37	100.7%	22.74	100.6%	5.00
NEXGROW	6516R	5	11.29	99.9%	3.48	2.71	2.50	1.87	11.29	100.0%	22.58	99.9%	4.75
Croplan Genetics	RR AphaTron	5	11.27	99.7%	3.65	2.59	2.44	1.83	11.27	99.8%	22.54	99.8%	4.50
America's Alfalfa	AmeriStand 415NT RR	4	11.22	99.3%	3.60	2.76	2.34	1.86	11.22	99.3%	22.44	99.3%	4.25
NEXGROW	Mutiny	4	11.19	99.0%	3.86	2.69	2.34	1.86	11.19	99.1%	22.37	99.0%	4.75
Monsanto	DKA 43-22 RR	4	11.10	98.2%	3.34	2.63	2.36	1.78	11.10	98.3%	22.20	98.2%	4.75
Monsanto	DKA 44-16 RR	4	11.15	98.7%	3.42	2.59	2.52	1.82	11.01	97.5%	22.16	98.1%	4.50
Pioneer Hi Bred	55VR05	5	11.04	97.7%	3.38	2.65	2.33	1.81	11.04	97.8%	22.09	97.7%	4.25
Wilbur Ellis Co.	Integra 8444RR	5	10.92	96.6%	3.37	2.67	2.45	1.77	10.92	96.7%	21.84	96.6%	4.50
W-L Research	WL 356HQ.RR	4	10.86	96.1%	3.75	2.72	2.36	1.92	10.86	96.1%	21.71	96.1%	4.75
Mean		4.5	11.30	100.0%	3.51	2.68	2.41	1.84	11.29	100.0%	22.60	100.0%	4.60
CV %			3.5	3.5	7.1	3.2	5.0	4.9	3.6	3.6	3.6	3.6	9.7
LSD 10%			0.48	4.2%	0.30	0.10	NS	0.11	0.49	4.3%	0.96	4.2%	NS

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.

Table 9. One-Year Forage Yield-Fall 2013 Alfalfa Variety Trial in 2014, Othello, Adams County, WA
Forage Yield (Ton DM/A)

Planted 8/9/2013		Fall	2014 Harvests						2014 Fall
		Dorm.	20-May	25-Jun	25-Jul	9-Sep	Total		Sept. 14
Company	Entry	Rating	Cut 1	Cut 2	Cut 3	Cut 4	Total	% Mean	Regrowth
Dairyland Seed	DSD01-T ¹	4	3.88	3.09	2.15	2.08	13.29	110.4%	3.00
Nexgrow	6585Q	5	3.31	2.87	2.39	2.07	12.71	105.6%	5.00
Precision Seeds	12005 ¹	4	3.81	2.95	2.13	1.88	12.65	105.1%	4.00
Dairyland Seed	DSD06-M ¹	4	3.80	2.79	2.09	1.96	12.60	104.7%	3.25
Crop Protection Services	DG 4210	4	3.50	2.86	2.24	1.93	12.47	103.6%	4.00
Allied Seed LLC	FSG403LR ¹	4	3.77	2.80	2.03	1.88	12.36	102.7%	3.25
Croplan Genetics	Nimbus	5	3.14	2.87	2.30	1.95	12.21	101.4%	4.75
WA Seed Certif.	Vernema	4	3.65	2.72	1.88	1.83	11.92	99.1%	2.75
Allied Seed LLC	FSG423ST ¹	4	3.50	2.69	1.97	1.87	11.90	98.9%	3.50
America's Alfalfa	445NT	4	3.15	2.75	2.18	1.89	11.86	98.5%	4.50
America's Alfalfa	427TQ	4	3.18	2.74	2.19	1.87	11.84	98.4%	4.25
Allied Seed LLC	FSG424 ¹	4	3.05	2.69	2.21	1.85	11.66	96.9%	3.75
Crop Protection Services	GrandStand	4	3.37	2.66	2.05	1.78	11.64	96.7%	3.25
Eureka Seeds	Camas	4	3.15	2.61	2.16	1.82	11.56	96.0%	5.00
WA Seed Certif.	Vernal	2	3.27	2.14	1.50	1.48	9.87	82.0%	2.00
Mean		4.0	3.44	2.75	2.10	1.88	12.03	100.0%	3.75
CV %			8.0	5.4	5.5	7.2	5.3	100.0%	12.9
LSD 10%			0.33	0.18	0.14	0.16	0.76	6.3%	0.58

