

Small Grain Variety Performance 2007 Growing Season

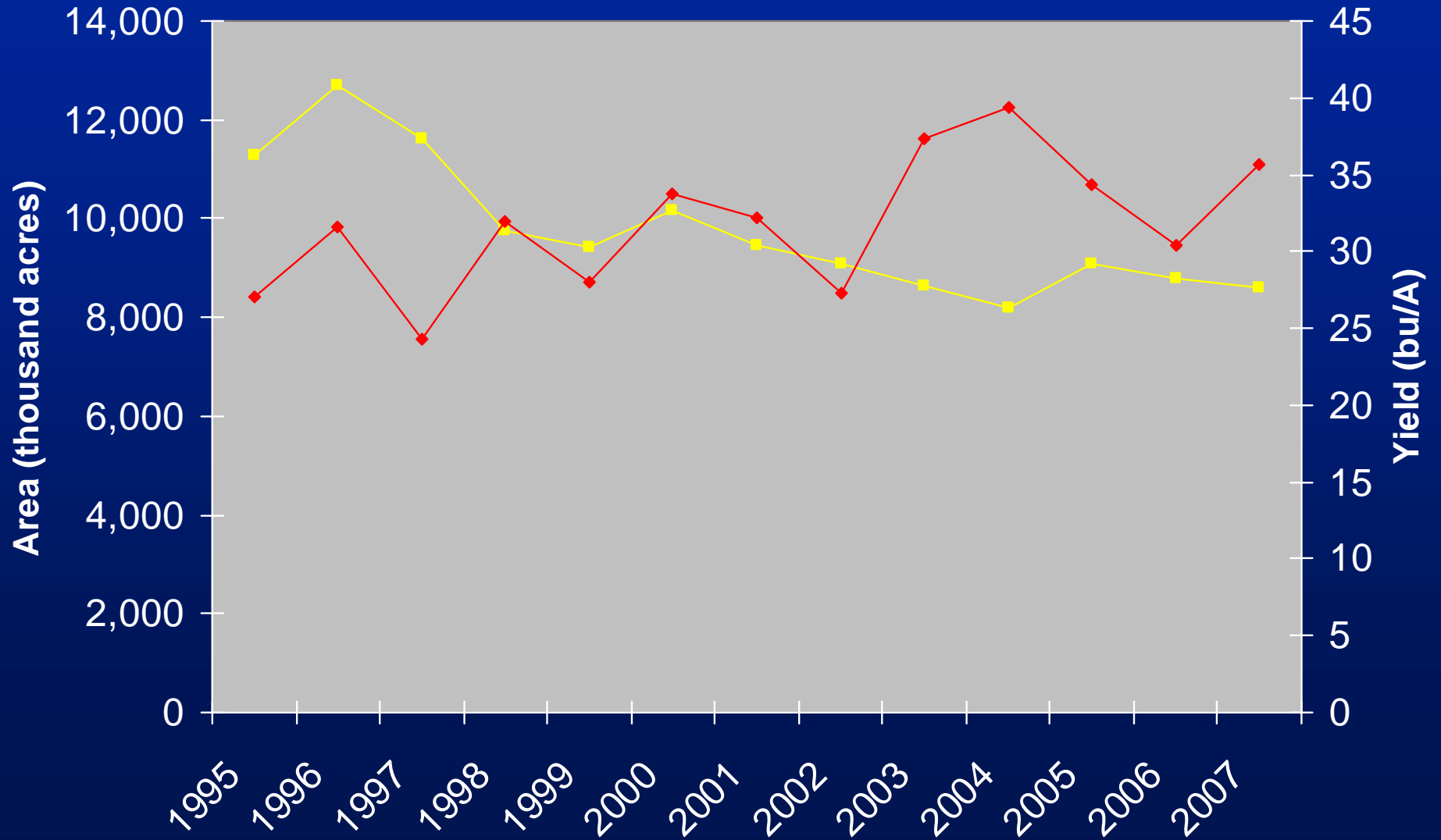
Joel Ransom

Extension Agronomist –
Cereal Crops



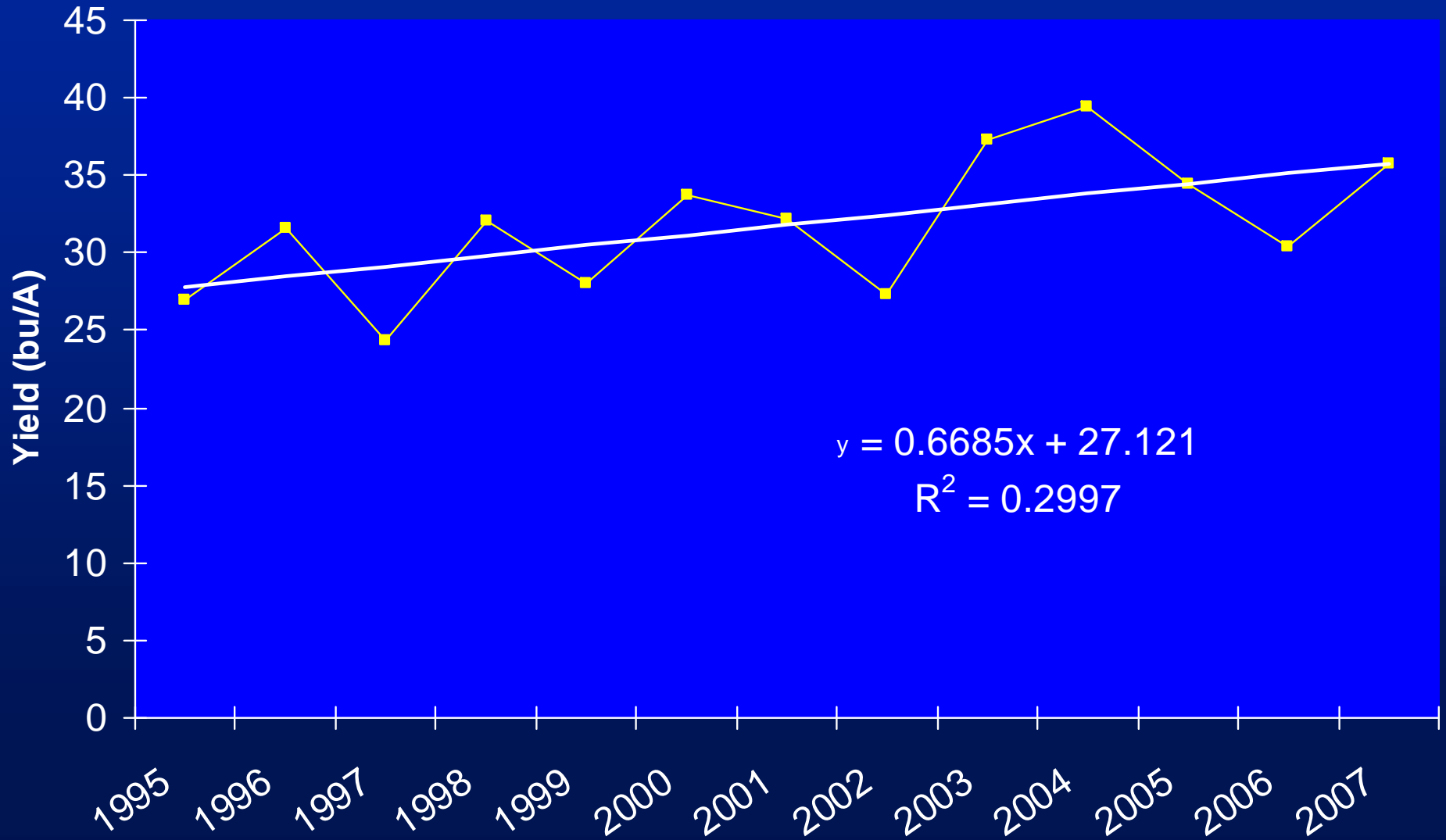
Production and yield trends of wheat in ND 1995-2007

