



UNIVERSITY OF MINNESOTA | EXTENSION

MAKING A DIFFERENCE IN MINNESOTA: ENVIRONMENT + FOOD & AGRICULTURE + COMMUNITIES + FAMILIES + YOUTH

# 2018 Wheat Variety Selection Prairie Grains Conference

Jochum Wiersma & Jim Anderson

# U OF M BREEDING PRIORITIES

## Agronomic Characteristics

1. Yield
2. Lodging resistance
3. Test Weight
4. Shattering
5. Kernel color
6. Pre-harvest sprouting resistance

## Diseases

1. Fusarium head blight (scab)
2. Bacterial leaf streak
3. Leaf rust
4. Stripe rust
5. Leaf Spotting (Tan Spot, Septoria's)
6. Barley yellow dwarf virus
7. Stem rust

## Bread-Making Quality Characteristics

1. % protein
2. Mixing Properties
3. Loaf Volume
4. Flour Water Absorption
5. Kernel Hardness
6. Flour color
7. Milling Yield
8. Percent Flour Ash



# RECENT U OF M RELEASES

Variety	Year of Release	2017 Acreage (%)
Rollag	2011	1.3
Norden	2012	0.1
Linkert	2013	28.2
Bolles	2015	14.4
Shelly	2016	5.6
Lang-MN	2017	0.5



51



6



67



# PHILOSOPHY

- I am a lousy meteorologist
- And all I know is that the markets will pay a premium for what I don't have

# MIX & MATCH



# THE NEWEST STUFF (2017)

Variety	Breeder
Dyna-Gro Caliber	Dyna-Gro
Lang-MN	MN
LCS Rebel	Limagrain Cereal Seeds
ND-VitPro	ND
TCG-Climax	21st Century Genetics
WB9479	Westbred
WB9590	Westbred





<b>Dyna-Gro Caliber</b>	<b>2</b>	WB9590	4
<b>Linkert</b>	<b>2</b>	WB9653	4
<b>TCG-Climax</b>	<b>2</b>	Boost	5
<b>HRS 3361</b>	<b>3</b>	Dyna-Gro Ambush	5
<b>HRS 3419</b>	<b>3</b>	Faller	5
<b>HRS 3504</b>	<b>3</b>	HRS 3530	5
<b>Rollag</b>	<b>3</b>	Lang-MN	5
<b>TCG-Cornerstone</b>	<b>3</b>	LCS Albany	5
<b>TCG-Spitfire</b>	<b>3</b>	LCS Anchor	5
<b>WB-Mayville</b>	<b>3</b>	LCS Nitro	5
Bolles	4	LCS Prime	5
Chevelle	4	ND-VitPro	5
HRS 3616	4	RB07	5
LCS Breakaway	4	Shelly	5
LCS Iguacu	4	LCS Rebel	6
Prevail	4	Prosper	6
SY Ingmar	4	SY Rowyn	6
SY Soren	4	Forefront	7
SY Valda	4	Surpass	7
WB9479	4		

# STRAW STRENGTH

- Varieties with 2 and 3 are the 'new' normal
- Varieties with 4 and 5 are classical HRSW and sufficient most years.

<b>Forefront</b>	3	HRS 3361	5
<b>Lang-MN</b>	3	HRS 3419	5
<b>ND-VitPro</b>	3	HRS 3616	5
<b>Rollag</b>	3	LCS Breakaway	5
<b>Bolles</b>	4	LCS Nitro	5
<b>Boost</b>	4	Linkert	5
<b>Dyna-Gro Ambush</b>	4	Prosper	5
<b>Faller</b>	4	SY Soren	5
<b>HRS 3530</b>	4	TCG-Spitfire	5
<b>LCS Albany</b>	4	WB9653	5
<b>LCS Iguacu</b>	4	HRS 3504	6
<b>LCS Prime</b>	4	LCS Anchor	6
<b>Prevail</b>	4	TCG-Cornerstone	7
<b>RB07</b>	4	WB-Mayville	7
<b>Shelly</b>	4	Dyna-Gro Caliber	–
<b>Surpass</b>	4	LCS Rebel	–
<b>SY Ingmar</b>	4	TCG-Climax	–
<b>SY Rowyn</b>	4	WB9479	–
<b>SY Valda</b>	4	WB9590	–
<b>Chevelle</b>	5		