¹ Entered as Experimentals

* 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 Forage Yield-Fall 2013 Planting in 2014, Franklin County, WA
Forage Yield (Ton DM/A)

Planted 8/15/2013		Fall	2014 Harvests						Regrowth ¹
		Dorm.	19-May	23-Jun	22-Jul	10-Sep	Total	% of	Rating
Company	Entry	Rating	Cut 1	Cut 2 ²	Cut 3	Cut 4	Tons/A	Mean	23-Sep-14
America's Alfalfa	445NT	4	2.65	1.02	2.42	1.85	7.95	105.9%	4.00
Services	DG 4210	4	2.63	1.19	2.45	1.68	7.95	105.9%	3.25
Allied Seed LLC	FSG524	5	2.44	1.10	2.34	1.99	7.86	104.8%	4.75
Croplan Genetics	Nimbus	5	2.47	1.18	2.47	1.73	7.85	104.6%	4.75
Eureka Seeds	Camas	4	2.41	1.17	2.42	1.78	7.78	103.7%	3.75
Nexgrow	6585Q	5	2.48	1.19	2.21	1.79	7.67	102.3%	4.75
Services	GrandStand	4	2.31	1.13	2.32	1.78	7.54	100.6%	3.00
Precision Seeds	120051	4	2.38	0.99	2.29	1.88	7.54	100.5%	4.75
Legacy Seeds	L-455HD	4	2.51	1.08	2.20	1.64	7.43	99.1%	3.25
Public	Vernema	4	2.39	1.08	2.10	1.55	7.12	94.9%	3.00
America's Alfalfa	427TQ	4	2.39	0.98	2.07	1.52	6.96	92.8%	3.75
Public	Vernal	2	2.21	0.80	1.86	1.50	6.37	84.9%	1.50
Mean		4.1	2.44	1.07	2.26	1.70	7.47	100.0%	3.62
CV %			11.4	26.7	6.5	7.8	7.0	7.0	14.8
LSD 10%			NS	NS	0.18	0.16	0.63	8.4%	0.66

¹ Entered as Experimental

² Irrigation problem occurred during this cutting

* 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 11. One-Year Roundup Ready Forage Yield 2013 Alfalfa Variety Trial in 2014, Franklin County, WA
Forage Yield (Ton DM/A)

Planted 8/15/2013		Fall	2014 Harvests						Regrowth
		Dorm.	19-May	23-Jun	22-Jul	10-Sep	Total	% of	Rating
Company	Entry	Rating	Cut 1	Cut 2	Cut 3	Cut 4	Tons/A	Mean	23-Sep-14
Monsanto	DKA43-22RR	4	3.32	2.19	2.26	1.70	9.47	102.1%	5.00
Eureka Seeds	4R200	4	3.22	2.22	2.28	1.72	9.44	101.7%	5.00
Monsanto	DKA44-16RR	4	3.29	2.15	2.27	1.63	9.35	100.7%	4.75
Allied Seed LLC	428RR	4	3.20	2.14	2.30	1.69	9.33	100.6%	4.75
Monsanto	DKA41-18RR	4	3.36	2.11	2.15	1.57	9.19	99.1%	4.25
Forage Genetics	FG R49A132 ¹	4	3.27	1.95	2.17	1.51	8.89	95.8%	4.25
Mean			3.28	2.12	2.24	1.64	9.28	100.0%	4.67
CV %			4.9	7.2	5.1	3.0	3.3	3.3	9.0
LSD 10%			NS	NS	NS	0.06	NS	NS	0.52

¹ Entered as Experimental

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.