

# WSU and WSHGA Alfalfa Variety Trials

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# Support

- Washington Hay Growers Association
- Allied Seeds Inc.
  - Farm Science Genetics
- America's Alfalfa
- DLF
  - Alforex
  - Dairyland Seed Co. Inc.
- Dekalb
- Pioneer Hi-Bred Int'l,
- Blue River Hybrids
- BrettYoung
- CROPLAN Genetics
- Forage Genetics
- Go Seed
- J. R. Simplot Co.
- LG Seeds
- NEXGROW
- Nutrien Ag Solutions
- S & W Seed Co.
- Wilbur Ellis Company
- W-L Research, Inc.

# The Best Comparison is when:

- Everything is held constant and change varieties
- Small distance between comparisons to minimize soil variations
- Most of the available varieties are compared
- Three years of data is best.



# WSHGA / WSU trials

- All varieties are handled the same
  - Water
  - Harvest timing
  - Herbicide
  - Planting rate etc.
- They are grown for 3 years (4 - 5 cuttings / year)

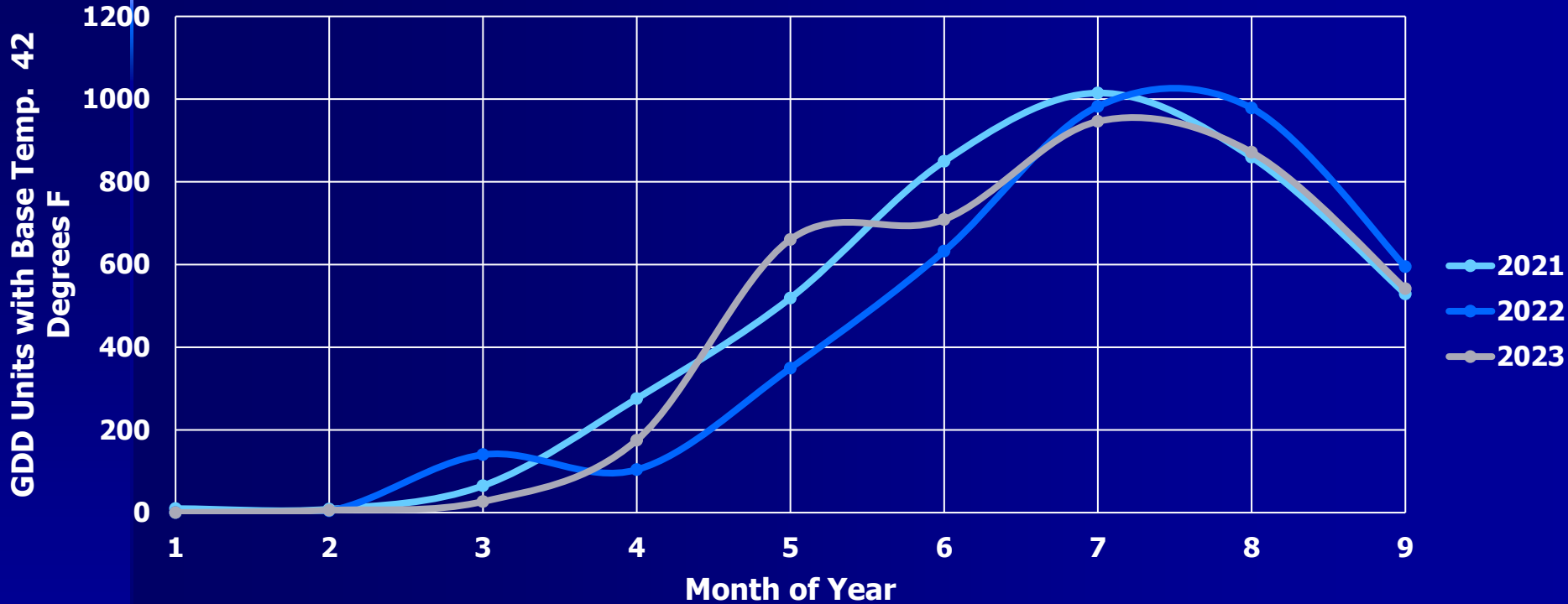
# The Value of WSHGA / WSU trials is this:

- Plots where the varieties are planted are randomized
- Each variety is grown four times to see if advantages are consistent
- It is open to all seed companies
  - 2023 18 different brands of alfalfa were compared
  - Company paid entry fees into the trials to show off their best