## FHB

- Best Fungicides (Caramba & Prosaro) are reducing damage by ~70%
- Optimum timing is still Feekes 10.51 (beginning of anthesis) but window has been opened up to F10.51 + 5 days)

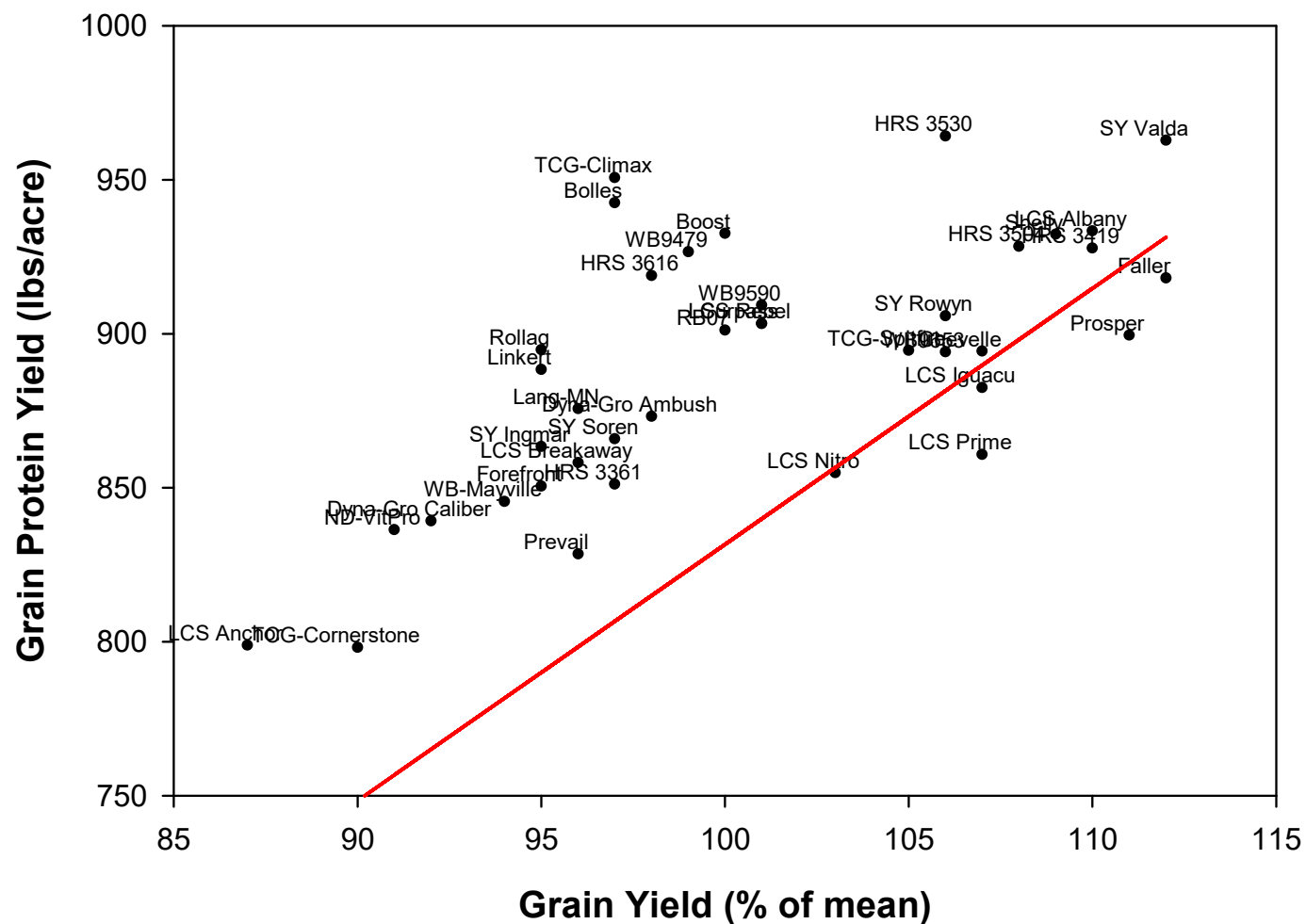
<b>Boost</b>	2	LCS Nitro	5
<b>Prevail</b>	2	LCS Prime	5
<b>SY Rowyn</b>	2	Prosper	5
<b>HRS 3504</b>	3	Shelly	5
<b>Lang-MN</b>	3	SY Soren	5
<b>Surpass</b>	3	RB07	6
<b>SY Ingmar</b>	3	WB-Mayville	6
<b>SY Valda</b>	3	LCS Albany	7
<b>WB9653</b>	3	Dyna-Gro Ambush	–
Faller	4	Dyna-Gro Caliber	–
Forefront	4	HRS 3616	–
HRS 3361	4	LCS Anchor	–
HRS 3530	4	LCS Rebel	–
LCS Breakaway	4	ND-VitPro	–
Linkert	4	TCG-Climax	–
Rollag	4	TCG-Cornerstone	–
Bolles	5	TCG-Spitfire	–
Chevelle	5	WB9479	–
HRS 3419	5	WB9590	–
LCS Iguacu	5		