■ Planted ◆ Yield



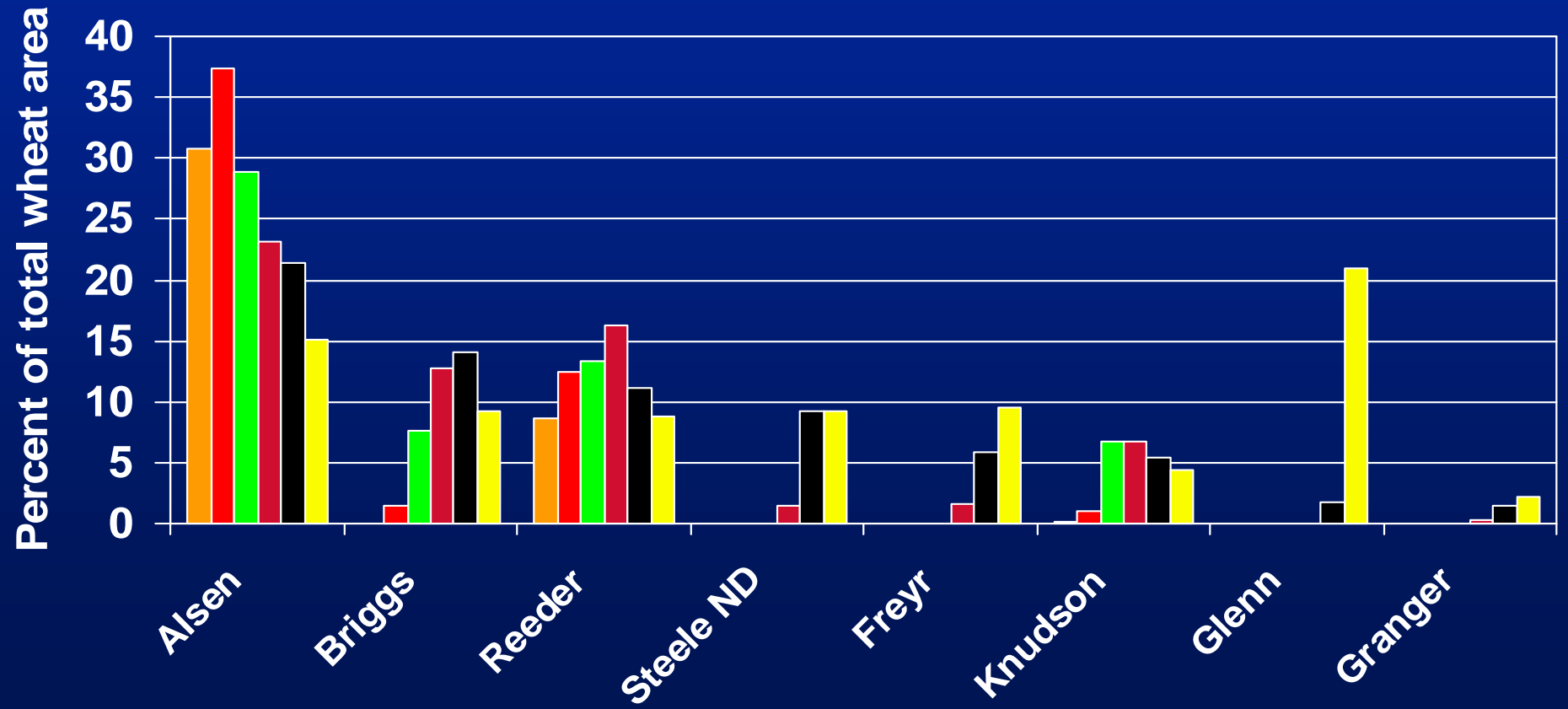
Yield trends in ND 1995-2007

Yield Linear (Yield)



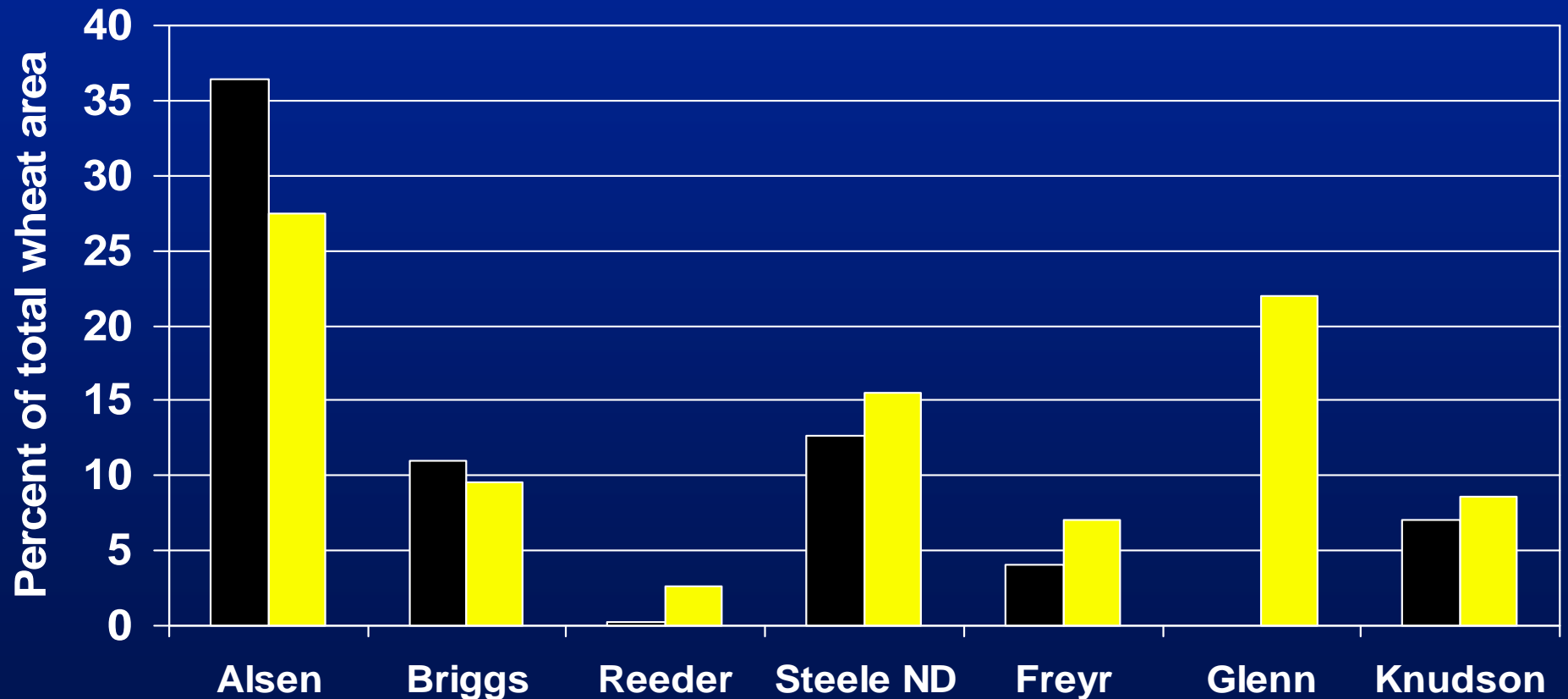
HRSW variety use in ND, 2002-07

2002 2003 2004 2005 2006 2007



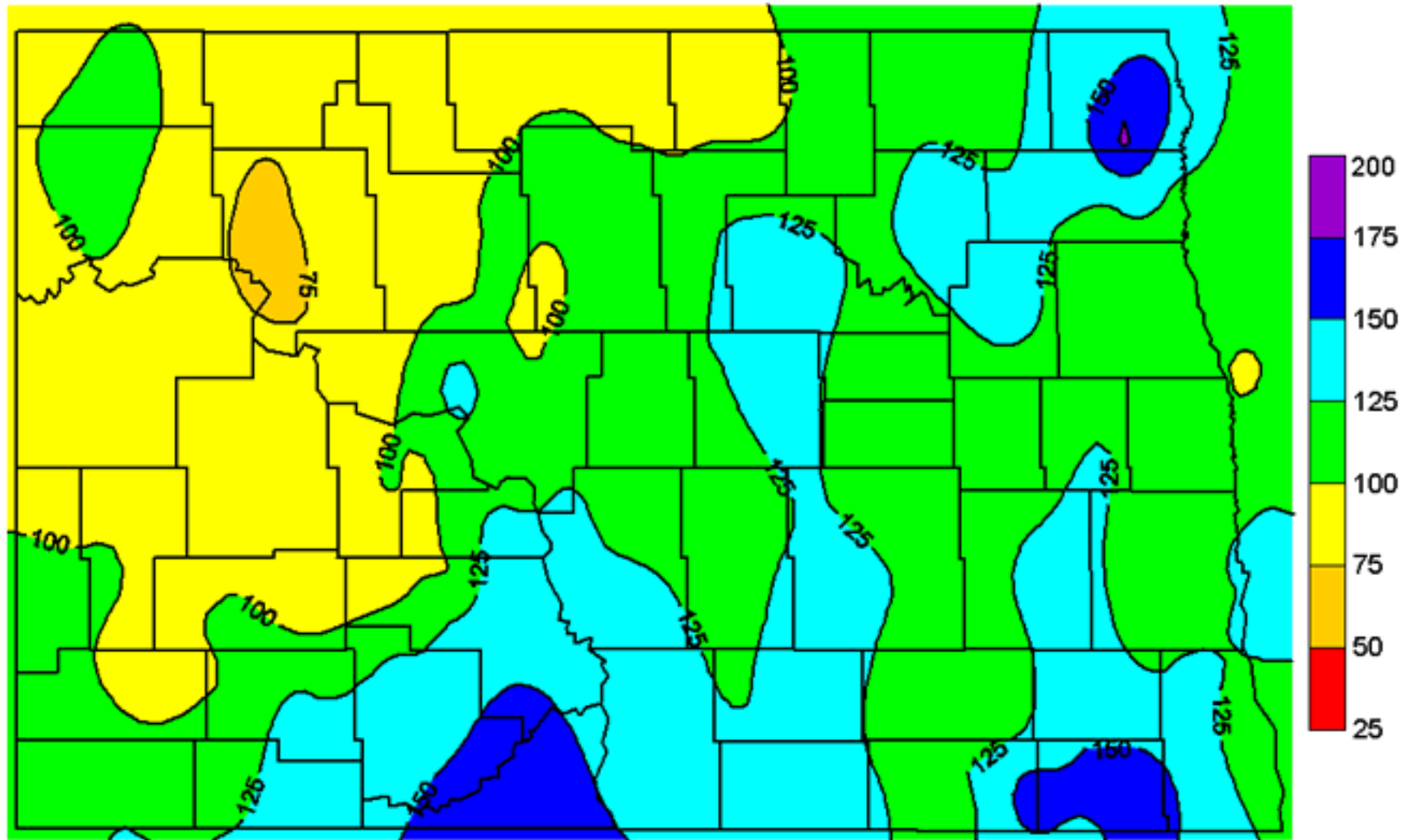
HRSW variety use in north central ND, 2006-07

