

Small Grain Variety Update

Langdon REC - 2017

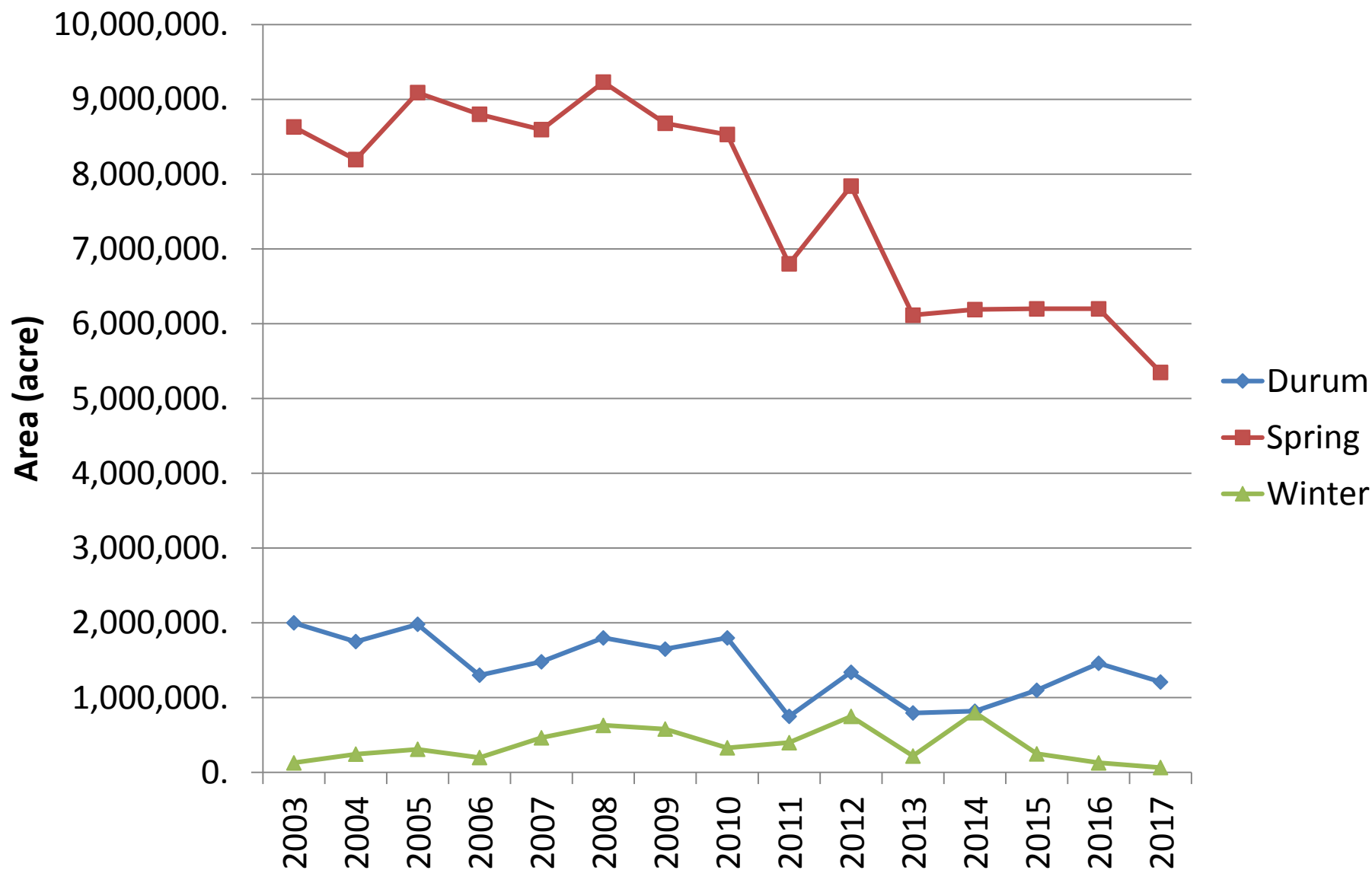
Bryan Hanson - Agronomist

Travis Hakanson - Research Specialist

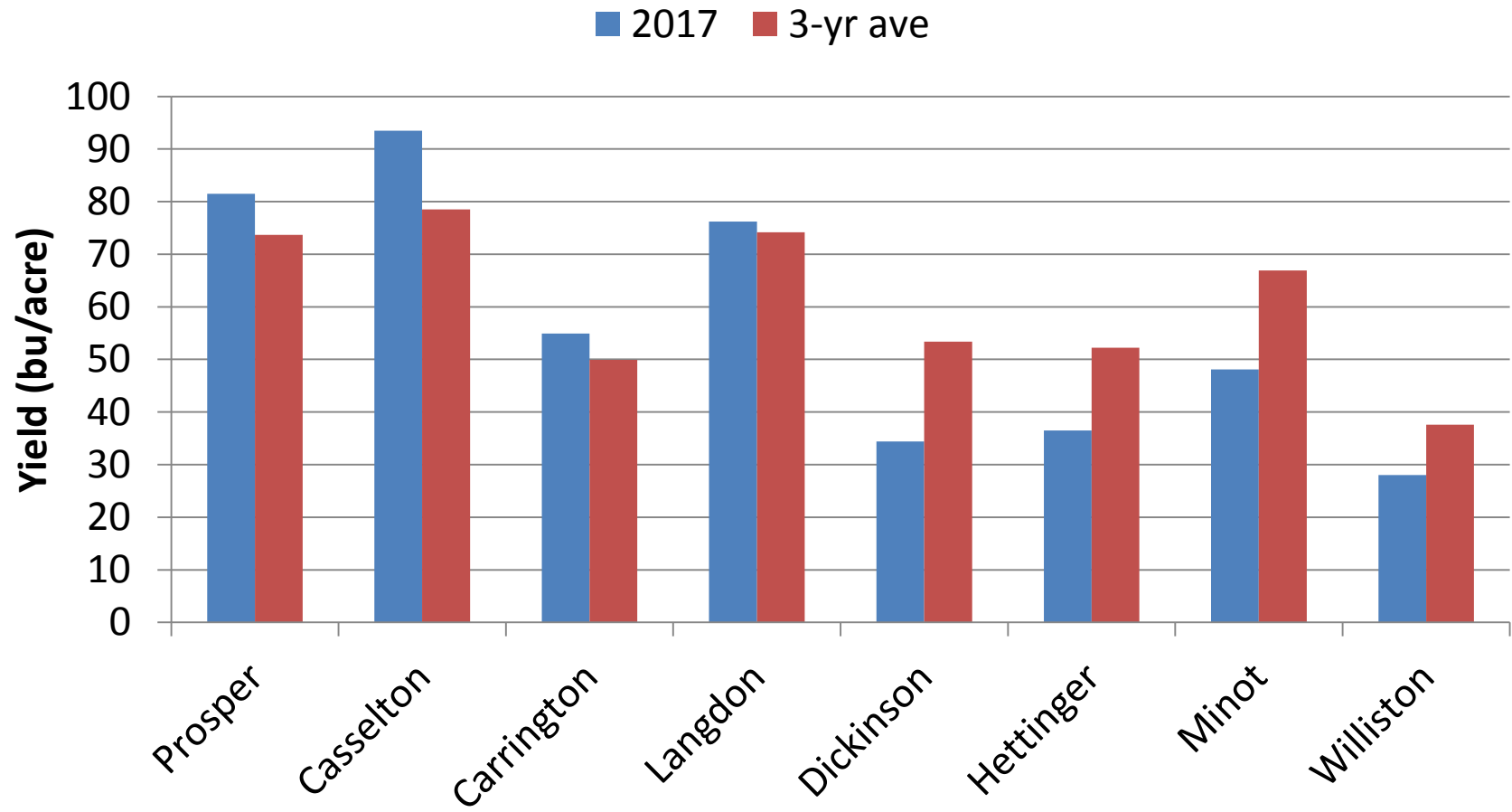
Lawrence Henry - Research Specialist



Trends in area planted in ND over the past 15 years for three classes of wheat.



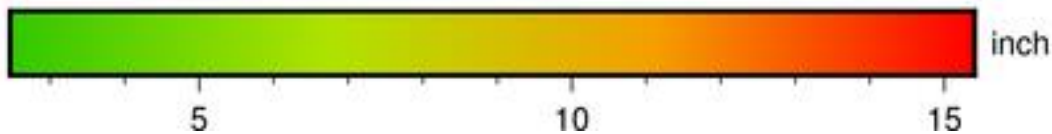
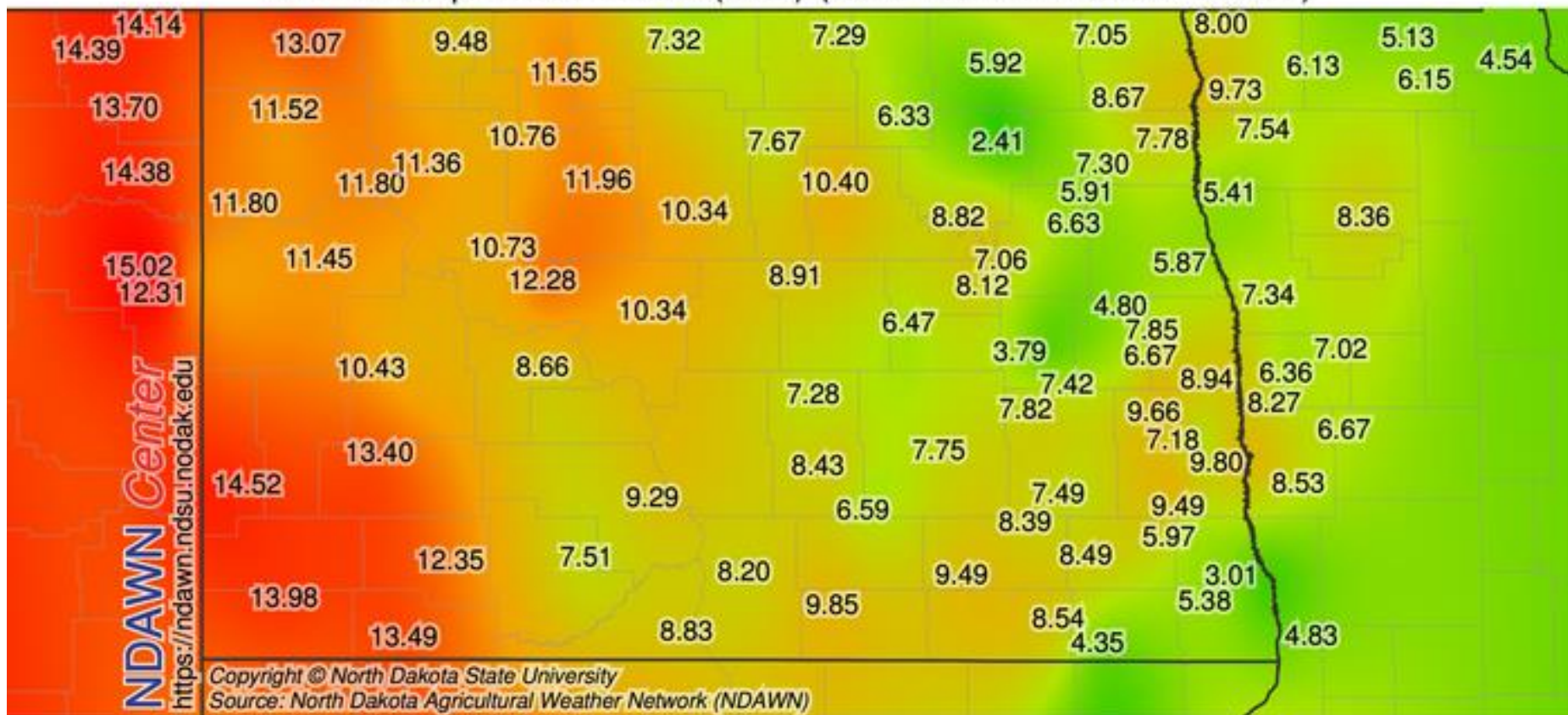
Average yields from spring wheat variety trials in various parts of the state.