## BLS

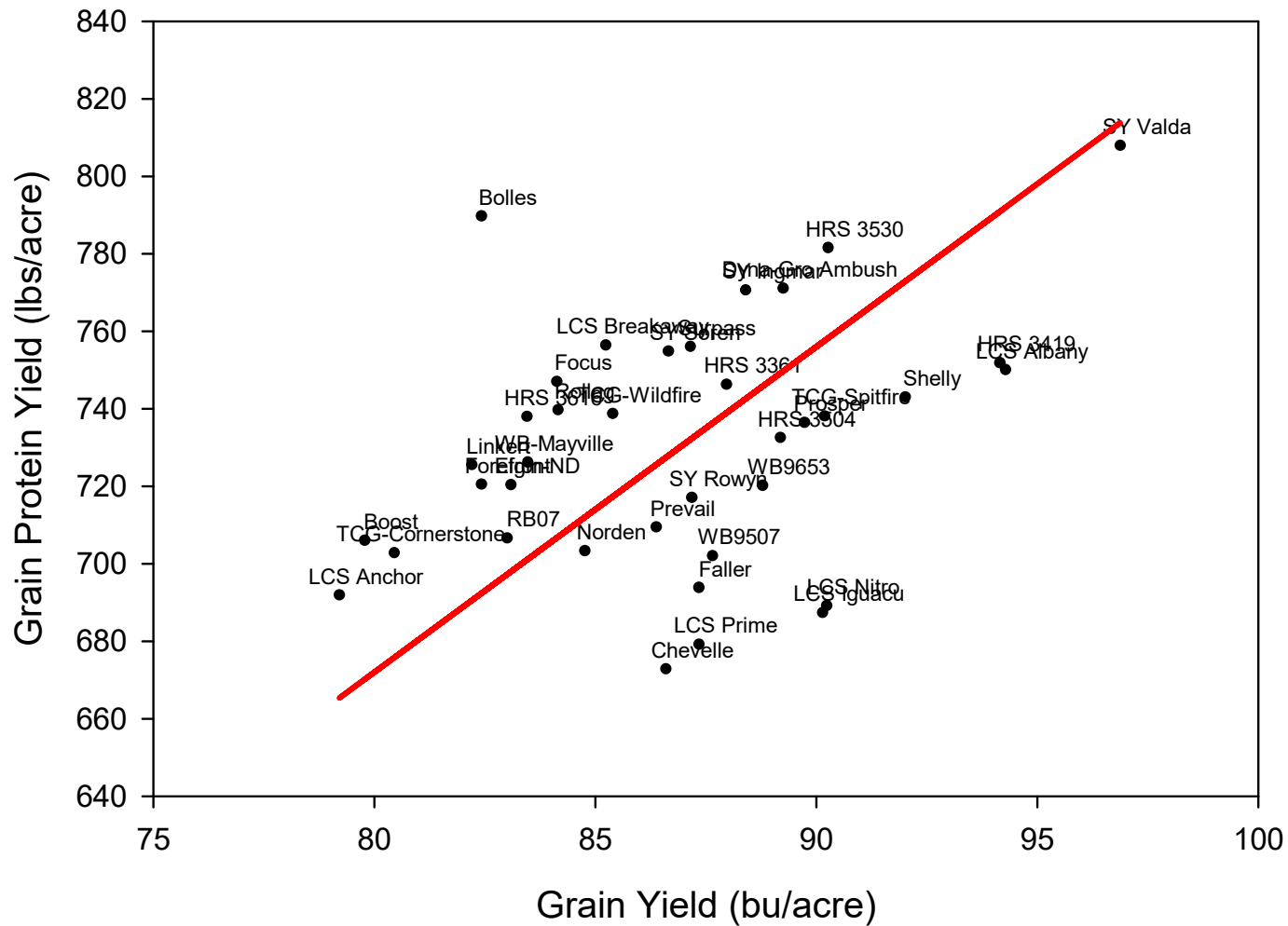
- Not much disease in 2015 - 2017
- No control options, but there are differences among variety responses
- Select <5