2006 2007



North Dakota April - September 2007 Precipitation Percent of Normal

(Data from NWS Cooperative Network and North Dakota Agricultural Weather Network (NDAWN))



ND State Climate Office

New varieties of HRSW in 2007

- Faller - NDSU
- AP 604 CL - Agripro
- Kuntz - Agripro
- Cromwell - Thunder S.
- Norwell - Thunder S.
- RB07 - U of M
- Blade - Westbred
- Samson - Westbred
- Vantage - Westbred



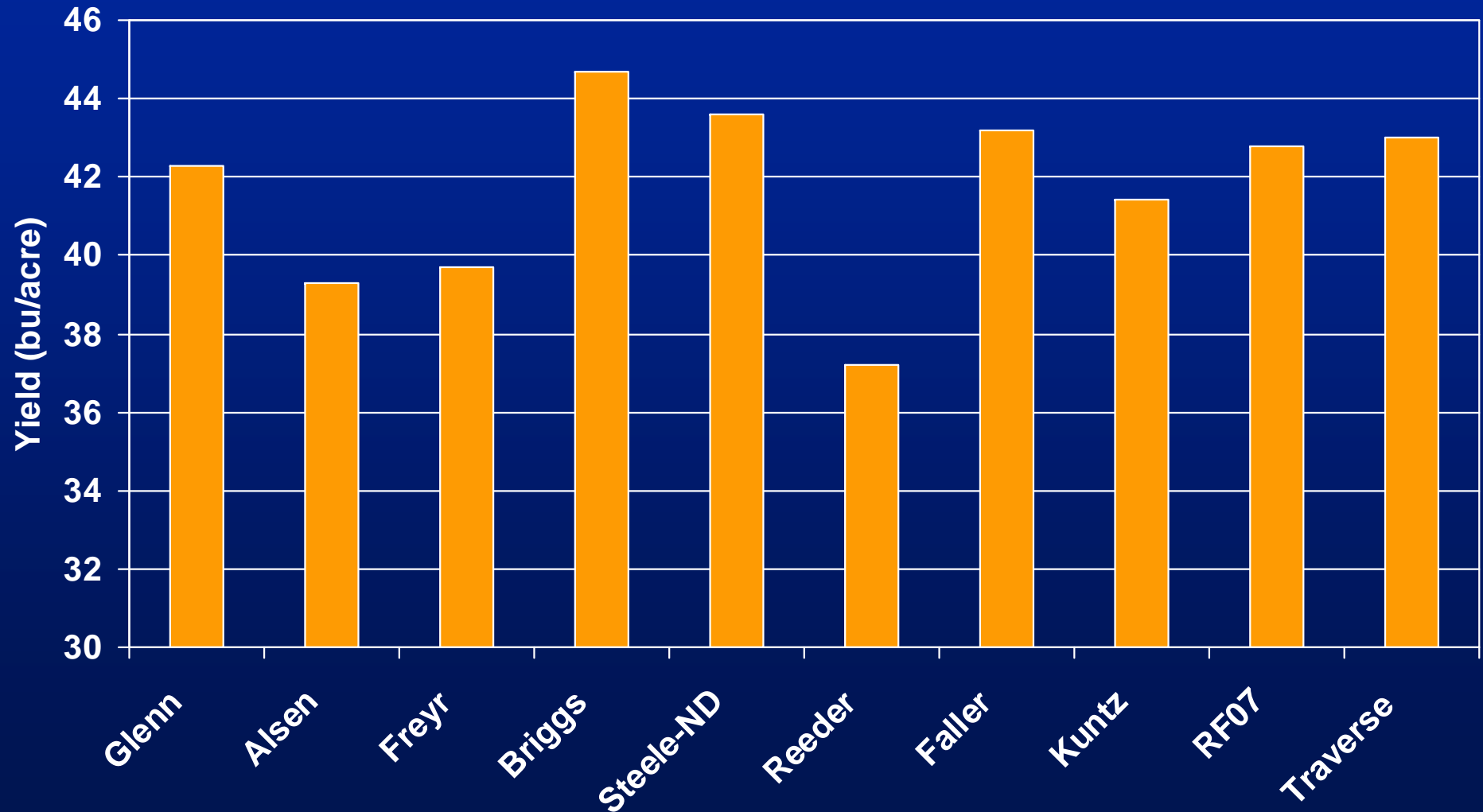
Agronomic characteristics of HRS varieties released in 2007

Variety	Ht	Strw Strgth	Maturity	Test Wt	Protein
AP 604 CL	sdwf	m. strg	m. early	High	Avg
Cromwell	sdwf	Strg	m. early	High	Avg
Faller	sdwf	Strg	med	Ave	Ave/Low
Kuntz	sdwf	Strg	m. early	High	Low
Norwell	sdwf	Strg	m. early	Ave	Low
RB07	sdwf	m. strg	m. early	High	Avg

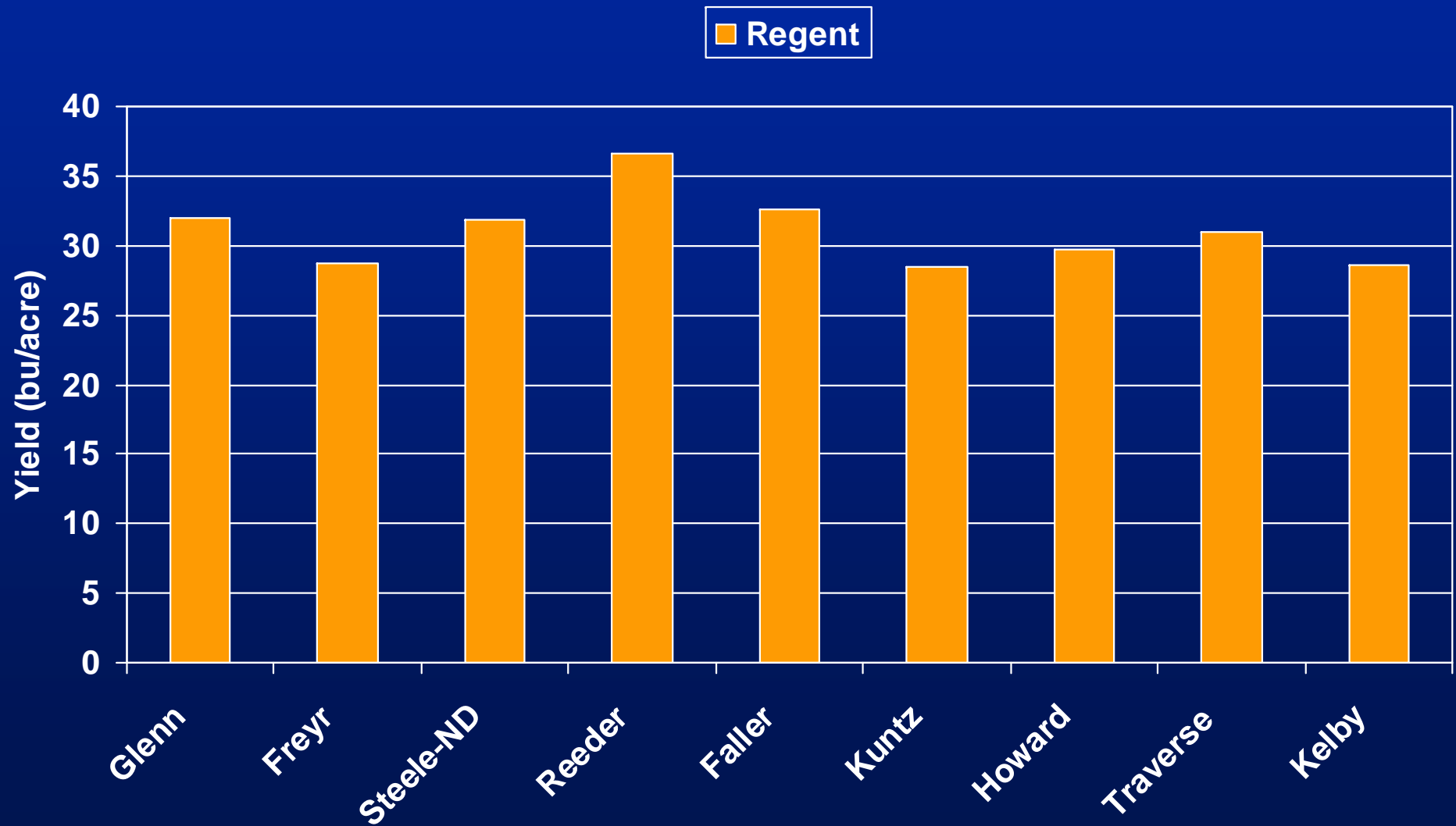
Disease reaction of varieties released in 2007