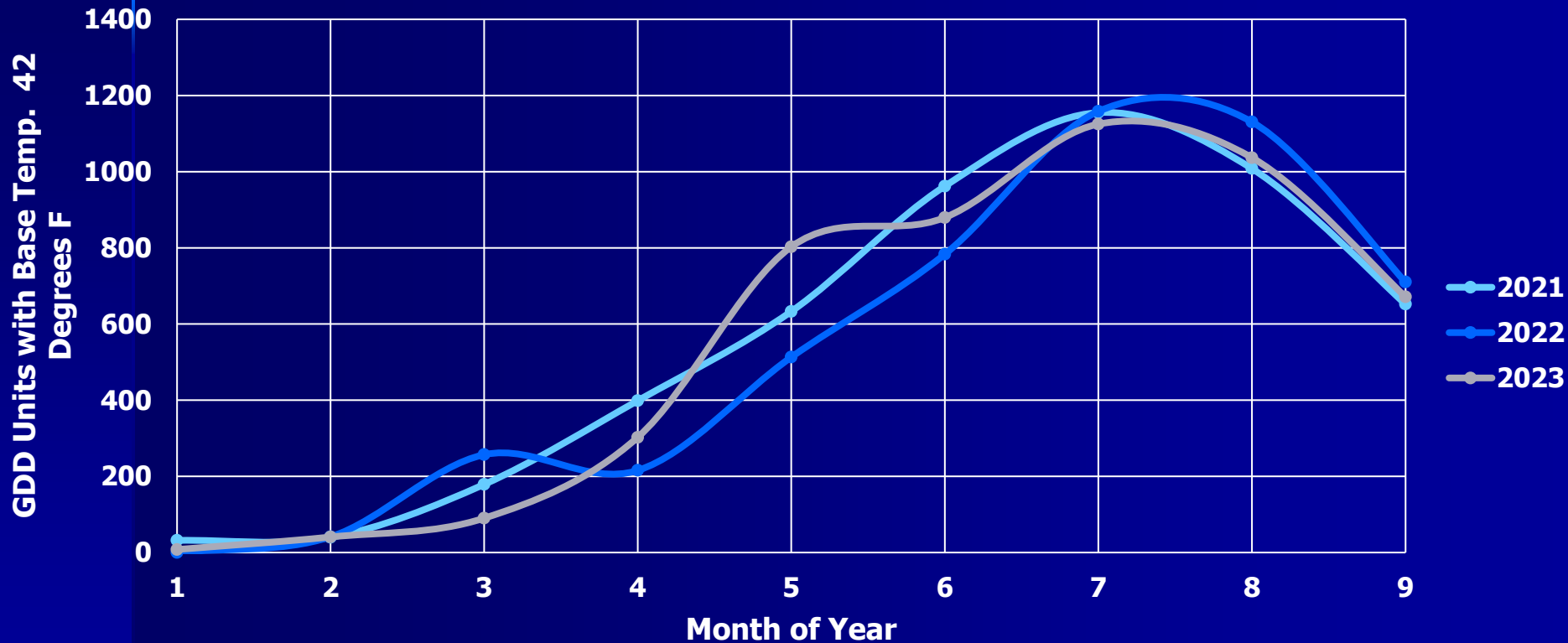
# GDD Units until May 21<sup>st</sup>

	2021	2022	2023
Othello	732	459	699
Pasco	955	724	778

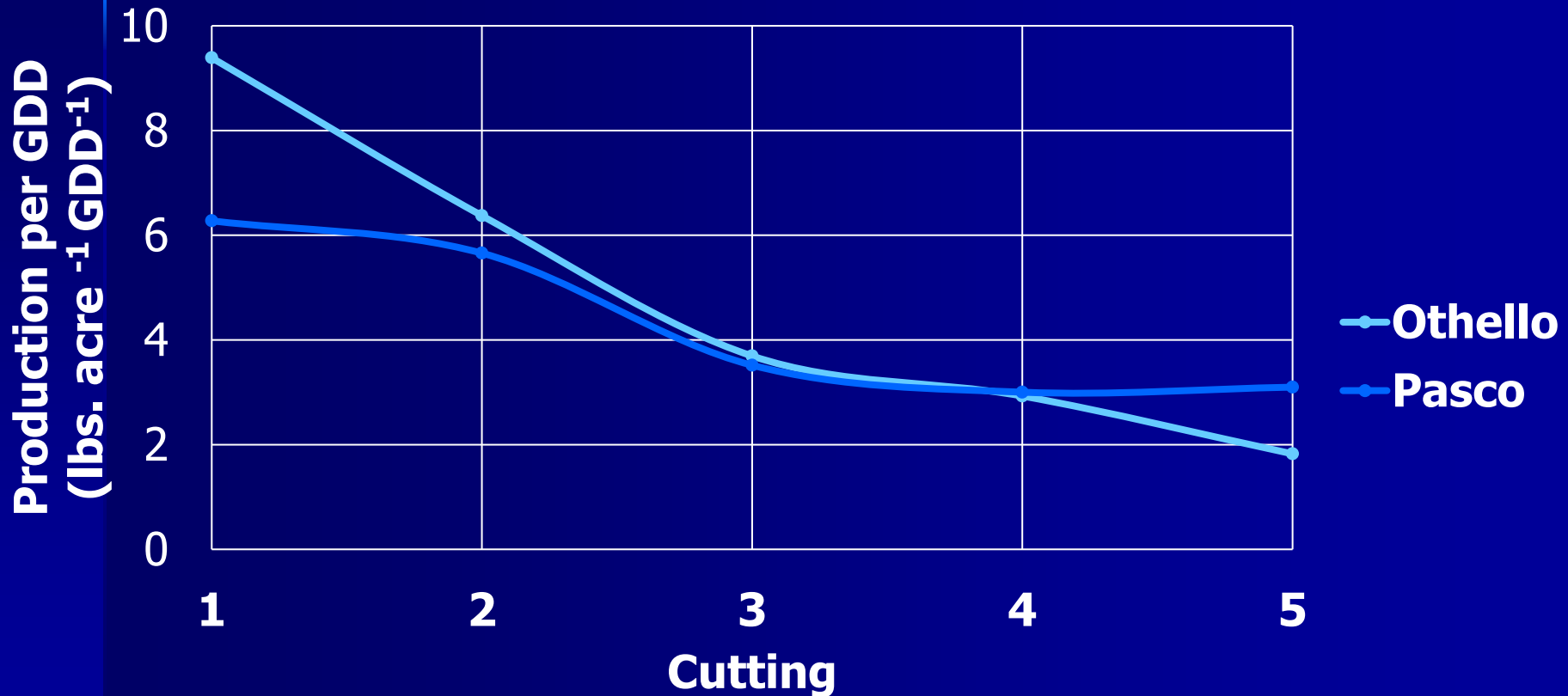
# Othello GDD Accumulated by Month



# Pasco GDD Accumulated by Month



# Yield of Hay Produced per GDD Unit (lbs. acre<sup>-1</sup> GDD<sup>-1</sup>) (Averaged over 2021-2023)



# **Conventional Alfalfa 2023 Winners**

Planted 8/6/20 Last Harvest 2023

# Othello Fall 2020 Expt. Winners

Company	Variety	% of Trial Avg.	Fall Dorm.	Winter hardiness	Stem Nemat.
America's Alfalfa	AmeriStand 428TQ	109.6	4	1	HR
W-L Research	WL 377HQ	107.3	5	NA	HR
S&W Seed Co.	SW5520Y	107.2	5	NA	NA
S&W Seed Co.	SW4306	106.3	4	NA	NA
Nutrien Ag Solutions	DG 4120	106.0	4	1	R
Legacy Seeds, LLC	LS - 06DR	103.8	4	NA	NA
Forage Genetics	FG C0415SN223*	103.7	NA	NA	NA
Bayer US Crop Science	DKA50-17	103.3	5	1	R

Planted 8/7/2020

Last Harvest 2023