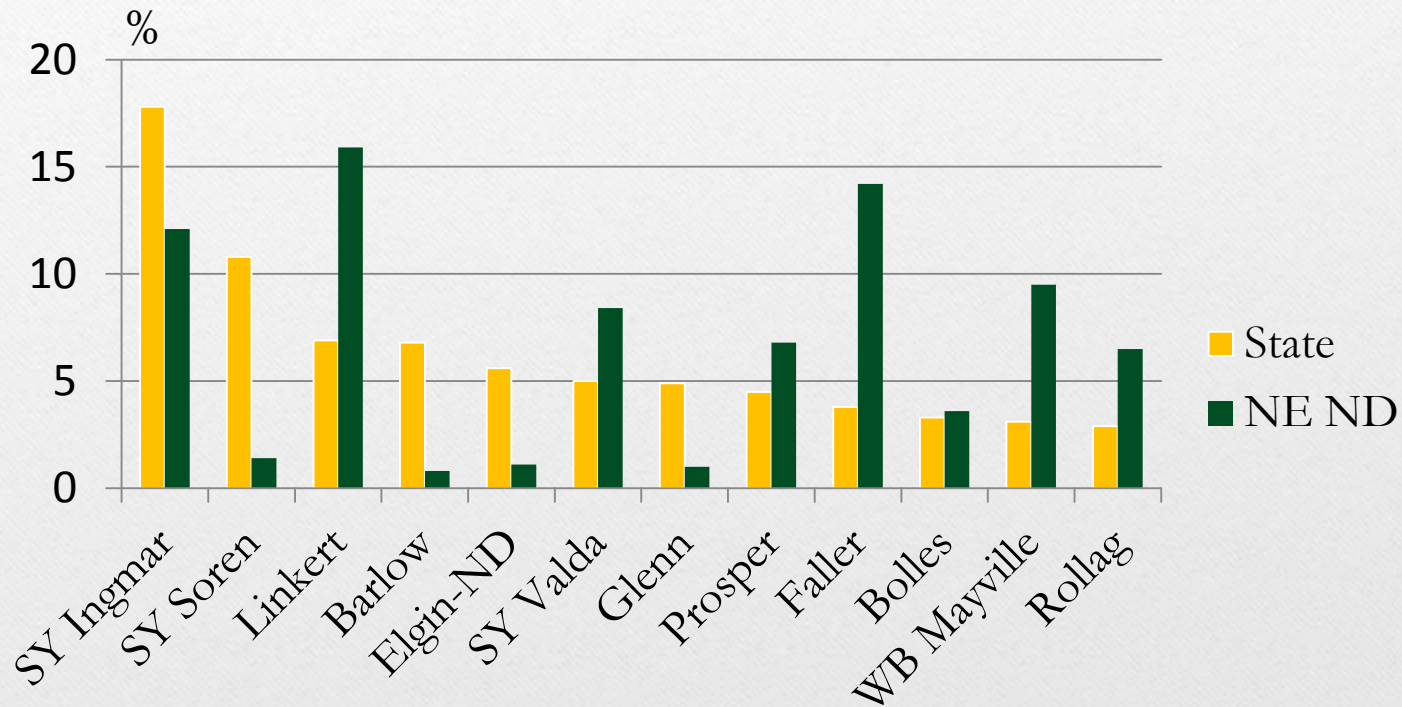
East and west locations varied considerably in their yield

- Drought throughout most of the growing season was the main factor impacting yield
- Lower than average night temperatures may have helped reduce some of the impact of moisture stress
- Very little disease pressure (stripe rust on winter wheat at Langdon the most notable exception)
- Protein percent tended to be high but in not all “drought” locations

Wheat Crop Water Deficit (inch) (2017-05-01 – 2017-08-31)



HRSW variety acres in 2017



Releases in 2016

Variety	Origin
Boost	SD
Surpass	SD
LCS Anchor	Limagrain
Shelly	MN
HRS 3616	Croplan
HRS 3100	Croplan

Releases in 2017

Variety	Origin
Ambush, Caliber	DynaGro
Lang-MN	MN
LCS Rebel, LCS Trigger	Limagrain
ND-VitPro	NDSU
TCG-Climax	21 st Genetics
WB9479, WB9590, WB9719	WestBred
MS Camaro	Meridian

Varieties

NDSU

Glenn
Barlow
Faller
Prosper
Elgin-ND
ND VitPro

MN

Rollag
Linkert
Bolles
Shelly
Lang-MN



Varieties

SD

Syngenta/AgriPro

Prevail
Surpass
Boost

SY Soren
SY Rowyn
SY Ingmar
SY Valda



Varieties

Limagrain

LCS Breakaway
LCS Nitro
LCS Prime
LCS Anchor
LCS Trigger
LCS Rebel

Croplan

HRS 3419
HRS 3504
HRS 3530
HRS 3616
HRS 3100

Varieties

Monsanto/Westbred

WB Mayville

WB 9653

WB 9479

WB 9590

WB 9719



Meridian

MS Chevelle

MS Camaro

DynaGro

Ambush

Caliber

21st Century Genetics

TCG-Cornerstone

TCG-Spitfire

TCG-Climax

Leaf rust reaction

HRS 3504	1
LCS Trigger	1
MS Camaro	1
WB9479	1
Caliber	2
HRS 3530	2
Lang-MN	2
LCS Anchor	2
LCS Nitro	2
SY Soren	2
SY Valda	2
Bolles	3
HRS 3419	3
LCS Breakaway	3
Linkert	3
Prevail	3
SY Ingmar	3
SY Rowyn	3
WB9590	3
WB9653	3
WB-Mayville	3

Ambush	4
Boost	4
HRS 3100	4
LCS Prime	4
MS Chevelle	4
ND-VitPro	4
Rollag	4
Surpass	4
TCG-Cornerstone	4
WB9719	4
Ambush	4
Boost	4
HRS 3616	5
TCG-Spitfire	5
Barlow	6
Elgin-ND	6
Glenn	6
Prosper	6
Shelly	6
TCG-Climax	6
Faller	7
LCS Rebel	7

Leaf Rust



1=resistant and 9=very susceptible

Stripe rust reaction

Lang-MN	1	Bolles	5
Linkert	1	Caliber	5
Prevail	1	Elgin-ND	5
WB9479	1	HRS 3616	5
LCS Nitro	2	Shelly	5
LCS Trigger	2	HRS 3100	6
MS Camaro	2	HRS 3504	6
Rollag	2	LCS Breakaway	6
WB9719	2	LCS Prime	6
Boost	3	Surpass	6
MS Chevelle	3	SY Ingmar	6
ND-VitPro	3	TCG-Cornerstone	6
TCG-Climax	3	WB-Mayville	6
Ambush	4	SY Soren	7
Barlow	4	SY Valda	7
Glenn	4	Faller	8
HRS 3419	4	HRS 3530	8
LCS Anchor	4	Prosper	8
LCS Rebel	4	WB9590	8
SY Rowyn	4	WB9653	8
TCG-Spitfire	4		

1=resistant and 9=very susceptible

Stripe Rust



Scab Reaction

Glenn	3
Rollag	3
Boost	4
LCS Prime	4
LCS Rebel	4
LCS Trigger	4
ND-VitPro	4
SY Valda	4
Ambush	5
Barlow	5
Bolles	5
Elgin-ND	5
Faller	5
HRS 3419	5
HRS 3530	5
Lang-MN	5
LCS Breakaway	5
LCS Nitro	5
Linkert	5
MS Chevelle	5
Prevail	5
Prosper	5

Shelly	5
Surpass	5
SY Ingmar	5
SY Rowyn	5
SY Soren	5
HRS 3100	6
LCS Anchor	6
MS Camaro	6
TCG-Climax	6
TCG-Cornerstone	6
TCG-Spitfire	6
WB9479	6
WB9590	6
WB9653	6
WB9719	6
HRS 3504	7
HRS 3616	7
Caliber	8
WB-Mayville	8

FHB - Scab

- FHB was not a significant problem in 2017.