Variety	Lf rust	Foliar dis.	Scab
AP 604 CL	R	MS	MS
Cromwell	MR	MR	NA
Faller	R	MR	MR
Kuntz	R	MS	M
Norwell	MS	S	NA
RB07	R	MS	MS

Comparative yield of HRSW varieties in western ND, 2007

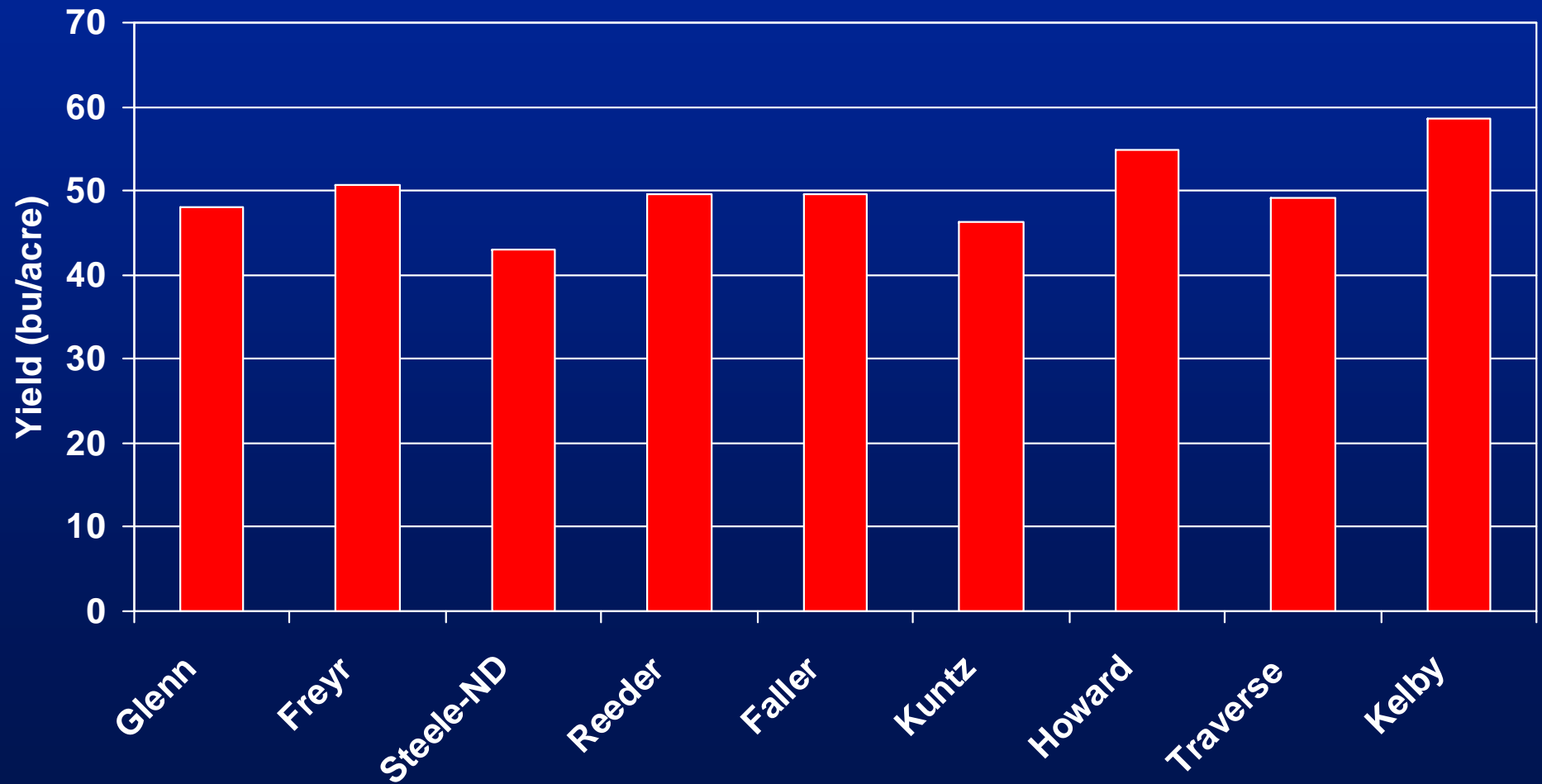


Comparative yield of HRSW varieties in western ND, 2007



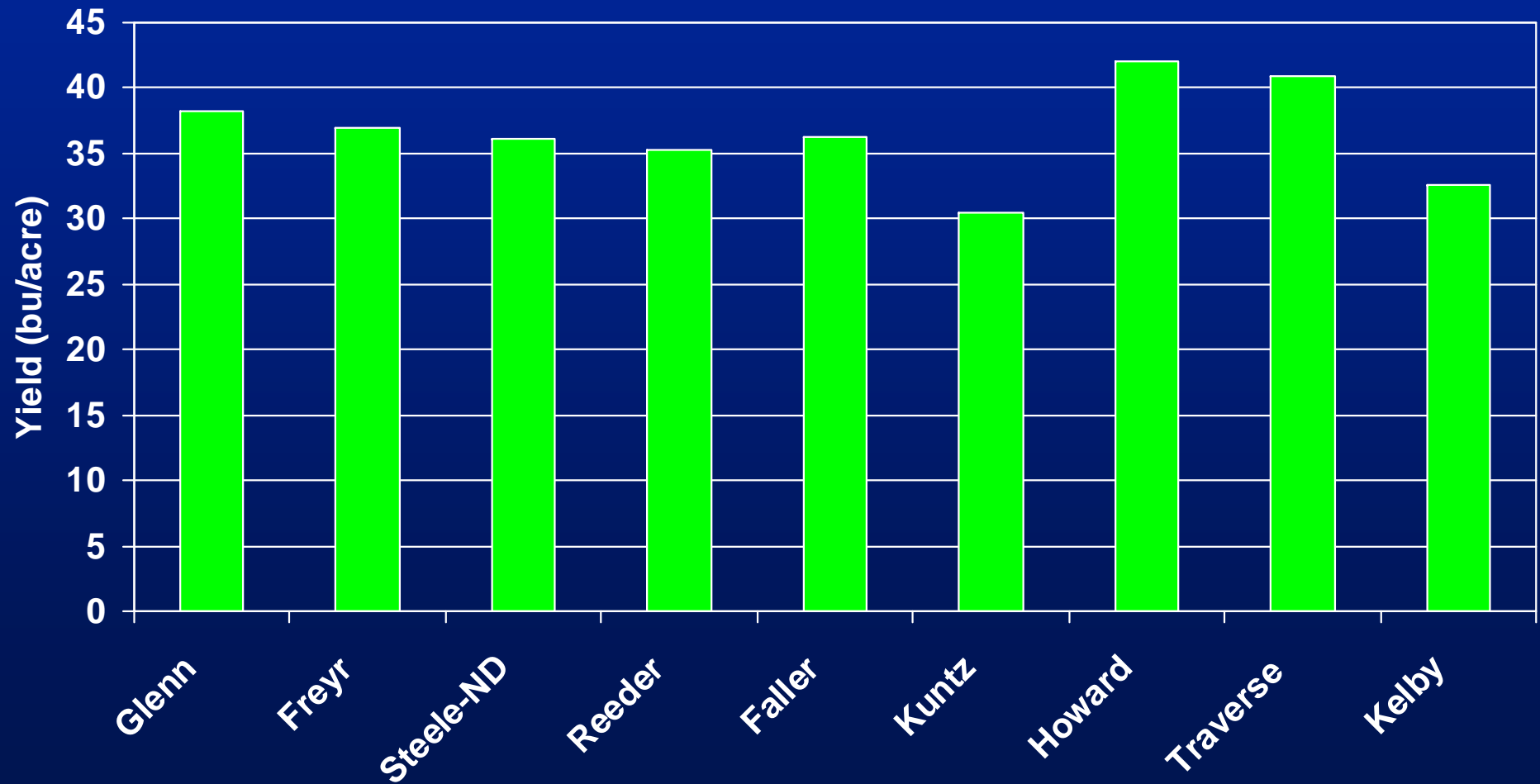
Comparative yield of HRSW varieties in western ND, 2007