# YIELD AND PROTEIN BIPLLOT

(NORTHERN LOCATIONS, 2017 DATA)



# YIELD AND PROTEIN BIPLLOT (NORTHERN LOCATIONS, 2015-2017 DATA)

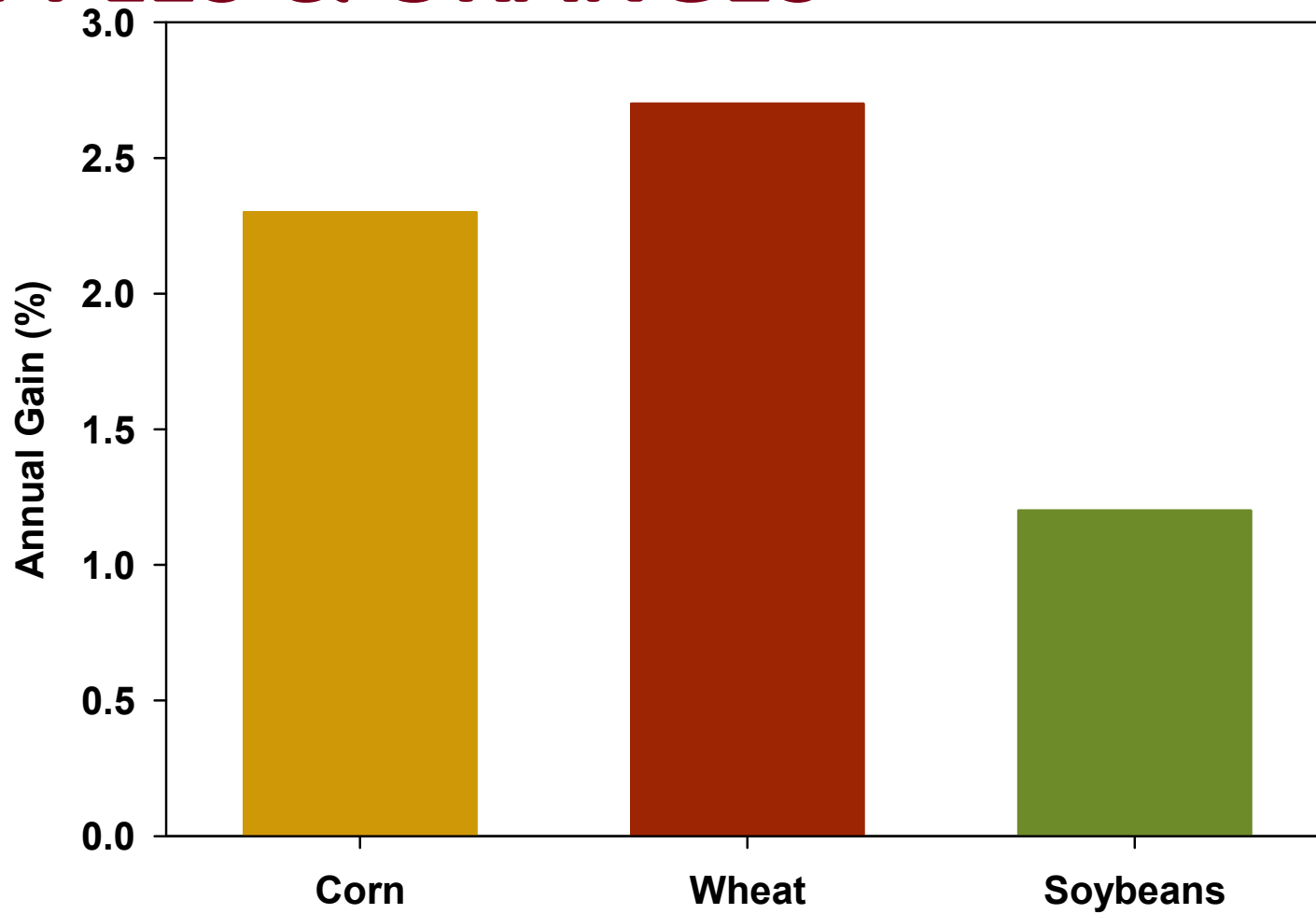


# PICKS

VARIETY	PLUSES	MINUSES
Bolles	GP	TWT
HRS 3419	YLD	GP, BLS
HRS 3530	YLD/Balanced	
Lang-MN	Balanced, FHB	
Linkert	Balanced, LD	
Shelly	YLD	GP
SY Ingmar	Balanced, BLS	
SY Valda	YLD, BLS	



# APPLES & ORANGES



# MN10201-4-A (MN97695-BYDV/SABIN)

Entry	Grain yield (% of mean)								
	State			North			South		
	2017	2 Yr	3 Yr	2017	2-Year	3-Year	2017	2-Year	3-Year
Bolles	95	96	96	97	97	96	93	95	95
Lang-MN	98	99	100	96	97	99	101	102	101
Linkert	97	96	96	95	95	96	99	97	97
<b>MN10201-4-A</b>	104	102	102	103	101	100	104	104	104
Prosper	108	105	103	111	108	106	105	101	101
Shelly	107	108	106	109	108	106	105	107	107
SY-Valda	111	111	109	112	112	110	110	110	109
TCG-Spitfire	106	104		105	105		107	103	
WB-Mayville	99	99	98	94	95	95	106	103	102

	Heading	Height	Straw	Test Wt	Protein	Baking		Leaf	Stripe	Bact.	
	d	in.	Str.	(lbs/bu)	(%)	Quality	PHS	Rust	Rust	Leaf Str.	Scab
			1-9	2 yr	2 yr	1-9	1-9	1-9	1-9	1-9	1-9
Bolles	63.9	32.9	4	59.3	15.6	1	1	1	1	5	4
Lang-MN	61.3	31.7	5	60.9	14.7	3	1	1	1	3	3