1=resistant and 9=very susceptible

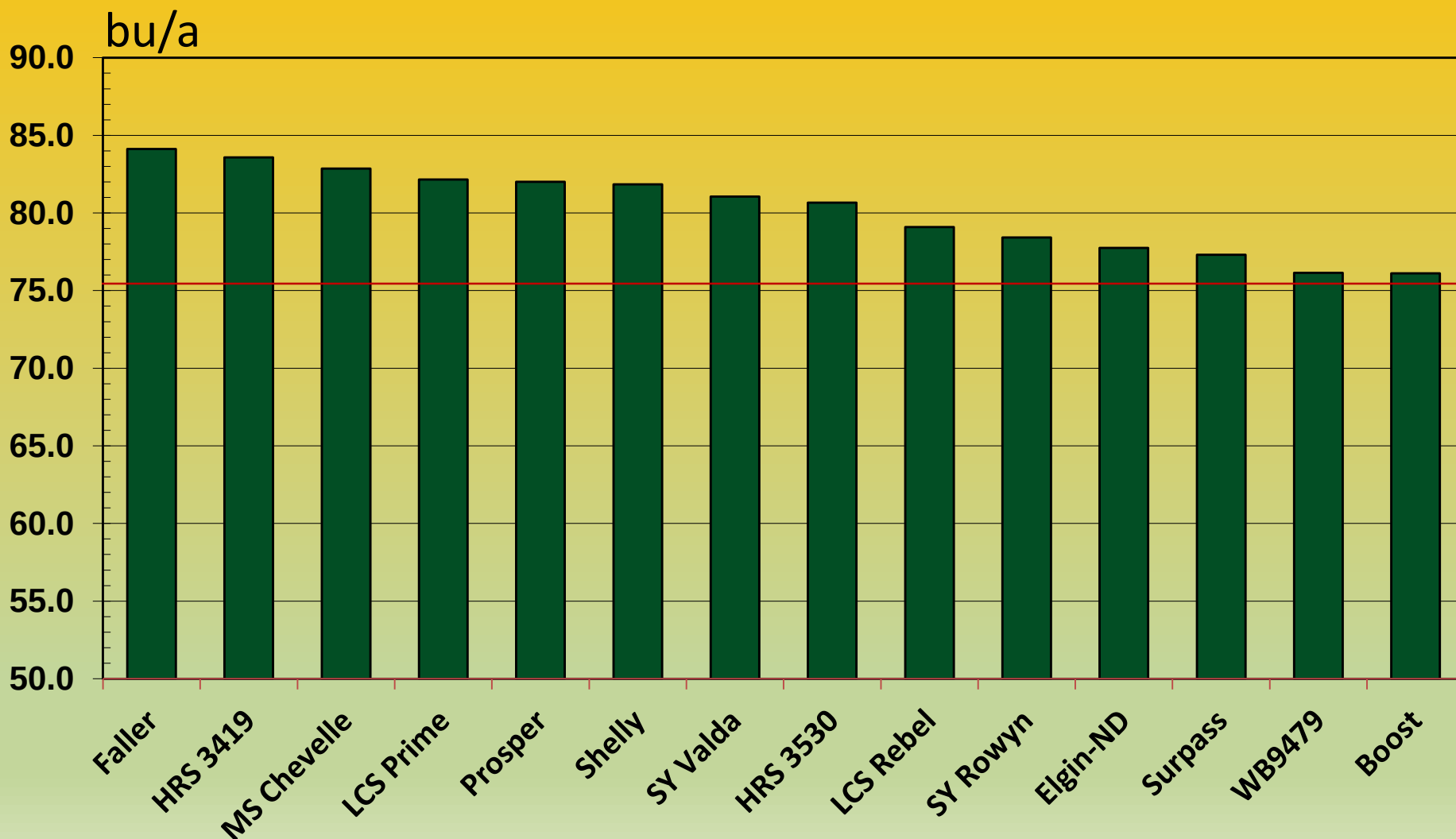
Yield and protein content of top yielding varieties at Langdon (Langdon, Cavalier, Park River, Pekin, Cando), 2017

Variety	Yield (bu/a)	Protein (%)
Faller	84.1	12.9
HRS 3419	83.6	12.9
MS Chevelle	82.9	12.8
LCS Prime	82.1	12.5
Prosper	82.0	13.0
Shelly	81.8	13.4
SY Valda	81.1	13.5
HRS 3530	80.7	13.9
LCS Rebel	79.1	13.8
SY Rowyn	78.4	13.4

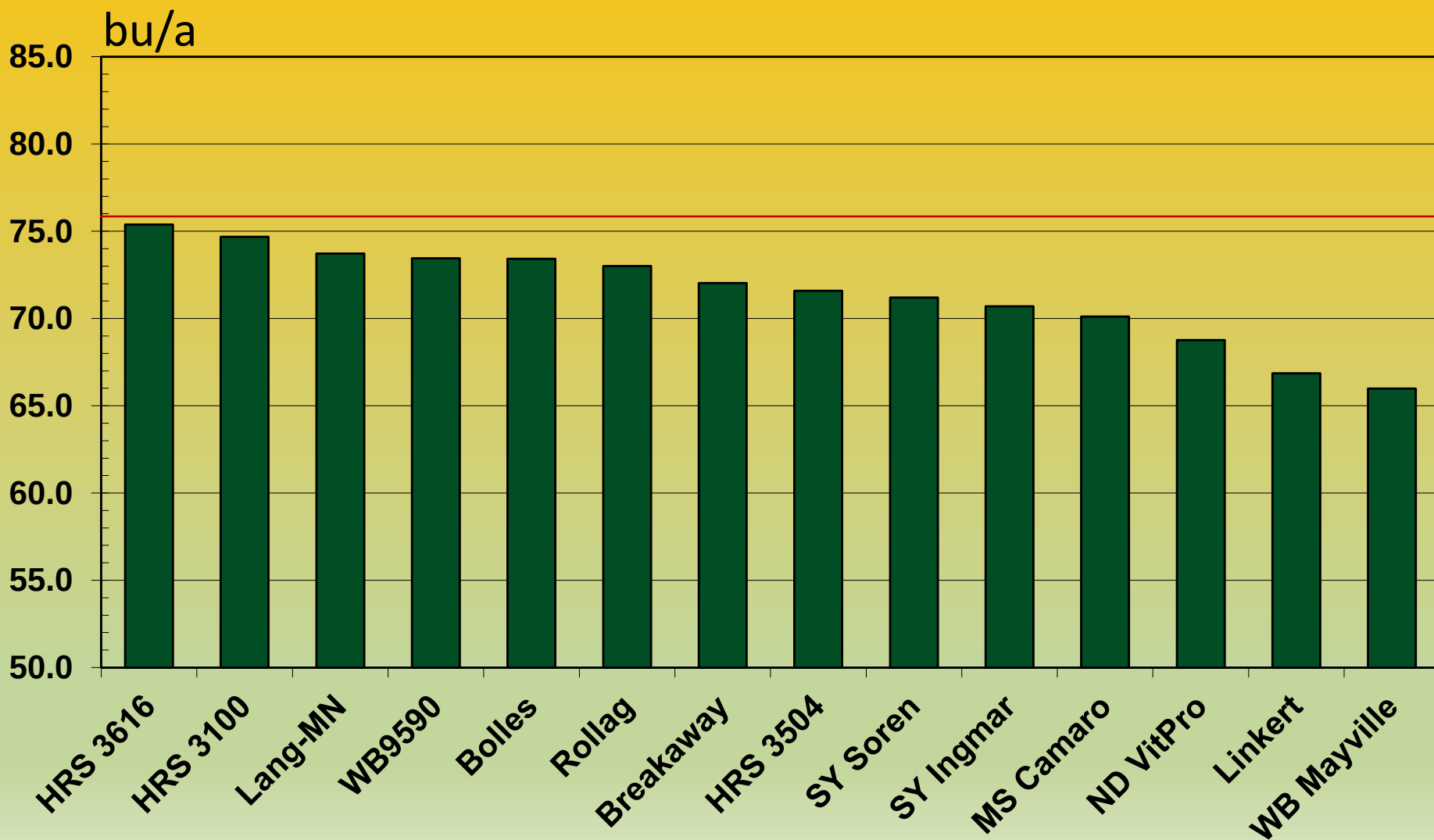
Protein and yield content of top protein varieties at Langdon (Langdon, Cavalier, Park River, Pekin, Cando), 2017

Variety	Yield (bu/a)	Protein (%)
Bolles	73.4	15.3
Lang-MN	73.7	14.9
HRS 3616	75.4	14.9
Linkert	66.9	14.8
Rollag	73.0	14.7
WB9479	76.1	14.7
ND VitPro	68.8	14.6
SY Ingmar	70.7	14.5
WB Mayville	66.0	14.4
SY Soren	71.2	14.3
WB9590	73.5	14.2