■ Scranton



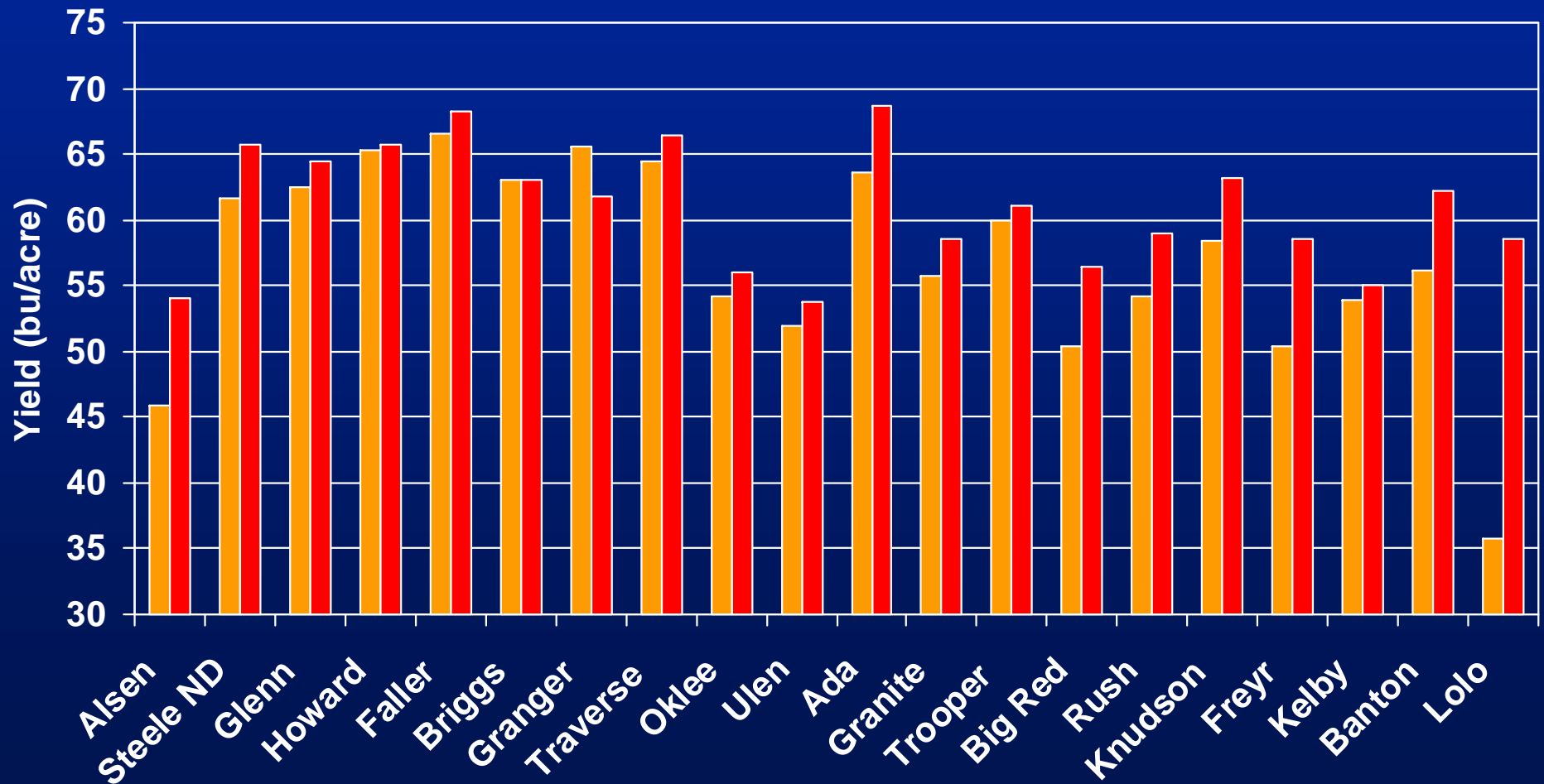
Comparative yield of HRSW varieties in western ND, 2007

■ New Leipzig



Effect of fungicides on HRSW varieties, Lisbon ND, 2007

■ No Fung ■ Fung



Select a stable variety - one that is relatively high yielding in many environments

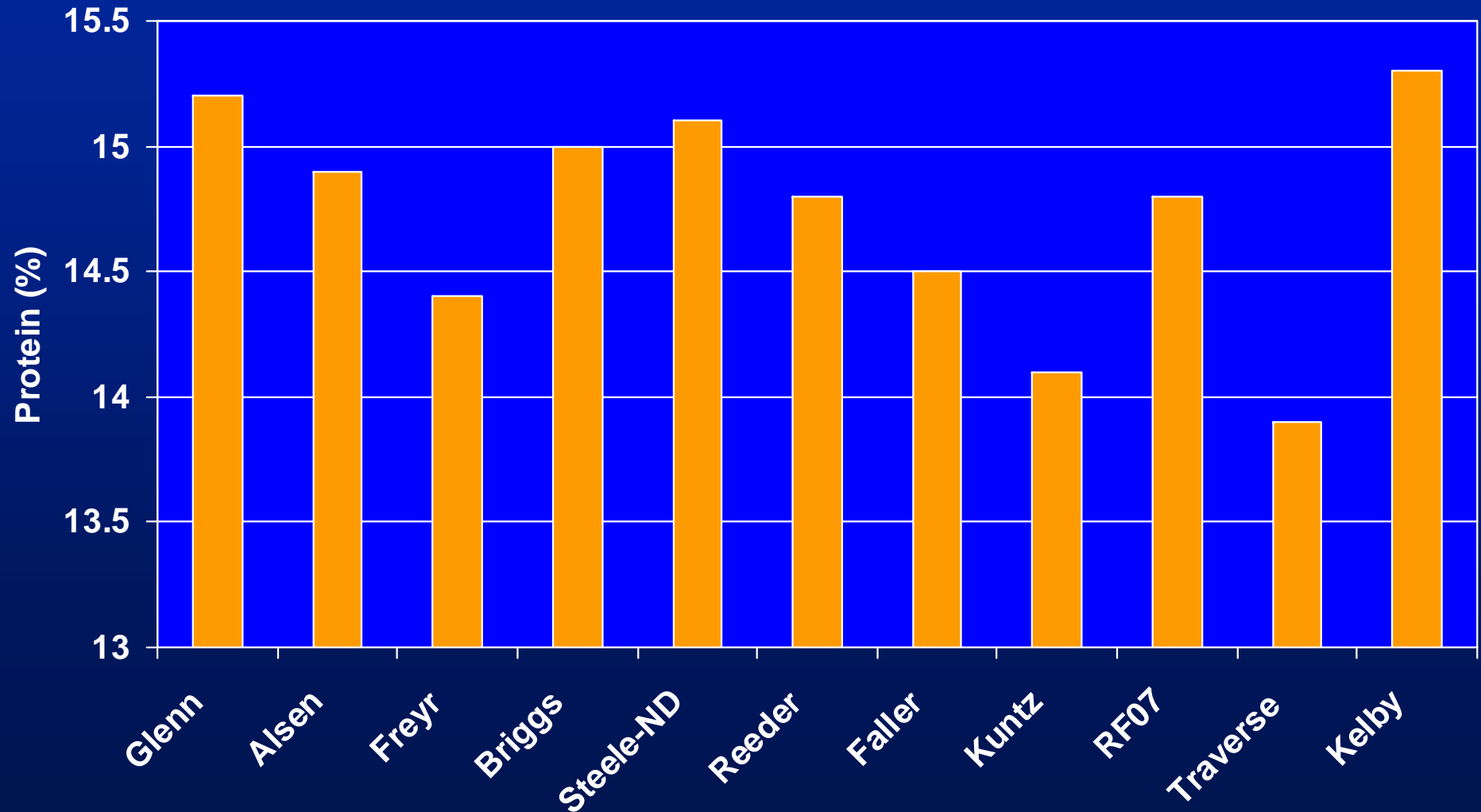
Rank of western locations

Variety	Min	Will	Hett	Dic	Min-3
Briggs	2	6	1	9	4
Faller	5	8	2	5	1
Glenn	8	3	4	6	6
Howard	6	5	7	4	7
Knudson	4	9	9	3	3
Kuntz	9	1	6	9	-
RB07	7	7	5	1	2
Steele-ND	3	2	3	8	5
Traverse	1	4	8	2	-