Linkert	60.8	29.4	2	60.2	15.1	1	2	3	1	4	5
<b>MN10201-4-A</b>	61.7	30.6	3	60.1	13.7	4	1	1	2	4	4
Prosper	62.8	33.3	6	59.9	13.3	5	2	5	5	5	5
Shelly	62.3	30.2	5	60.4	13.5	5	1	3	1	5	4
SY-Valda	61.1	30.9	4	60.0	13.8	6	3	1	2	3	4
TCG-Spitfire	64.3	32.1	3	59.0	13.7	-	3	5	-	-	5
WB-Mayville	60.2	28.4	3	60.1	14.7	3	3	3	3	6	7





# 'IT TAKES A VILLAGE'

## Dept. of Agronomy and Plant Genetics

Jim Anderson	Kalya Altendorf	Prabin Bajgain	Emily Conley
Jennifer Flor	Max Fraser	Katherine Frels	Brett Heim
Cyrus Kimani	Yahya Rauf	Susan Reynolds	Nate Stuart
Andressa Spuri Azarias		Jochum Wiersma	

## Dept. of Plant Pathology

Ruth Dill-Macky	Carol Ishimaru	Madeleine Smith	Brian Steffens
-----------------	----------------	-----------------	----------------

## Dept. of Food Science & Nutrition

George Annor

## USDA-ARS

Shiaoman Chao	Linda Dykes	Yue Jin	Jim Kolmer
Matt Rouse			

## Research & Outreach Centers

Matt Bickell	Robert Bouvette	Dave Grafstrom	Mark Hanson
Tom Hoverstad	Houston Lindell	Steve Quiring	Curt Reese
Donn Vellekson	Joe Wodarek		



# QUESTION?

If we knew what it was we were doing, it would not be called research, would it?

Albert Einstein