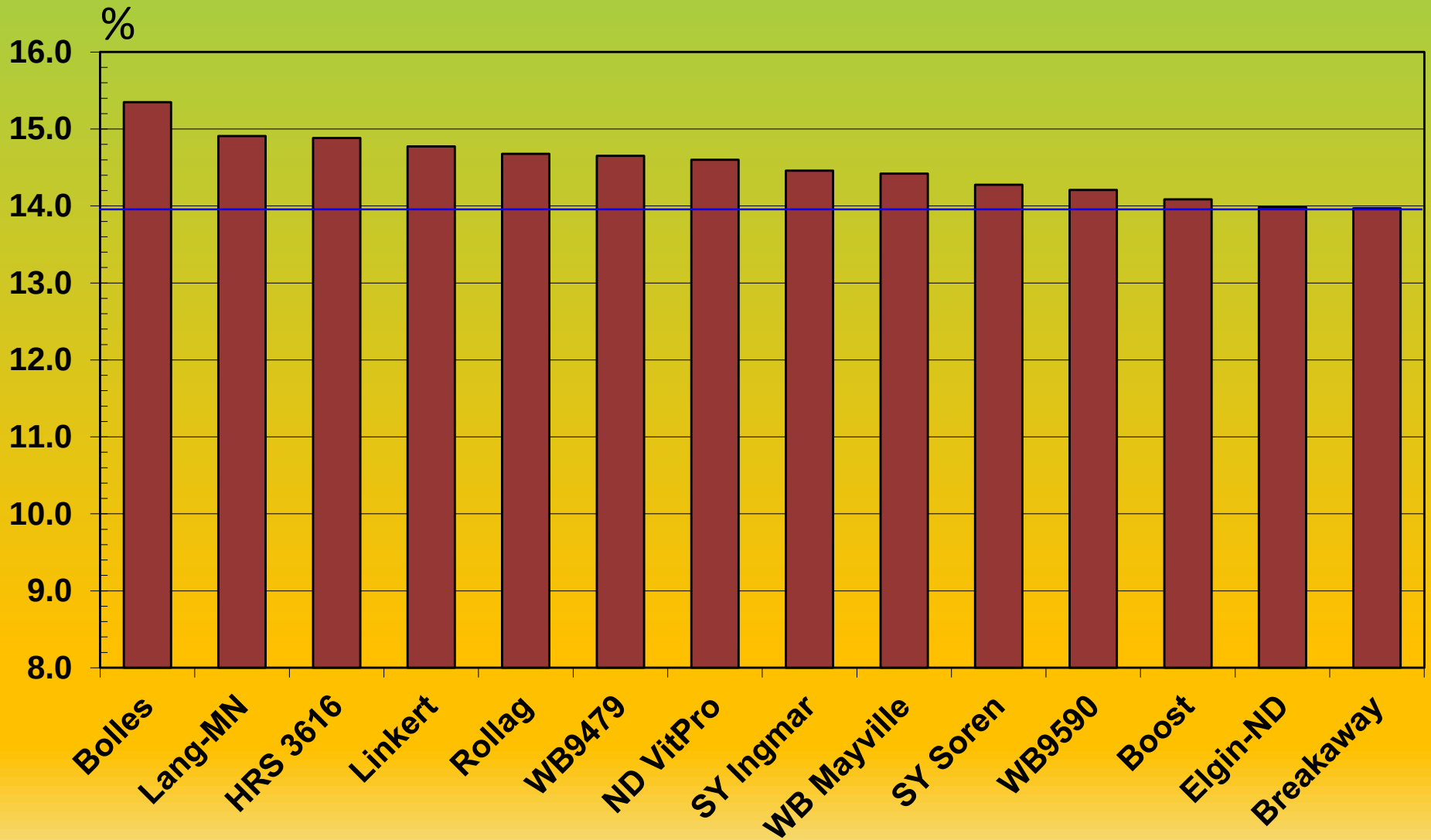
2017 HRSW 5-site Yield



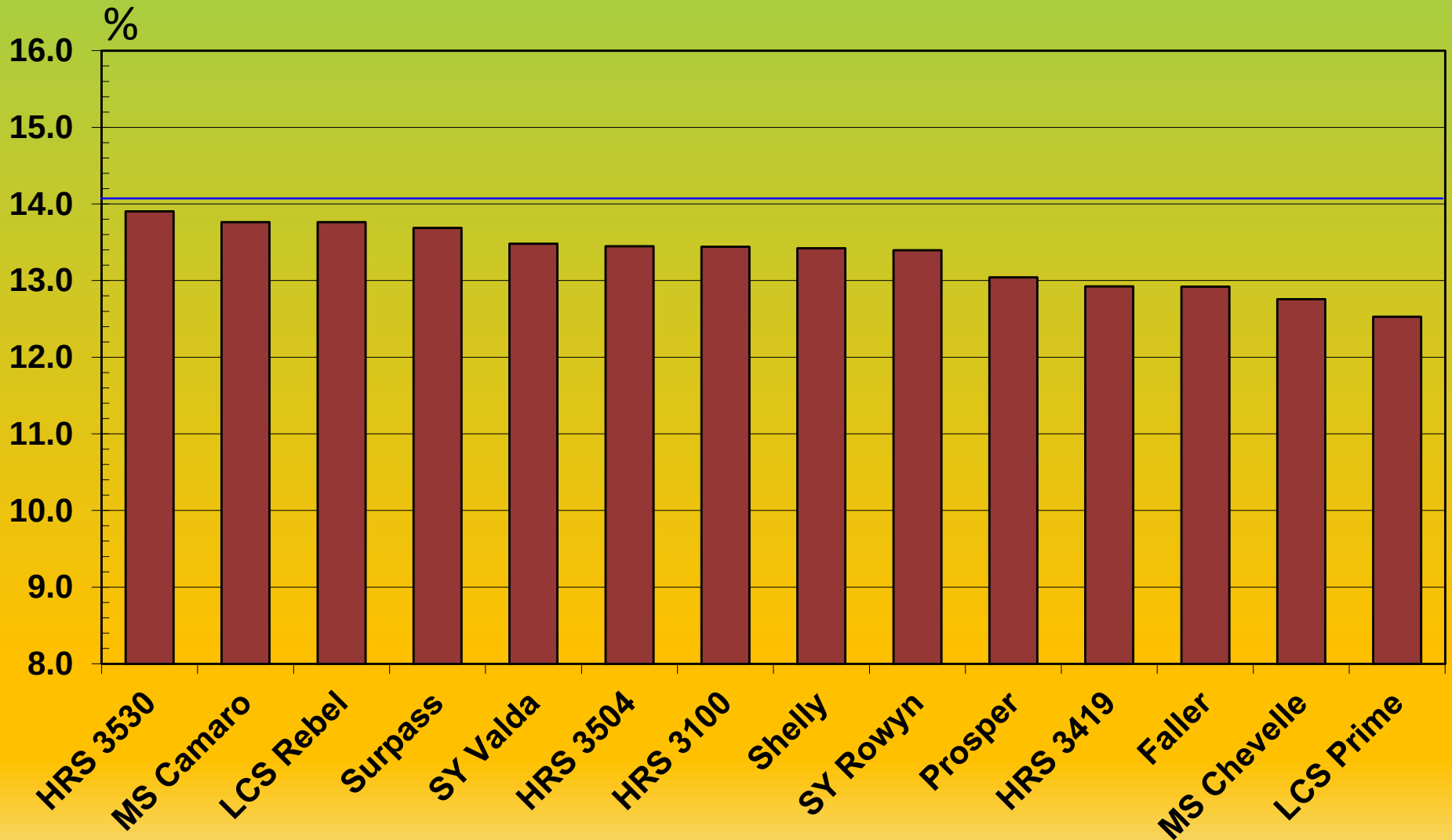
2017 HRSW 5-site Yield



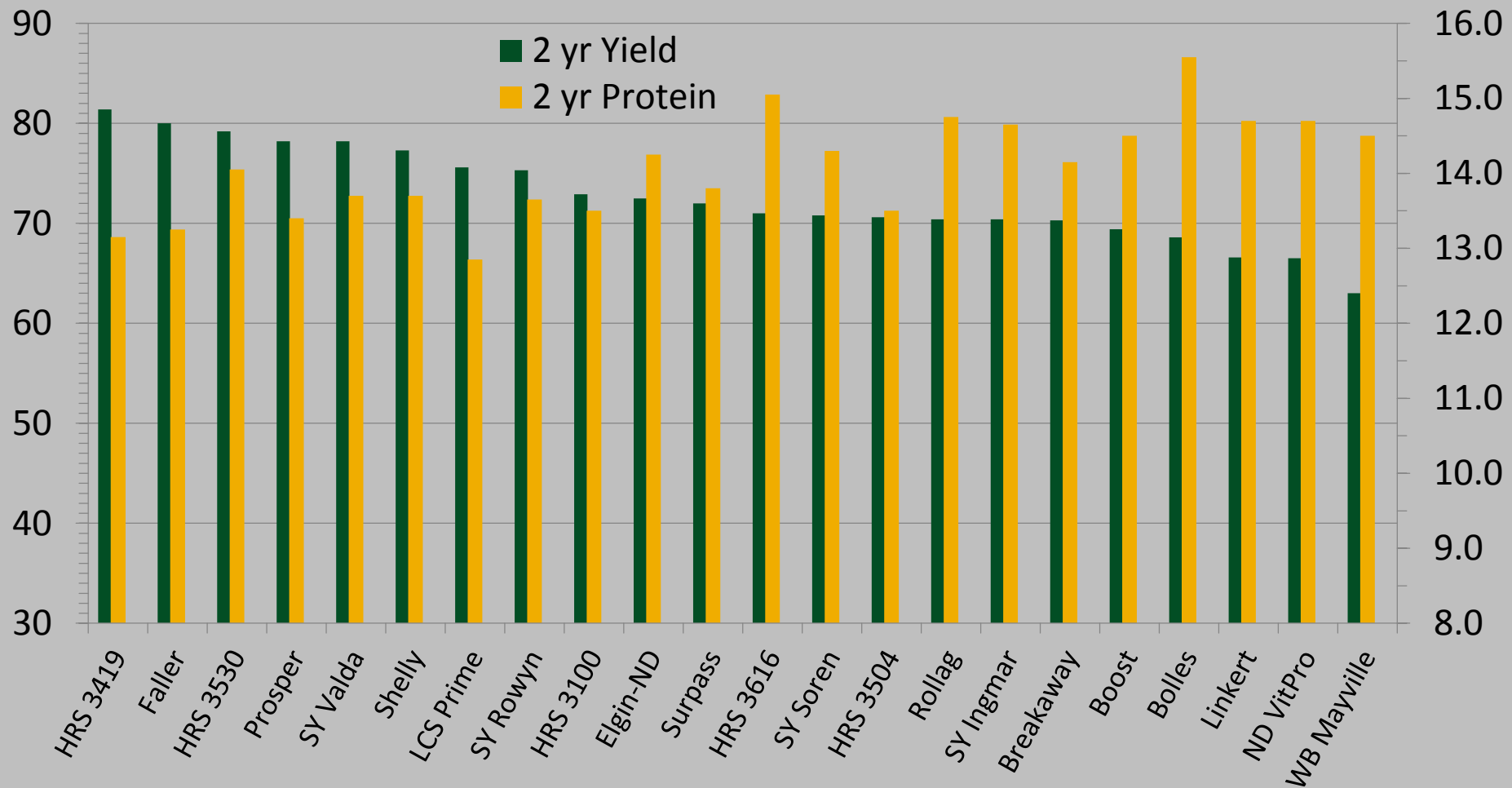
2017 HRSW 5-site Protein



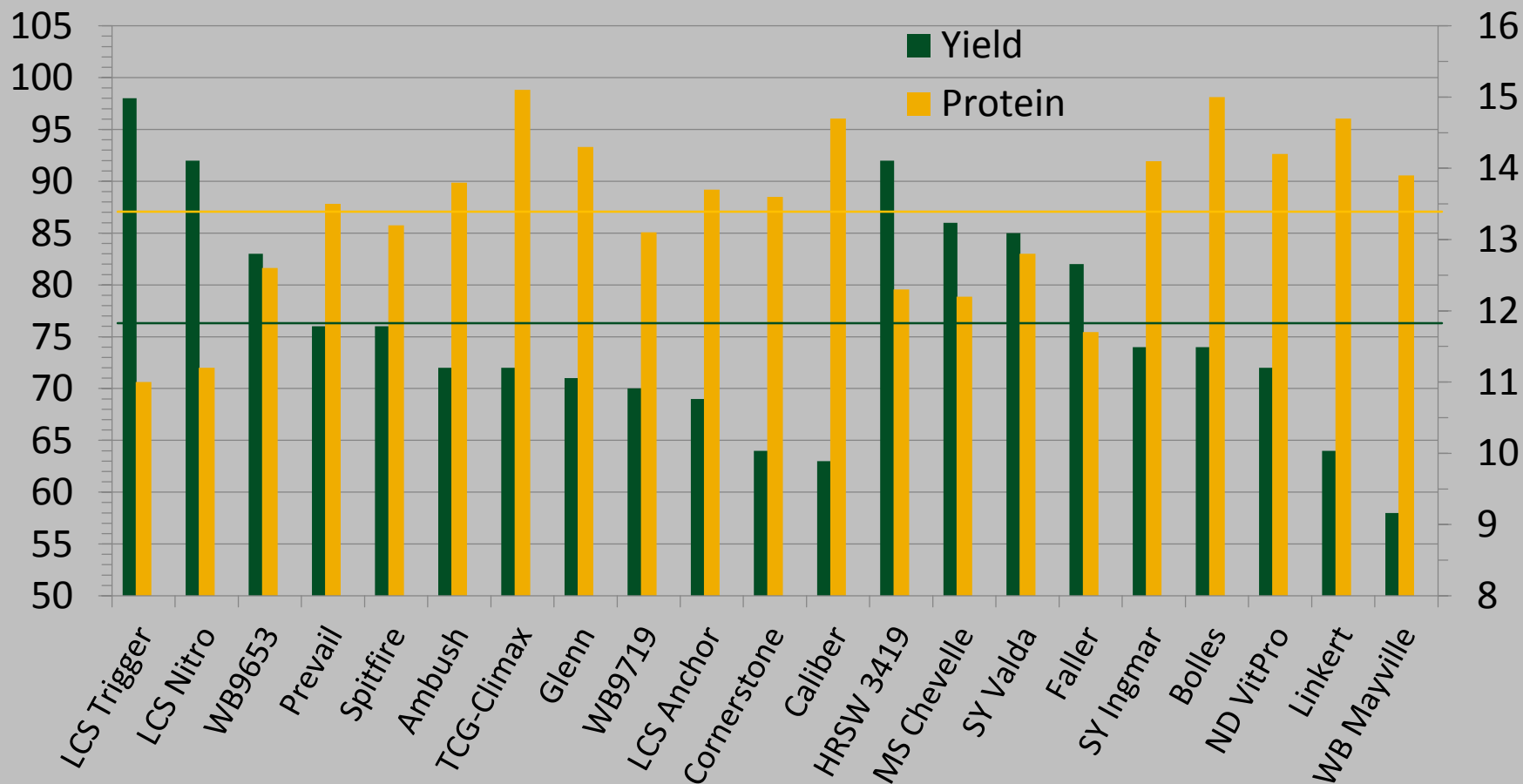
2017 HRSW 5-site Protein



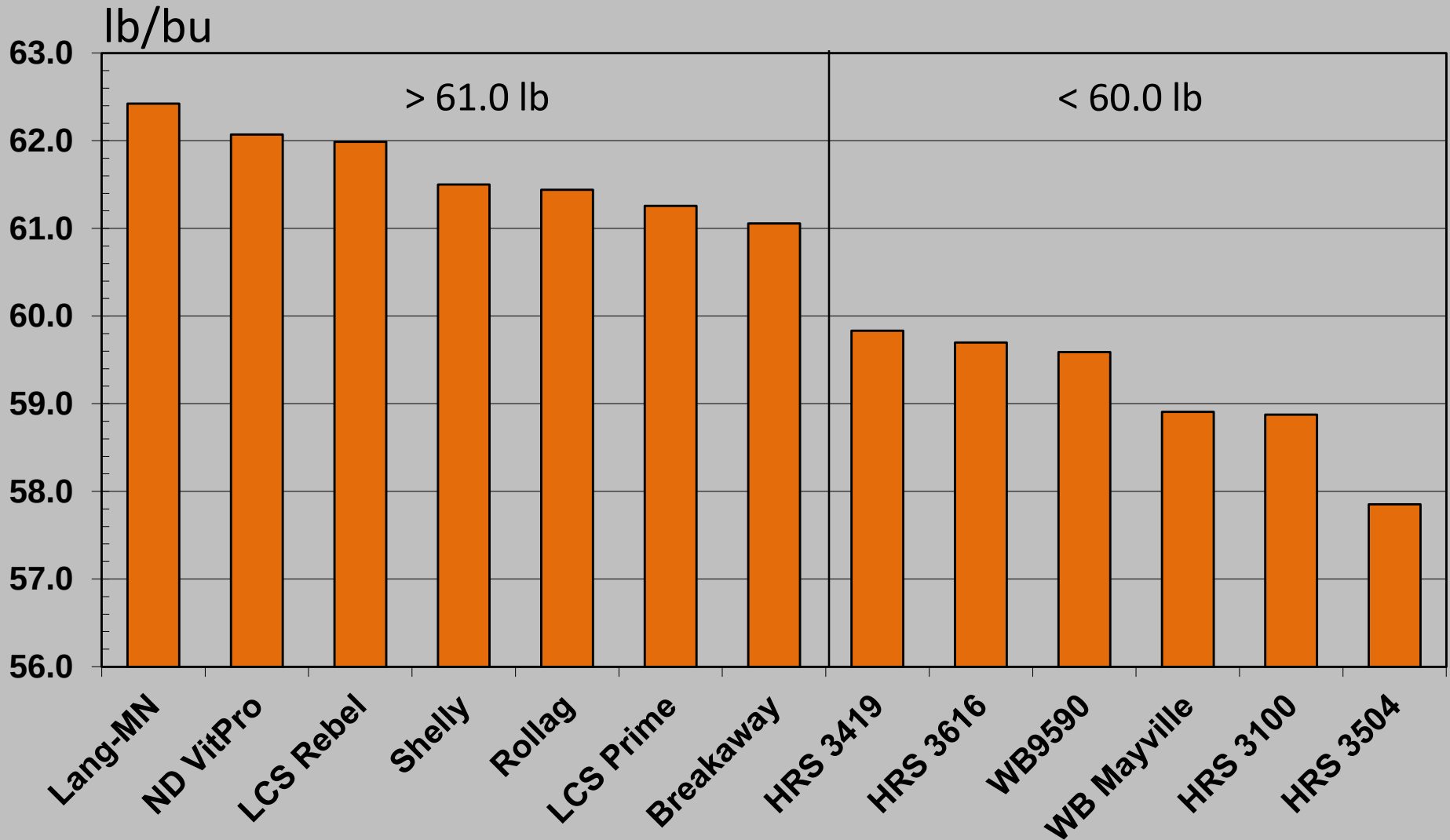
2yr (10 site) yield and protein averages for HRSW varieties at Langdon and off-station, 2016-2017.



Comparative yield of selected HRSW varieties at Langdon, 2017



2017 HRSW 5-site Test Weight



Days to Head - Langdon 2017

54-56	57	58	59	60	61-63
Surpass	WB Mayville	Elgin-ND	Faller	LCS Nitro	Bolles
Glenn	MS Chevelle	Prosper	SY Ingmar	Boost	HRS 3419
Barlow	LCS Anchor	Rollag	WB9653	HRS 3530	LCS Trigger
Breakaway	ND VitPro	SY Soren	Shelly	HRS 3504	TCG-Climax
Prevail	LCS Rebel	Linkert	Cornerstone	TCG-Spitfire	
LCS Prime	WB9479	SY Rowyn	WB9719	Lang-MN	
Ambush		SY Valda		Caliber	
WB9590		HRS 3100			
		HRS 3616			
		MS Camaro			

Plant Height (in) - Langdon 2017

30-32	33-34	35-36	37-38	39-40	41-43
Caliber	MS Camaro	LCS Breakaway	Bolles	Faller	Barlow
WB9590	WB9479	Rollag	HRS 3419	Prevail	Lang-MN
Linkert	SY Soren	SY Valda	MS Chevelle	HRS 3530	LCS Rebel
WB Mayville	SY Rowyn	HRS 3616	ND VitPro	LCS Trigger	Glenn
	SY Ingmar	Cornerstone	Prosper	Surpass	Elgin-ND
	WB9653	LCS Nitro	Boost		
	HRS 3504	Shelly	LCS Prime		
	LCS Anchor	Ambush	HRS 3100		
	TCG-Spitfire		TCG-Climax		
	WB9719				