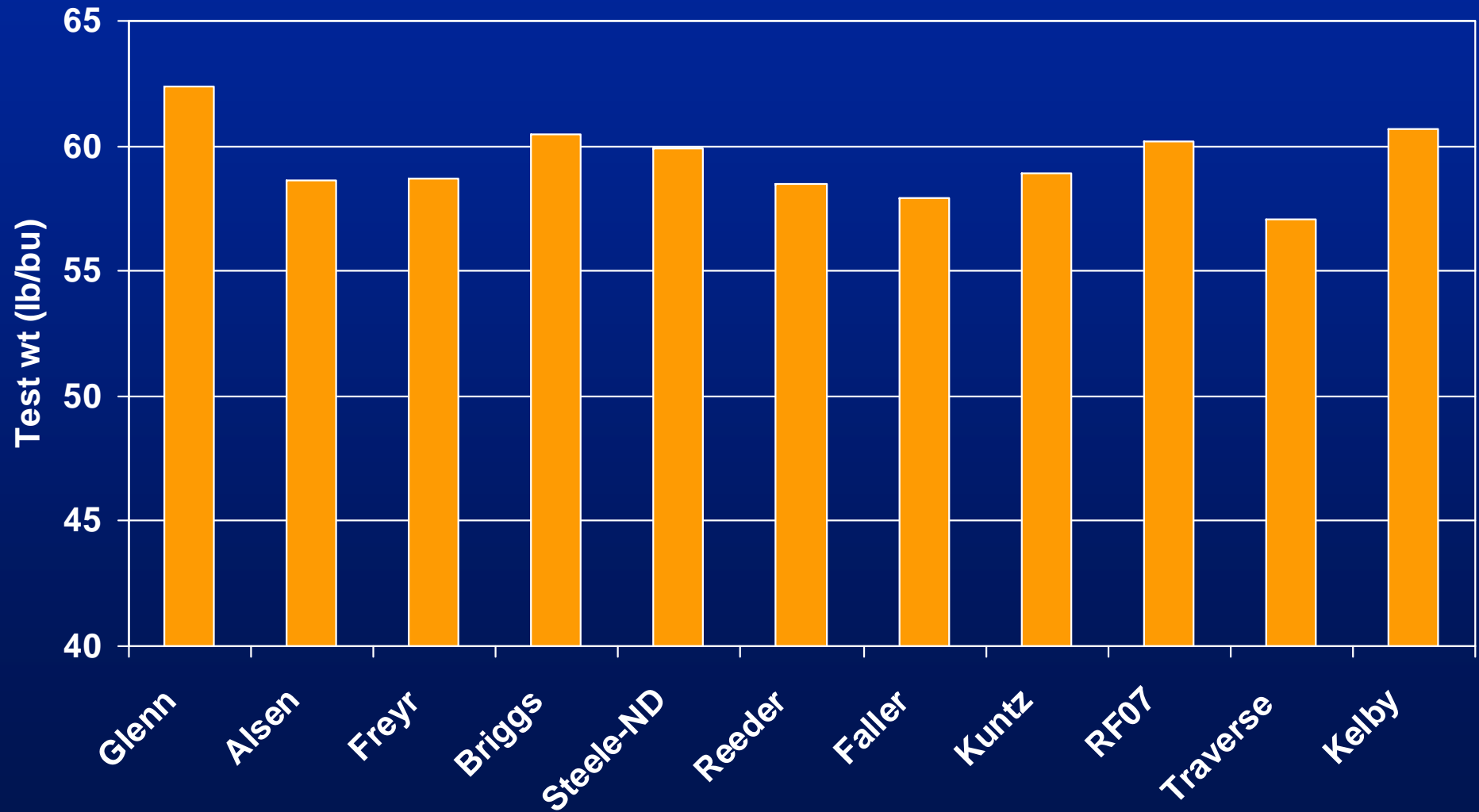
Rank of western off station locations, 2007

Var	N. Leipiz	Regent	Scranton	Dickinson
Faller	2	5	5	4
Freyr	7	3	4	8
Glenn	3	7	3	5
Howard	6	2	1	2
Kelby	8	1	8	3
Kuntz	9	8	9	7
Reeder	1	4	7	9
Steele-ND	4	9	6	6
Traverse	5	6	2	1
Yield	31	50	37	51

Comparative protein of HRSW varieties in ND, 2007



Comparative test weight of HRSW varieties in ND, 2007



Conclusions

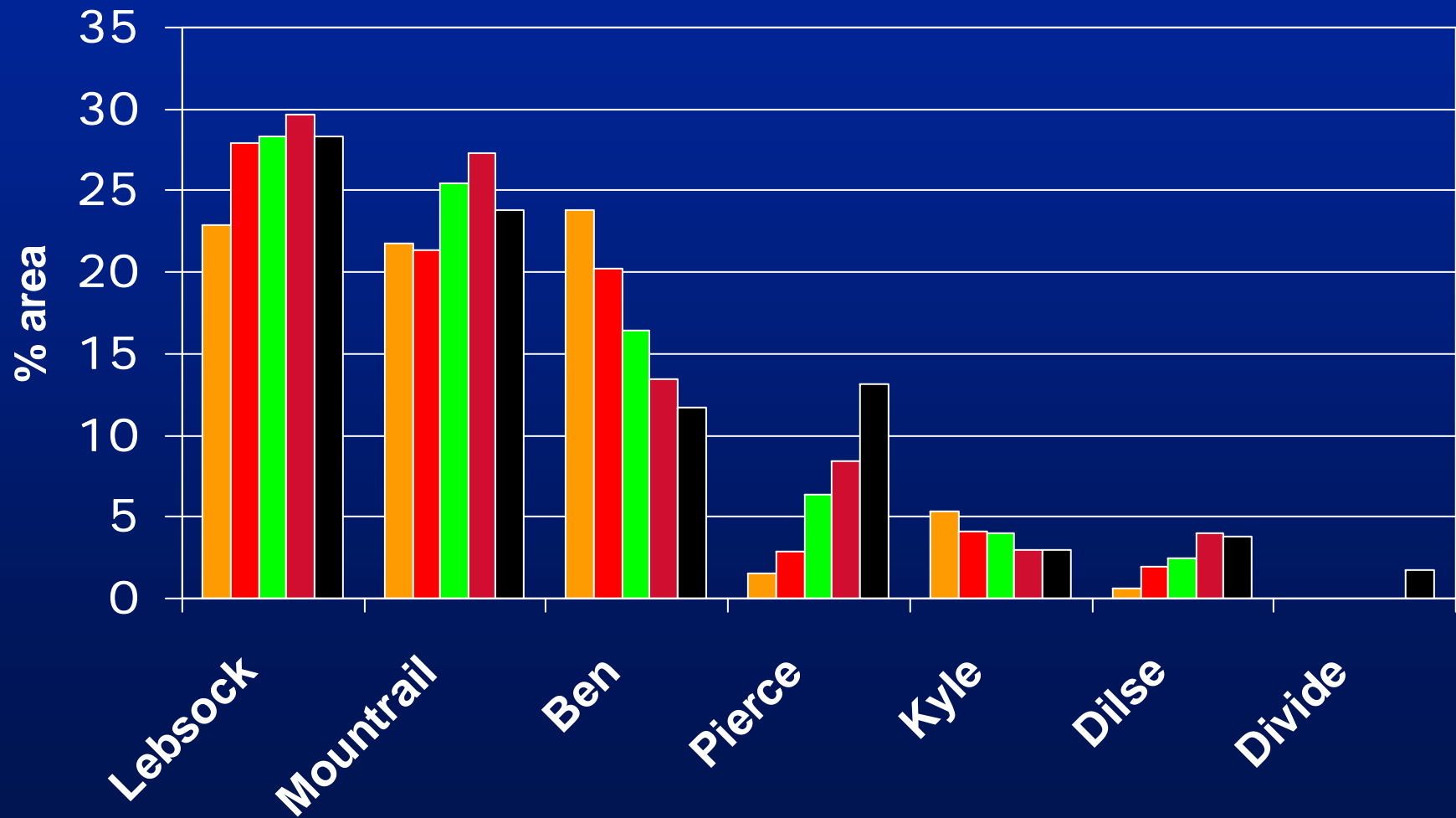
- 2007 was generally a good year for wheat, especially out of RRV
- Many new varieties in 2007, several with limited testing
- Best performers often were newer varieties
- Low protein can be a concern in a few newer releases

Durum Variety Update

With data from Kent McKay
Area Extension Agronomist
NCREC, Minot, ND

Durum varietal use, 2003-07

2003 2004 2005 2006 2007



“The New Big Three”

- **Divide**
 - Ben/Belzer
- **Alkabo**
 - Direct parents experimentals
 - Renville, Ward, Fjord, Rugby, Crosby, Vic
- **Grenora**
 - Direct parents experimentals
 - Sceptre, Laker, Vic, Cando, Ward