# Pasco Fall 2020 Expt. Winners

Company	Variety	% of Trial Avg.	Fall Dorm.	Winter hardiness	Stem Nemat.
Alforex Seeds	X-Force 5400*	112.7	4	NA	NA
Mountain View Seeds	MVS 4220Q	111.1	4	NA	NA
Pioneer Brand	54Q29	105.0	4	NA	HR
Allied Seed	FSG 527	104.5	5	2	R
Bayer US Crop Science	DKA50-17	104.2	5	1	R

# Othello Location Six Year Results

Company	Variety	Average of 2018 & 2019 Trials	Average of 2018 & 2020 Trials	Average of 2019 & 2020 Trials
W – L Seed Co.	WL 377HQ			102.9%
Pioneer	54Q29			102.8%
Brett Young	Ace*	101.5%		
Forage Genetics	FG C0415SN223*			99.9%
	Vernal	83.4%	83.4%	82.6%

# Pasco Location Six Year Results

<b>Company</b>	<b>Variety</b>	<b>Average of 2017 &amp; 2018 Trials</b>	<b>Average of 2017 &amp; 2019 Trials</b>	<b>Average of 2018 &amp; 2019 Trials</b>
S & W Seed Co.	SW 5213	104.5%		
W-L Seeds	WL 349HQ	103.6		
Pioneer	54Q29	100.4%	101.2%	104.3%
Dekalb	DKA 44-18	100.5%	100.5%	103.3%
	Vernal	87.4%	82.5%	91.7%