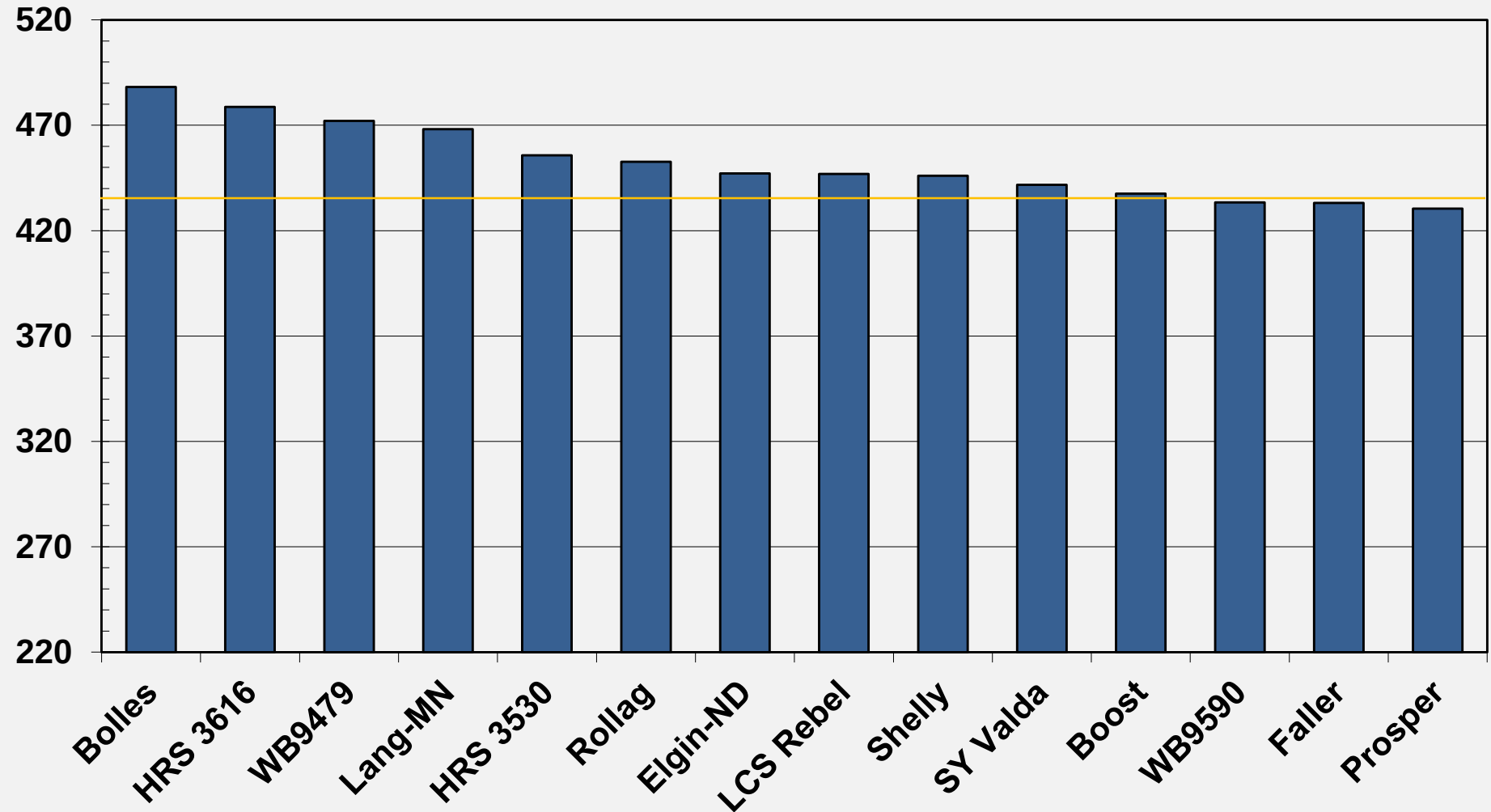
Straw Strength- Statewide

1=strongest, 9=weakest

2	3	4	5	6
Caliber	HRS 3504	Bolles	Ambush	Barlow
HRS 3419	Lang-MN	Glenn	Boost	
Linkert	LCS Anchor	HRS 3100	Elgin-ND	
TCG-Climax	ND-VitPro	HRS 3530	Faller	
	Rollag	HRS 3616	LCS Breakaway	
	SY Ingmar	LCS Nitro	LCS Rebel	
	SY Soren	LCS Prime	LCS Trigger	
	WB-Mayville	Prevail	MS Camaro	
		SY Rowyn	MS Chevelle	
		SY Valda	Prosper	
		TCG-Cornerstone	Shelly	
		TCG-Spitfire	Surpass	
		WB9479		
		WB9653		

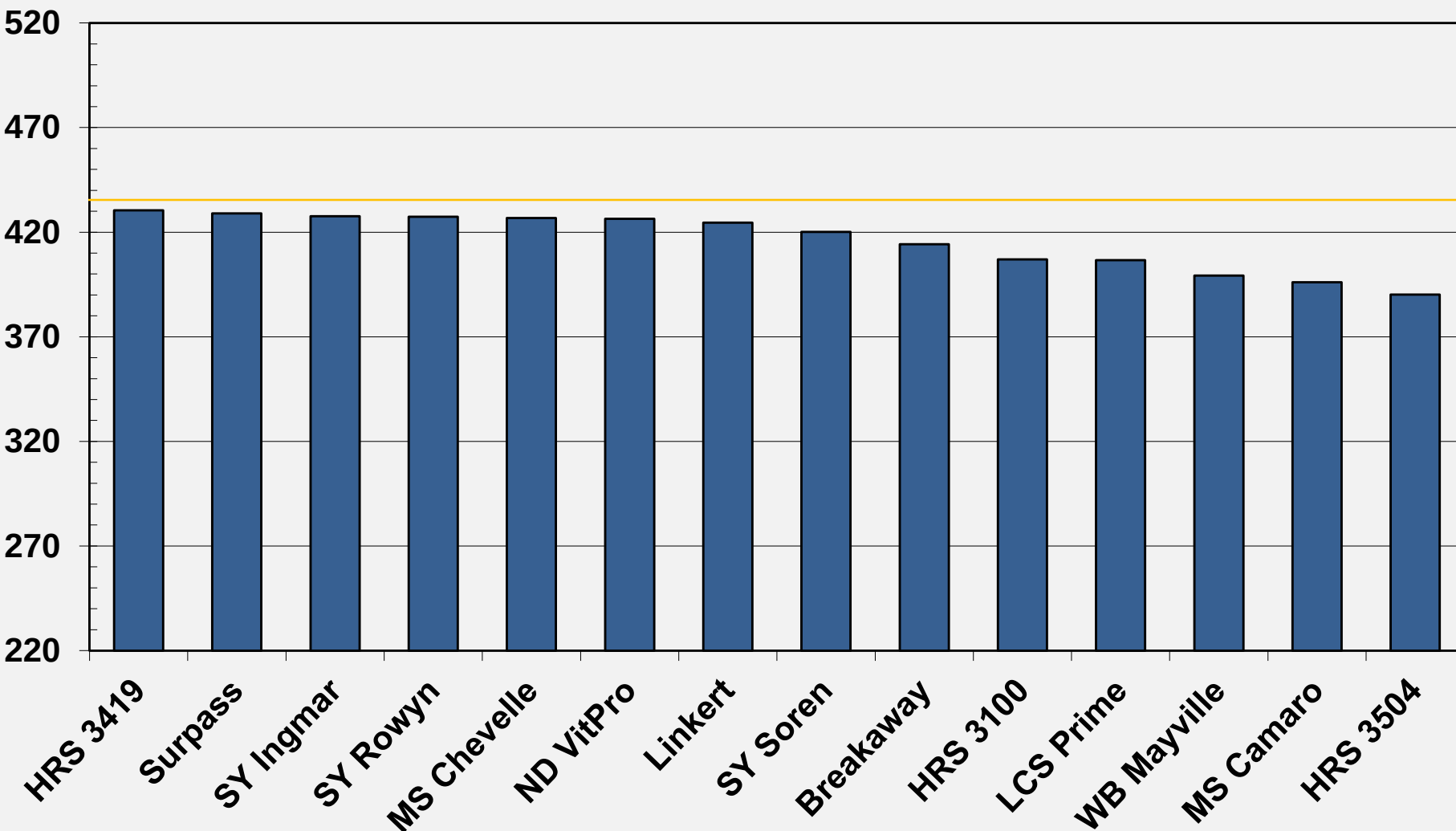
2017 HRSW 5-site - \$Return/a

Langdon Dec 8 quote. \$5.75/bu, protein discount/premium. \$0.10/fifth down to 11%. \$0.15/fifth up to 16%



2017 HRSW 5-site - \$Return/a

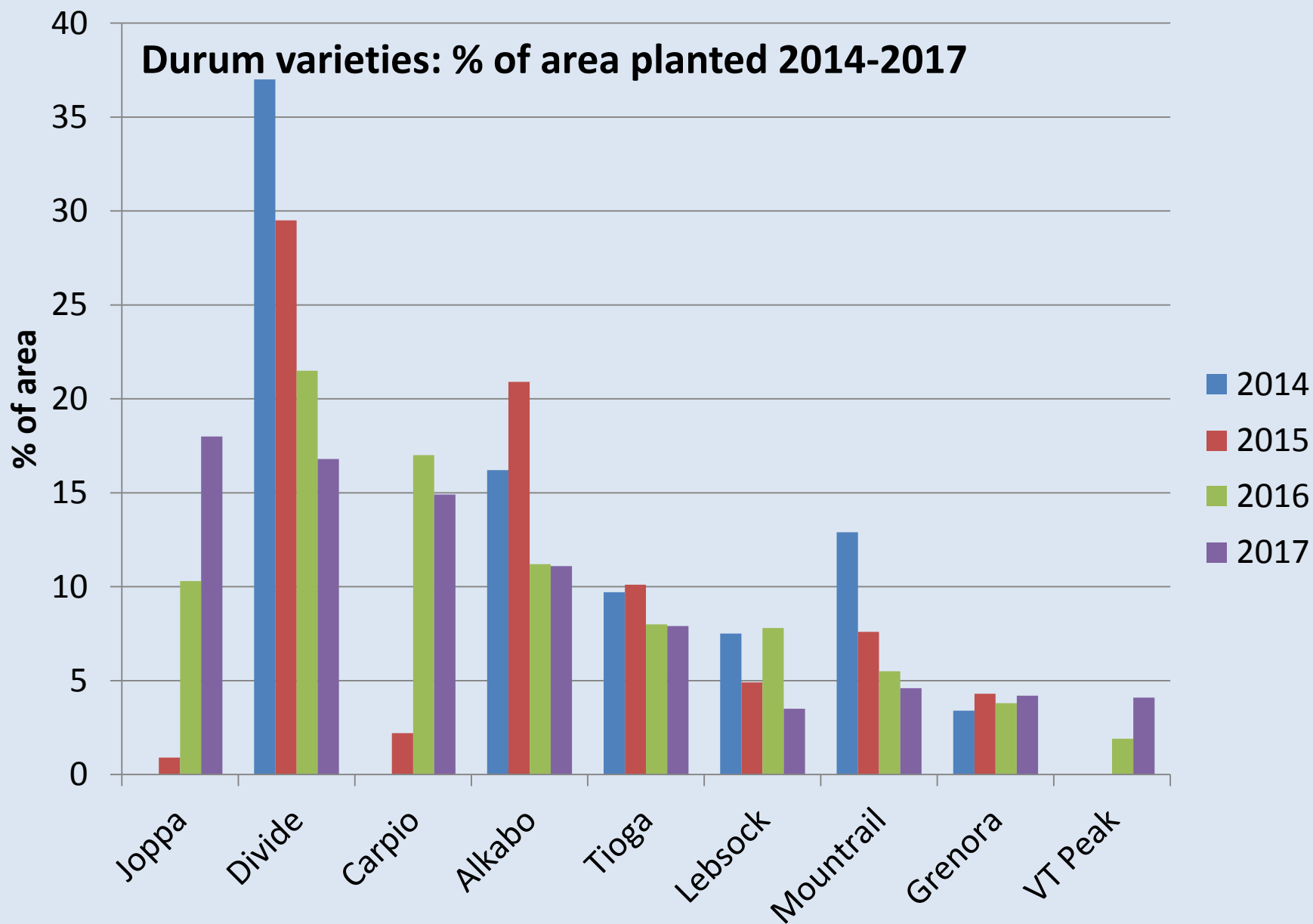
Langdon Dec 8 quote. \$5.75/bu, protein discount/premium. \$0.10/fifth down to 11%. \$0.15/fifth up to 16%