2008 Durum Variety Selection

- **NE, Central ND important considerations:**
 - Yield
 - Scab ratings (2005 Langdon, Carrington data)
 - Lodging
- **NW, NC, SW important considerations:**
 - Yield
 - Quality: Test weight
 - Protein

NE AREA Durum 2005-2007

(9 site locations)

Langdon, Perth, Devils Lake

Variety	Yield Bu/A
Alkabo	61.5
Divide	58.8
Grenora	60.2
Lebsock	58.2
Mountrail	59.8

Langdon REC Durum, 2005

FHB Incidence %

Variety	Langdon	Devils Lake
Divide	24.5	33.3
Grenora	37.8	41.7
Alkabo	31.1	51.7
Mountrail	33.3	36.7
Lebsock	28.9	40.0
Pierce	33.3	48.4
Primo Doro	28.9	51.7
Dilse	40.0	50.0
TRIAL MEAN	33.3	44.3

Carrington Durum 2005-2007 (6 site locations)

Variety	Yield Bu/A
Alkabo	41.5
Divide	41.8
Grenora	40.4
Lebsock	39.5
Mountrail	39.0

2008 Durum Variety Selection

- **NW, NC, SW important considerations:**
 - Yield
 - Quality: Test weight
 - Protein

Williston Durum 2005-2007

(18 site locations)

Variety	Yield Bu/A
Alkabo	45.1
Divide	45.3
Grenora	45.6
Lebsock	42.7
Mountrail	46.1
Pierce	43.6

NW AREA Durum 2007

(6 locations)

Variety	Yield Bu/A	TW Lb/bu	Protein %
Alkabo	39.6	60.0	12.9
Divide	38.2	59.4	13.5
Grenora	40.2	59.0	13.1
Lebsock	36.0	60.3	13.5
Mountrail	39.5	59.1	13.3
Pierce	35.0	59.8	13.9
TRIAL MEAN	35.2	59.4	13.7

Ranking of yield in western location trials, 2007

	Minot	Williston	Dickinson	Hettinger	Glen Ullin
Alkabo	2	2	2	2	4
Divide	4	4	6	5	3
Grenora	1	1	1	3	2
Lebsock	5	5	5		
Mountrail	3	3	3	1	1
Pierce	6	6	4	4	

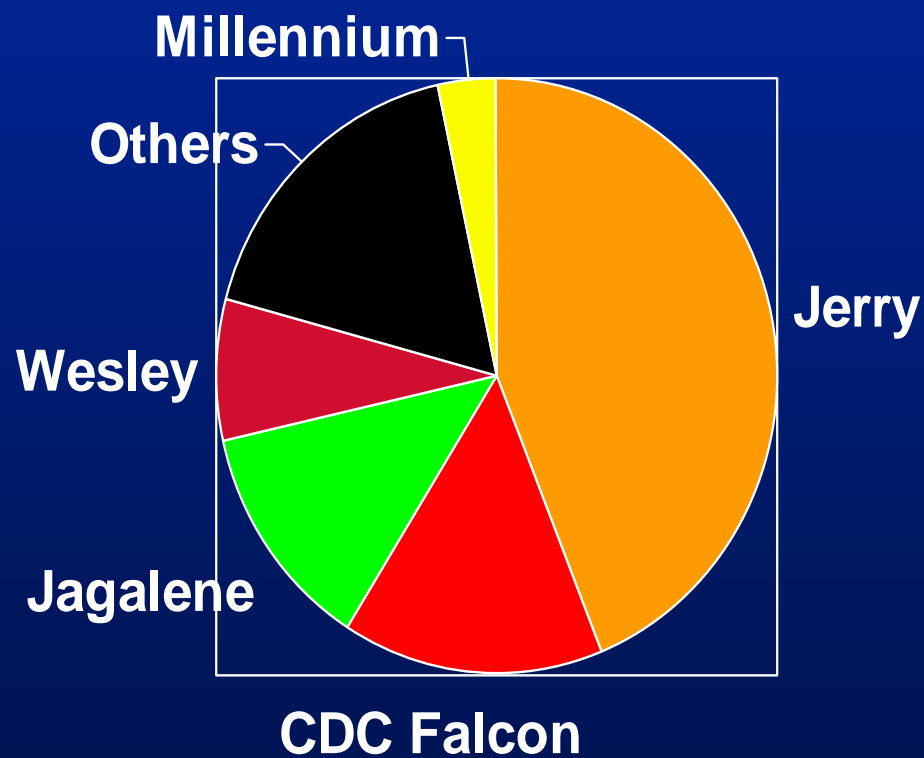
Durum Variety Summary

- **Divide**
 - Above average yield
 - Best scab tolerance to date
 - Lower tombstone, lower leaf disease ratings
 - Above average test weight, especially where scab was rated as moderate or higher
 - Moderate (weak?) straw strength
- **Grenora:**
 - Above average yield
 - Has lower tombstone and FHB severity ratings
 - Below average test weight and protein are a concern
- **Alkabo:**
 - Most susceptible to scab of the 3 new releases
 - Above average yield and test weight
 - Below average Protein

Durum Variety Summary

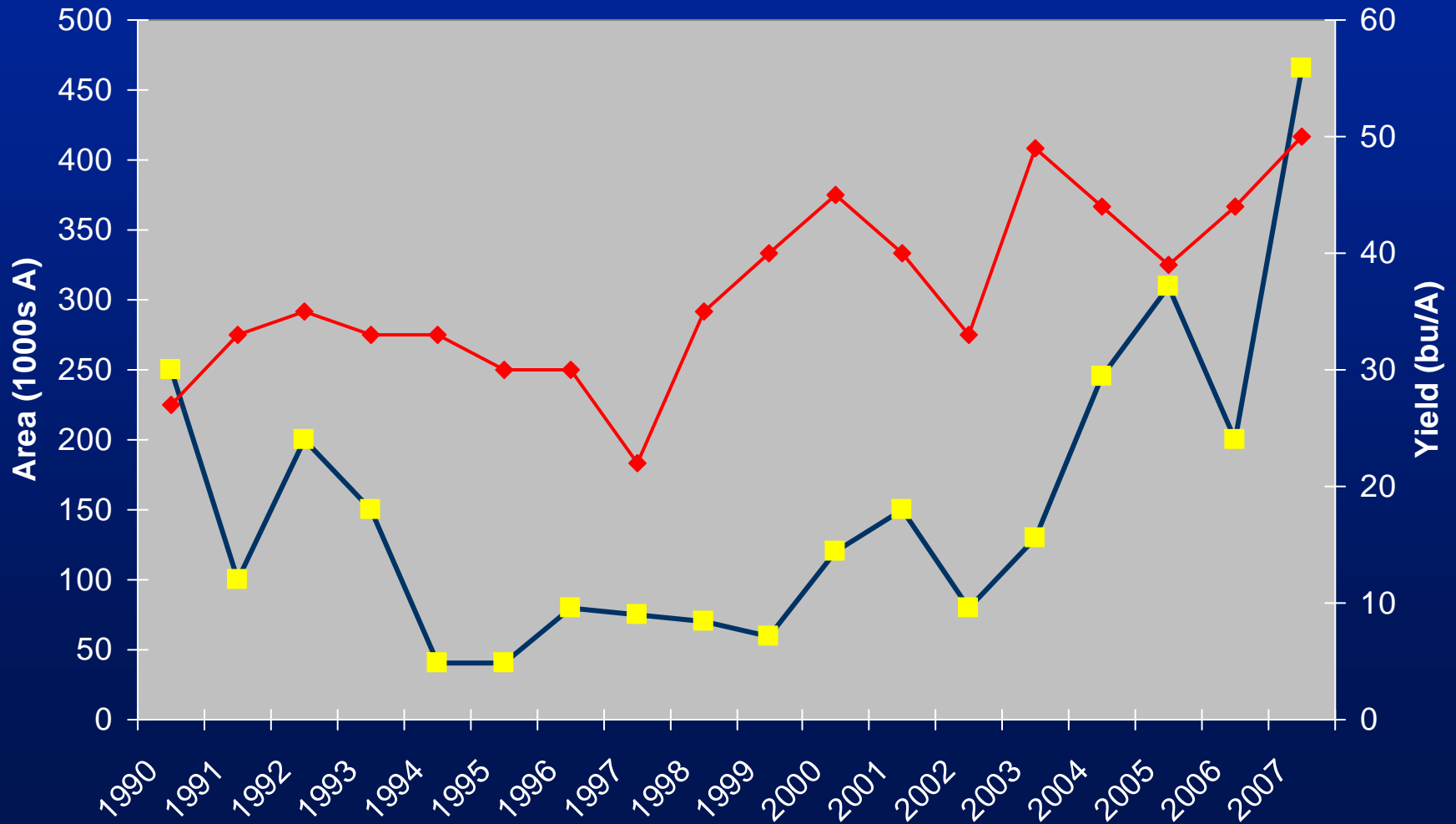
- **Lebsock**
 - Will continue to be popular, very high test weight, strong straw strength
- **Maier, Dilse**
 - Average yield, above average protein
- **Ben**
 - Large kernel size (“puffing” durum market)