# **Pasco Roundup Trials Sprayed with Roundup**

# RR Pasco Location

## 2020 RR Trial Winners

Company	Variety	% of Trial Avg.	Fall Dorm.	Winter hardiness	Stem Nemat.
DeKalb	DKA43-18RR	104.7	4.3	2	HR
NEXGROW	6527R.ST	101.8	NA	NA	NA
Bayer US Crop Science	DKA40-51	101.8	4	1	R
America's Alfalfa	Ameristand 416NT RR*	101.5	4	NA	HR
Wilbur Ellis	Integra 8471R	99.9	NA	NA	NA
Bayer US Crop Science	DKA44-16	99.3	4.4	2	R
W-L Research	WL375HVX.RR	93.7	5.0	2	HR

# RR Pasco Location Six Year Winners

<b>Company</b>	<b>Variety</b>	<b>Average of 2018 &amp; 2019 Trials</b>	<b>Average of 2018 &amp; 2020 Trials</b>	<b>Average of 2019 &amp; 2020 Trials</b>
Dekalb	DKA43-18RR	104.7%	103.1%	106.3%
Dekalb	DKA44-16RR	101.6%	99.6%	101.3%
	RR Check	98.2%	98.1%	98.7%
Dekalb	DKA 40-21HVXRR	96.6%		

# **Quality and Nutrient Value of Hay in the Trial**

First Cut Only Based on Nutrients  
Produced by the Alfalfa  
Midwest Prices

# Prices used in the report were of PNW prices

Nutrient	Units	2020	2021	2022	2023
Metabolizable Protein (MP)	\$/lb MP	0.33	0.534	1.072	0.723
Net Energy of Lactation (NEL)	\$/lb of Mcal	0.117	0.116	0.088	0.111
Effective Neutral Detergent Fiber (eNDF)	\$/lb	0.083	0.18	0.246	0.178
NDFD fiber adjustment	\$/NDF D from 47	+/- \$5.00	+/- \$5.00	\$6.50	

Planted 8/6/20 Harvested May 31, 2022

# Othello Fall 2020 Experiment

Company	Variety	Fall Dorm.	First Cut 2023 RFV	First Cut 2023 Yield	3 Yr. Avg. Total Nutrient Value \$/Ton	3 Yr. Total Nutrient Value \$/Acre
	High Qual. Check	3	144	3.18	398	5,610
Pioneer Brand	54Q29	4	125	2.98	379	4,666
Bayer US Crop Sci.	DKA50-17	5	133	2.94	385	4,643
Public	Vernal	2	129	2.26	398	4,366
GO Seed	GO-FU Falcata	NA	145	1.67	414	4,118

Planted 8/7/20 Harvested May 24, 2022.

# Pasco Fall 2020 Exp. Winners

Company	Variety	Fall Dorm.	First Cut 2023 RFV	First Cut 2023 Yield	3 Year Avg. Total Nutrient Value \$/Ton	3 Year Avg. Total Nutrient Value \$/Acre
	High Qual. Check	3	151	2.70	414	4,102
GO Seed	GO-FU Falcata	NA	137	2.27	431	4,048
Bayer US Crop Sci.	DKA50-17	5	135	2.26	398	3,974
Pioneer Brand	54Q29	4	133	2.24	394	3,945
Public	Vernal	2	130	2.13	407	3,678

# 2022 Value of Using the Alfalfa Variety Trials

Location of experiment started in 2019	Yield Difference Between Top 3 and Average	Difference Between Top and Bottom
	<u>Tons/Acre/Year</u>	<u>Tons/Acre /Year</u>
Othello	0.82	1.9
Pasco	0.94	1.9
Pasco RR	0.29	1.15
Averaged over Locations	0.68	1.65

# 2023 Impact of Using the Alfalfa Variety Trials (\$/Acre)

	<b>Yield Difference Between Top 3 and Average</b>	<b>Additional Gross Income from Hay @ \$300/ton</b>	<b>Extra Cost from Putting Up More Hay @\$31/ton for baling, hauling, stacking &amp; tarping</b>	<b>Net Increase in Income Per Year</b>
	<u>Tons/Acre/Year</u>	<u>\$/Acre/Year</u>	<u>\$/Acre/Year</u>	<u>\$/Acre Year</u>
Averaged over Locations APB	0.68	\$205	\$21	\$184
Top to Bottom MPB	1.65	\$495	\$51	\$444
<u>Nutrients Value W/O Costs</u>				
<b>Top to Bottom All Quality Experiments MPB</b>		<b>Avg of First Cut 2021, 2022 &amp; 2023 \$319 / acre / year</b>		

# Summary

## ■ Variety Matters

- Comparing top 3 varieties to avg. of trial  
Increase of \$0.68 tons per acre per year  
or \$184/acre year.
  - \$319 per acre difference between the top  
to bottom per year for first cut nutrient  
value basis for dairy feed in 2023 with  
out costs.
- ## ■ This is your best unbiased source of variety information across companies

WASHINGTON STATE UNIVERSITY



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# Questions

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