Durum



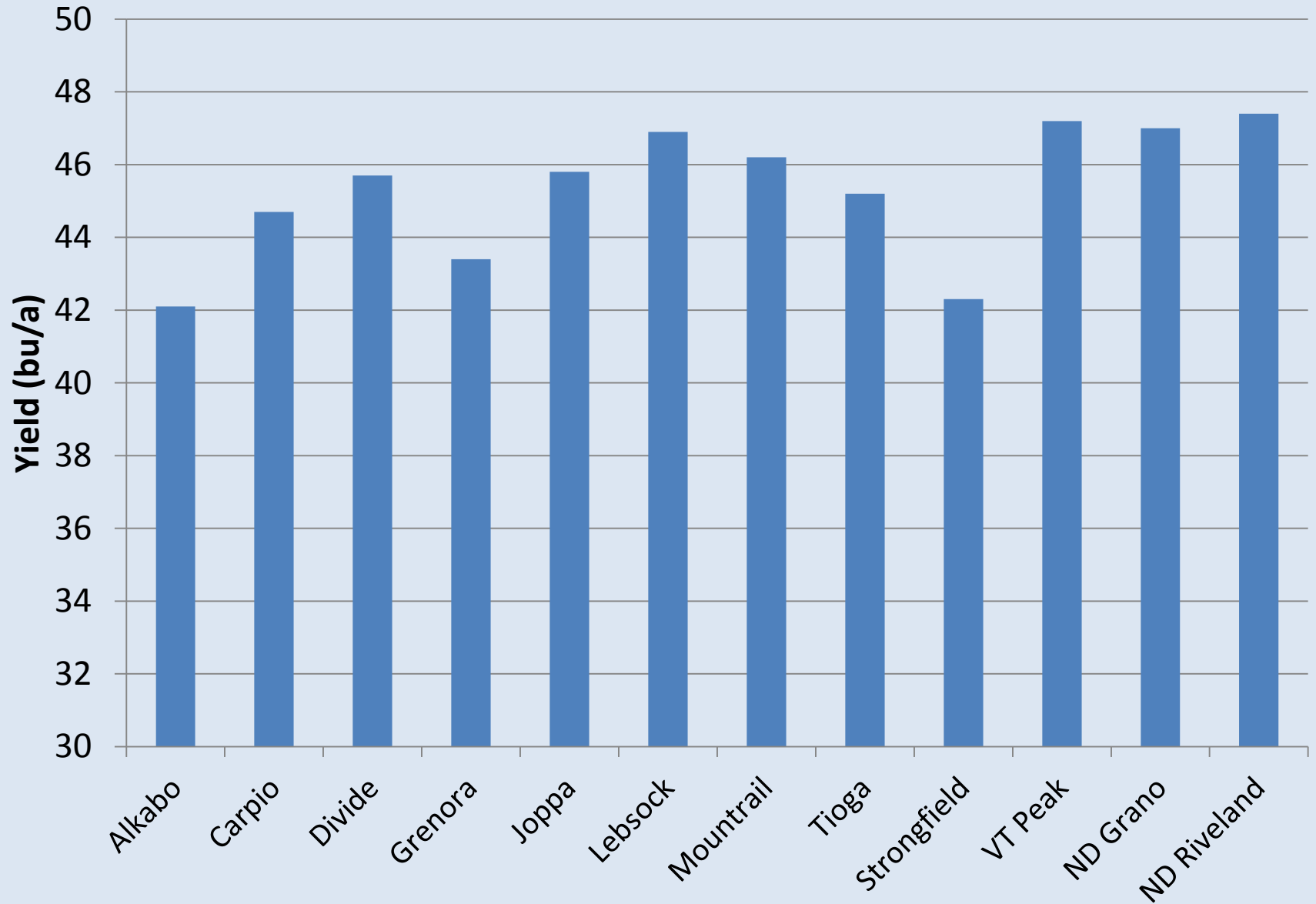
Durum varieties: % of area planted 2014-2017



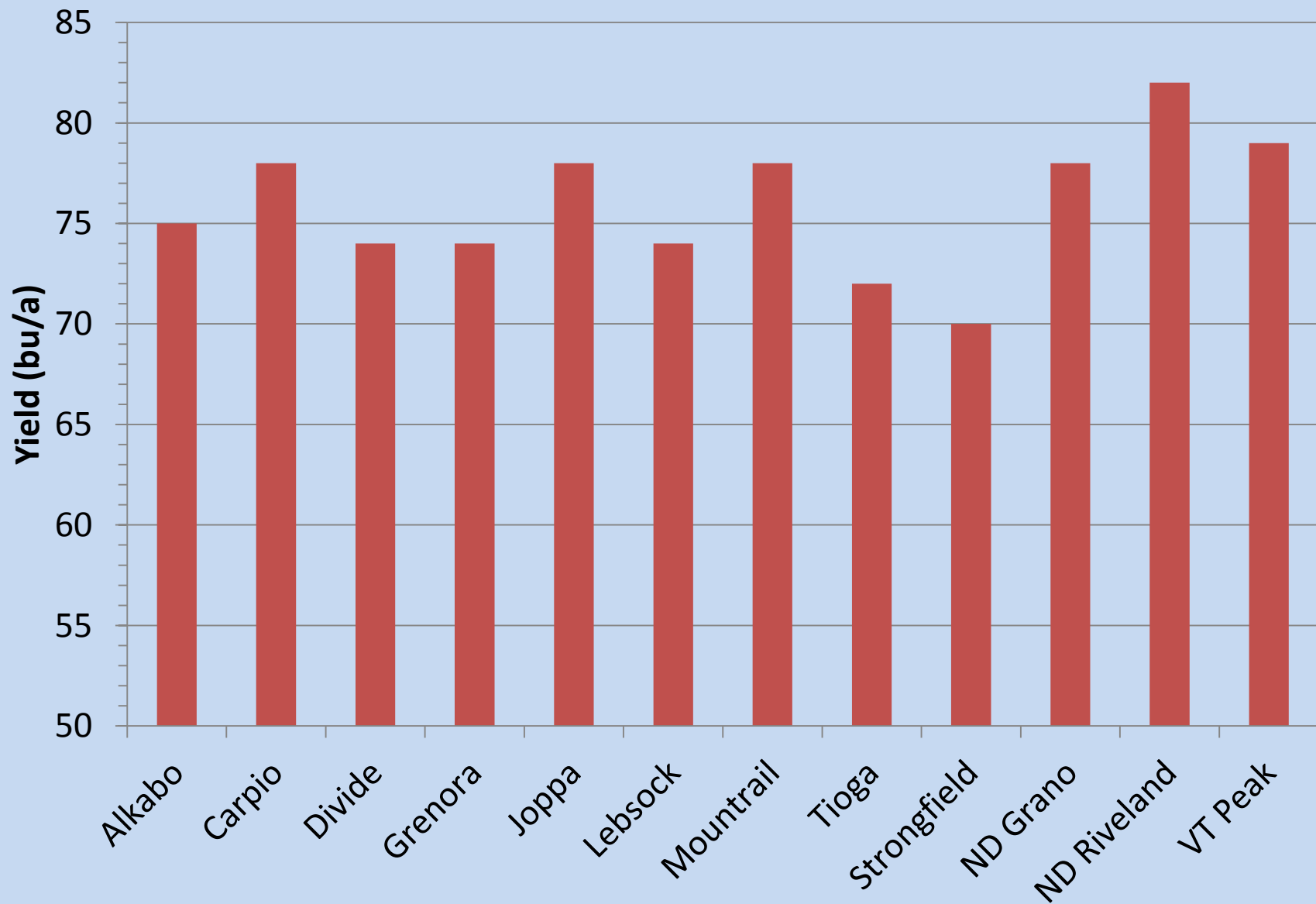
Two new durum varieties released in 2017

- ND Grano –
 - Medium tall,
 - Lodging=5
 - FHB=6
- ND Riveland –
 - Tall
 - Lodging = 4
 - FHB = 5
 - Large kernels
- Both have good yield and protein & low Cd accumulation gene

Yield of durum varieties, average of six locations, 2017



Yield of durum varieties, 5yrs- Langdon REC



Effect of fungicide (Prosaro™) at flowering and variety on yield and DON levels at harvest, Carrington, 2017.