Winter wheat area by variety 2007



Trends in winter wheat production in ND

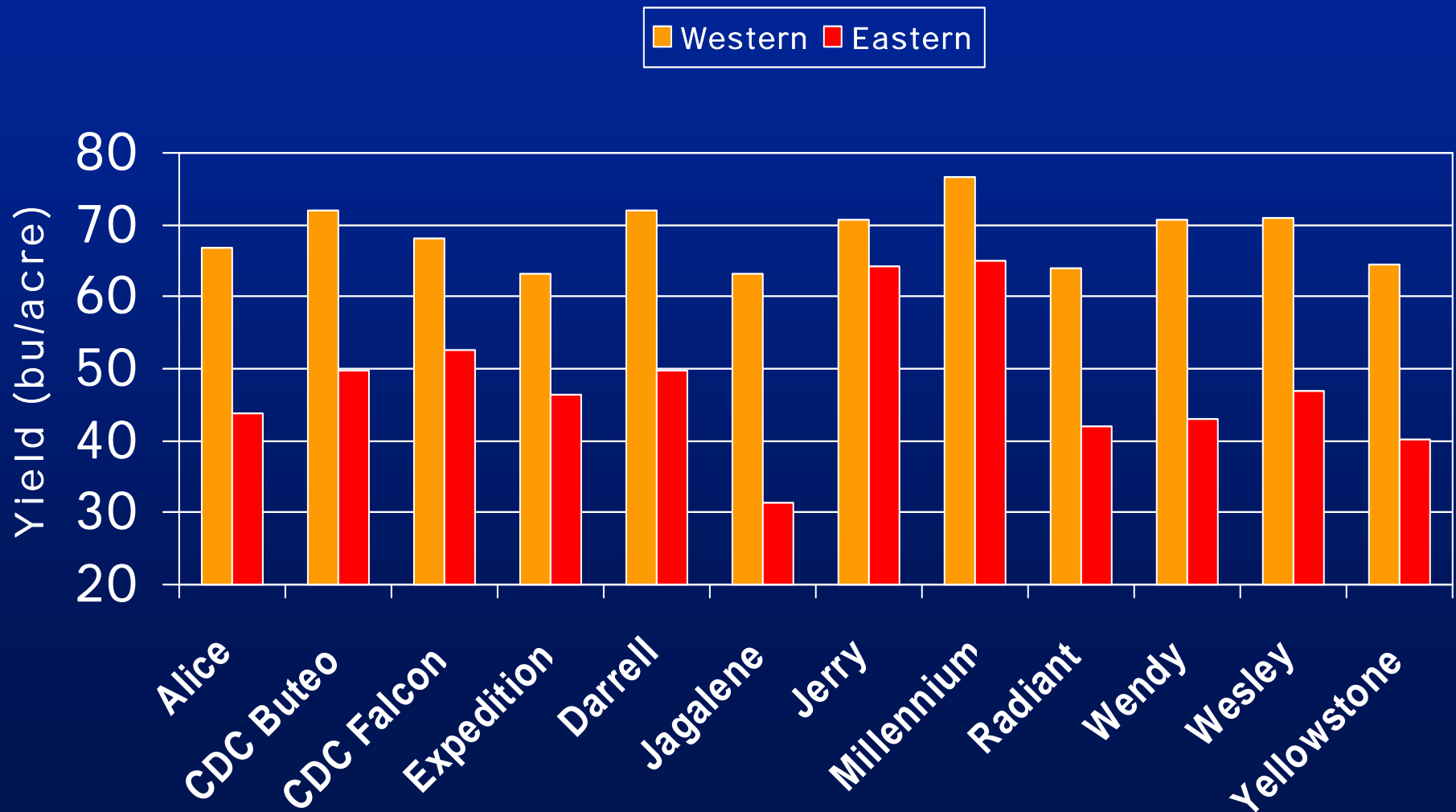
■ Area ◆ Yield



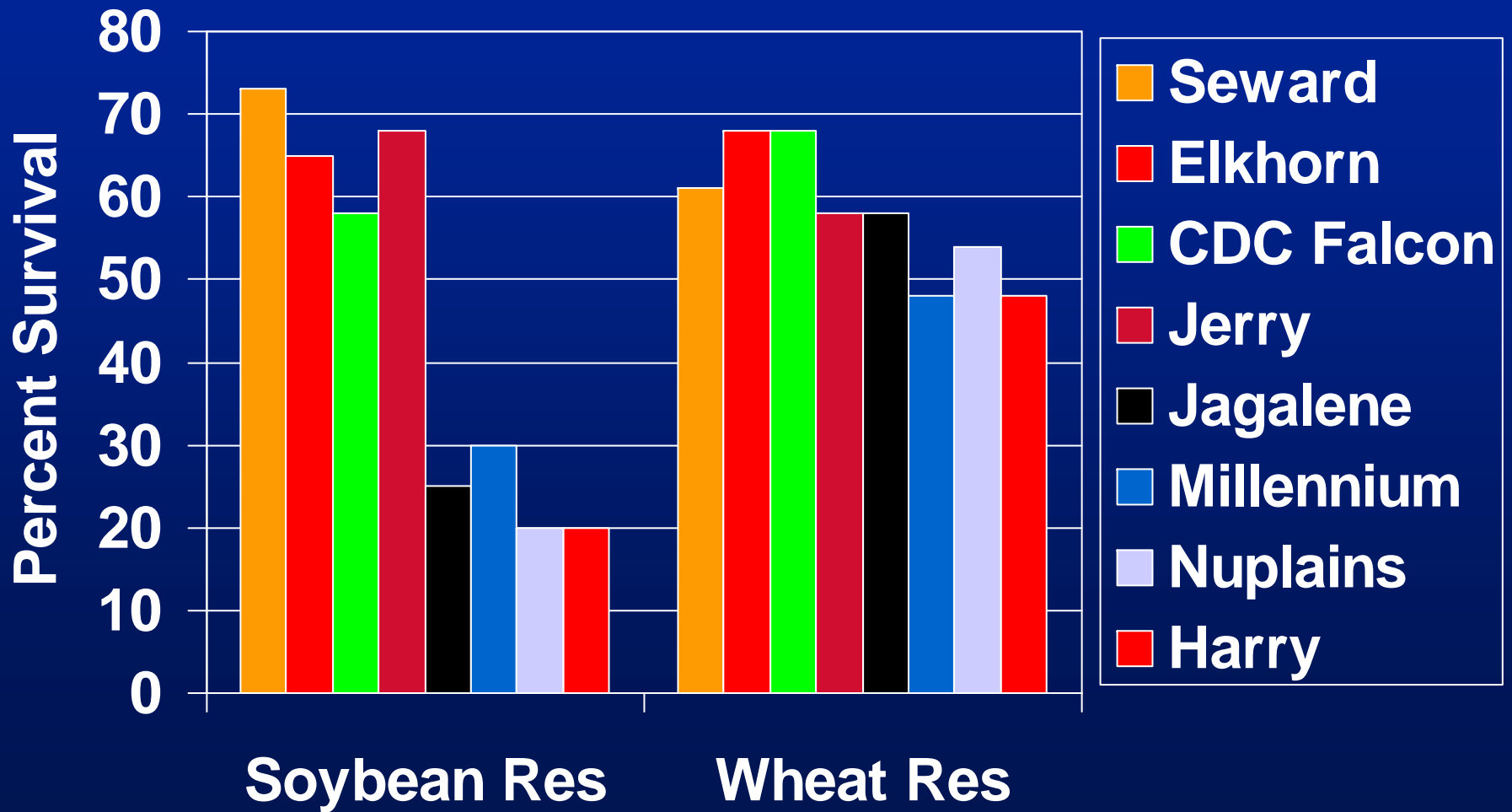
Effect of wheat class on yield and protein, mean of 20 varieties from two adjacent trials, Ransom County, 2007

	No Fungicide		Prosaro @ Flowering	
<i>Wheat Class</i>	<i>Yield</i>	<i>Protein</i>	<i>Yield</i>	<i>Protein</i>
Spring wheat	57.0	15.5	61.0	15.5
Winter wheat	57.9	13.4	78.5	13.7

Yield of winter wheat varieties in eastern and western ND, 2007



Effect of crop residue on winter survival, 2003/04, ND.



Conclusions

- 2007 for western ND there was above average for yield for small grains
- Many new varieties of HRSW
 - Variety selection should be based on multi-year and -location data
 - Don't forget disease resistance (2005 data) when deciding
- New durum varieties offer good options
- Winter wheat was severely affected by disease if fungicide was not applied