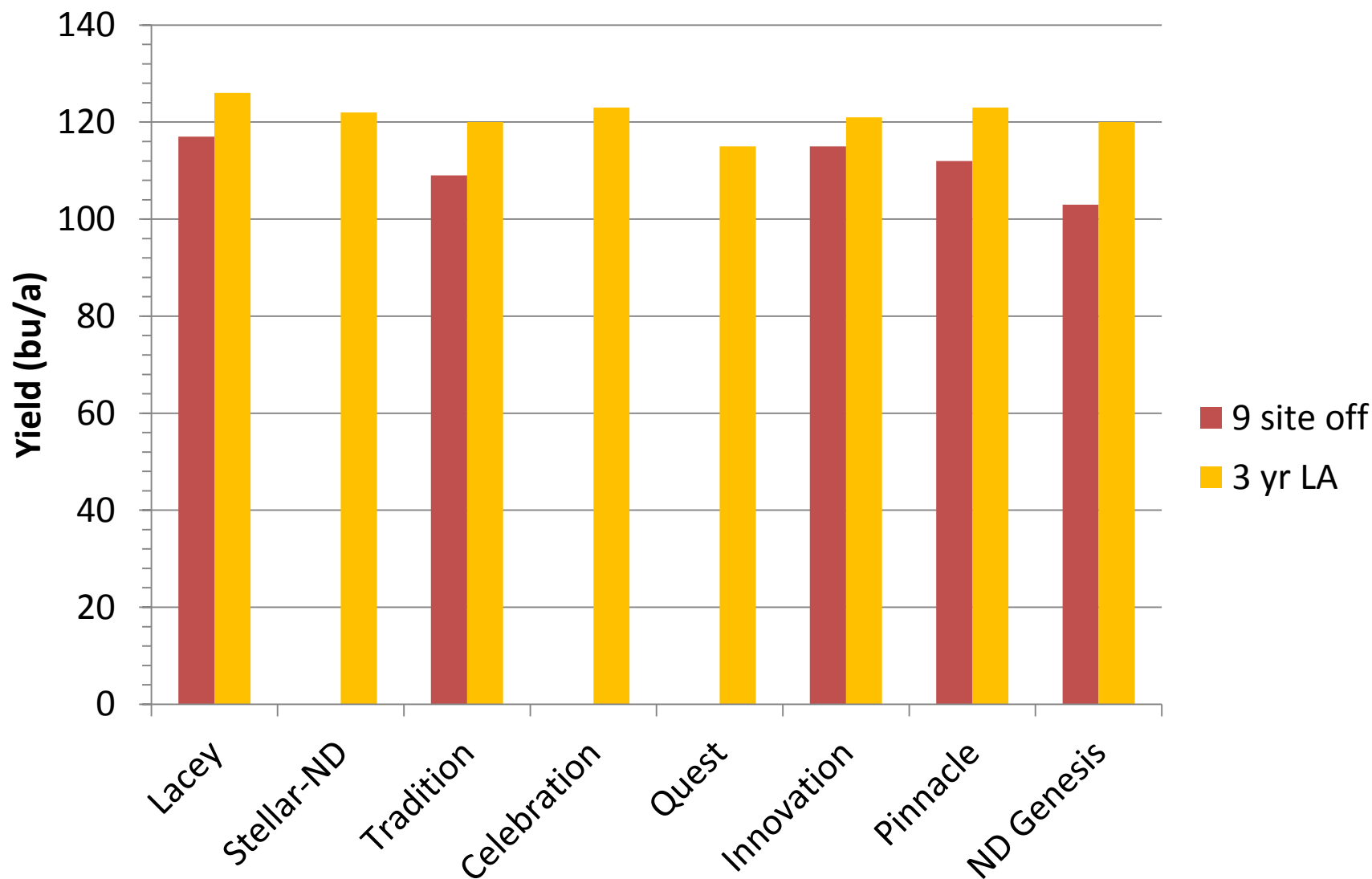
	Yield		DON	
	No Fung	Fung	No Fung	Fung
Carpio	53.2	72.7	6.7	0.8
ND Grano	47.6	78.5	7.8	0.7
ND Riveland	62.0	78.5	4.1	0.5
Divide	54.0	69.7	3.9	0.6
Joppa	51.2	73.7	6.3	0.6
Mountrail	47.5	65.0	6.2	0.9
Tioga	56.3	73.4	6.4	0.4



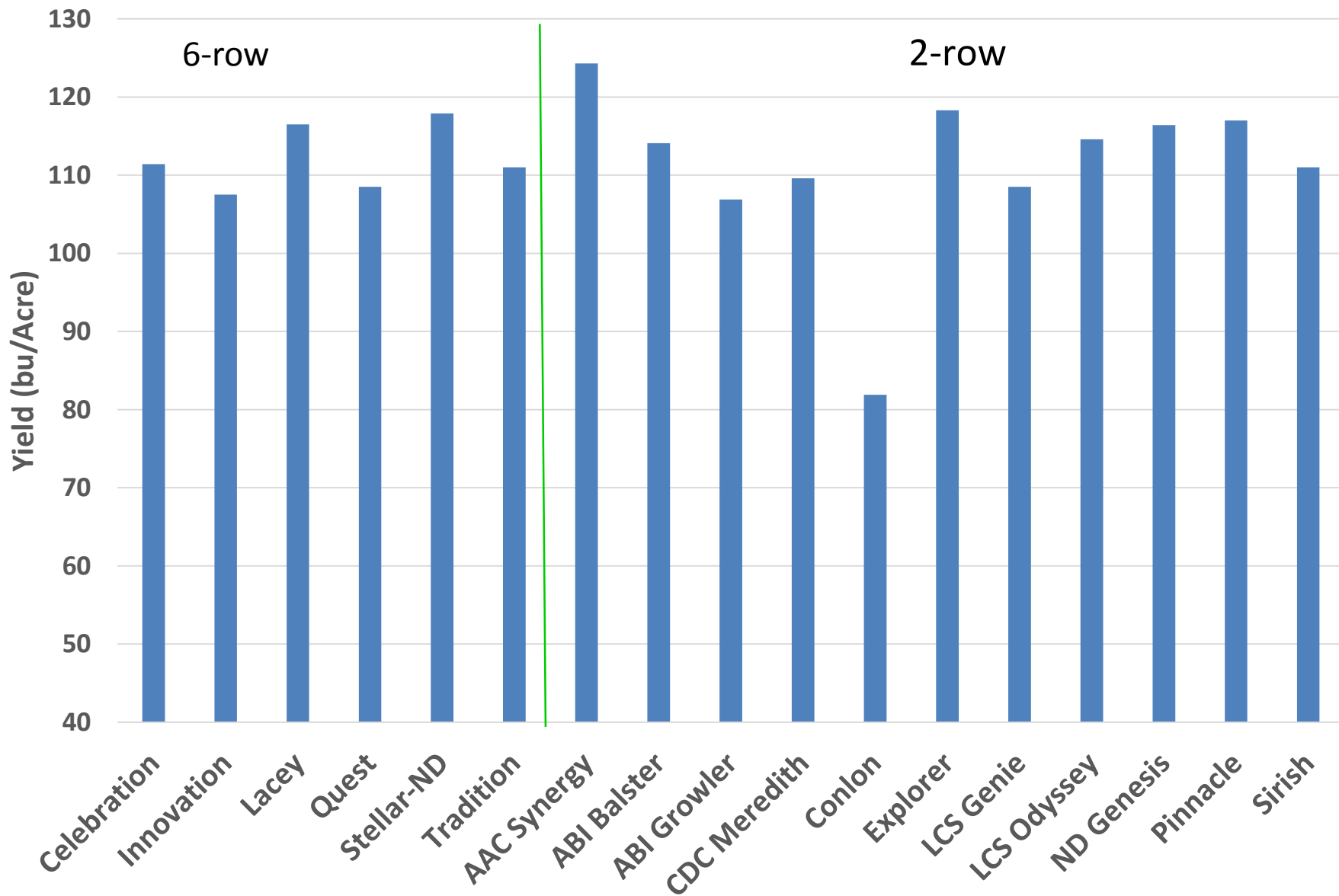
Barley



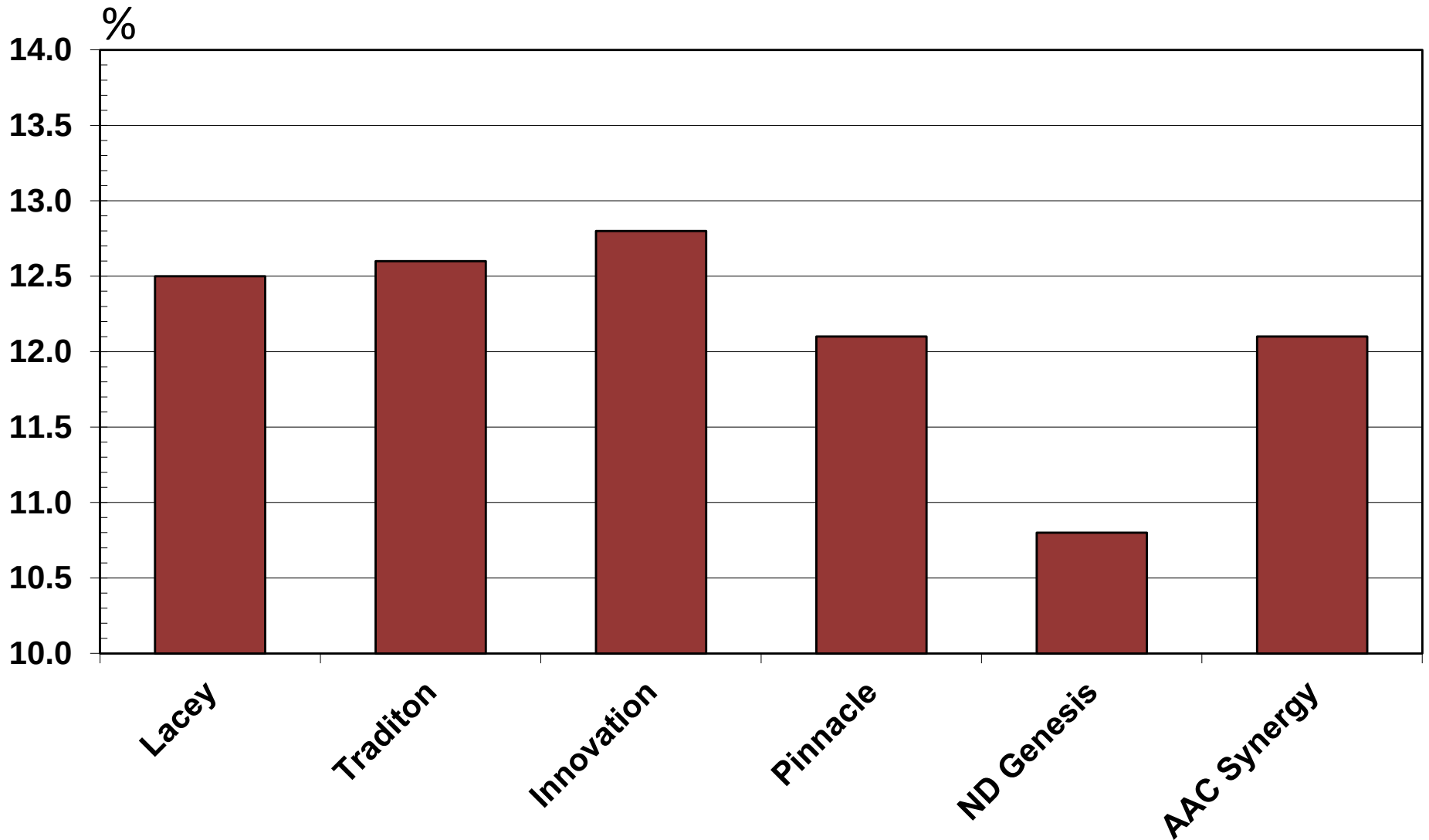
Yield of malting barley varieties 3yr average at Langdon & 3 yr off-station average



Yield of malting barley varieties in eastern ND, 2017



Protein – 2017 Langdon, 3 locations





Search: NDSU Langdon Research Extension Center
NDSU Variety Trials