

Wheat Variety Trial Results & Selection

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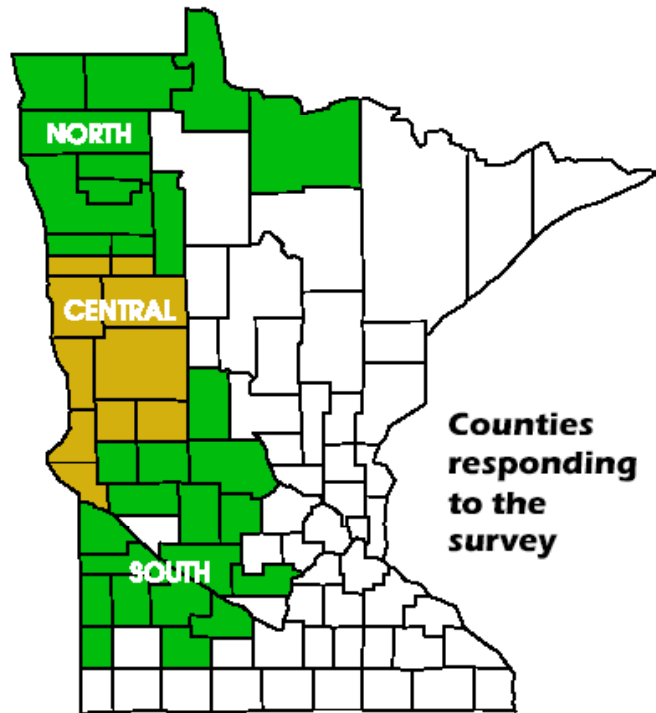
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Principles of Variety Selection

- Hedge – the mix and match principle:
 - To counter G x E interaction:
 - Yield potential
 - Disease risks
 - Two to three varieties depending on your acreage
 - One FHB resistant variety
 - One balanced variety
 - One high yield variety
 - Are we getting close enough that a separate hedge against FHB is no longer needed?

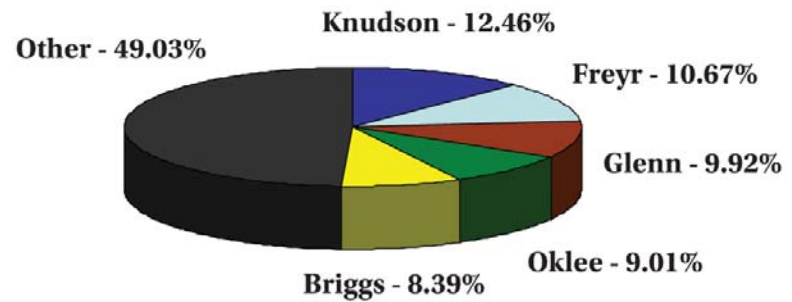


Variety Surveys



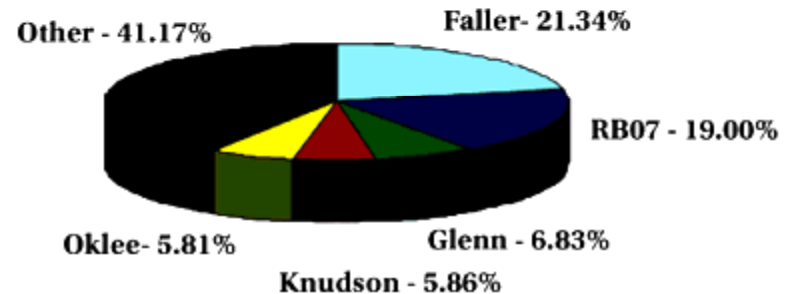
Top Five Varieties in Minnesota, 2008

Total Acres Surveyed in 2008: 419,958



Top Five Varieties in Minnesota, 2009

Total Acres Surveyed in 2009: 401,329



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New Releases in 2009

<i>Variety</i>	<i>Pluses</i>	<i>Minuses</i>
Albany (Trigen)	Yield FHB Hedge	PHS Grain protein
Brennan (AgriPro)	Balanced	
Jenna (AgriPro)	Yield	
Barlow (NDSU)	Balanced FHB Hedge	Straw strength



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New Releases in 2009

<i>Variety</i>	<i>Pluses</i>	<i>Minuses</i>
Brick (SDSU)	Test weight FHB Hedge Early maturity	Straw strength
Brogan (WestBred)	Straw strength	
Sabin (MAES)	Adaptation FHB Hedge	Straw strength



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New Releases in 2010

<i>Variety</i>	<i>Pluses</i>	<i>Minuses</i>
Select (SD 3948)	Briggs type	
Digger (WestBred)	High yield	



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Variety	Leaf Rust
Barlow	1
Briggs	1
Faller	1
Glenn	1
Howard	1
RB07	1
Steele-ND	1
Blade	2
Brennan	2
Brick	2
Kelby	2
Knudson	2
Albany	3
Breaker	3
Granger	3
Jenna	3
Kuntz	3
Sabin	3

Variety	Leaf Rust
Cromwell	4
Freyr	4
Oklee	4
Tom	4
Ada	5
Hat Trick	5
Samson	5
Traverse	5
Vantage	5
Bigg Red	8
Marshall	8
Brogan	–

Leaf Rust

- No changes in ratings
- Rating <4 no problems expected
- Rating >4 requires active scouting



Variety	Scab
Bigg Red	3
Brick	3
Glenn	3
Albany	4
Barlow	4
Blade	4
Cromwell	4
Faller	4
Freyr	4
Hat Trick	4
Sabin	4
Tom	4
Breaker	–
Brennan	–
Brogan	–
Jenna	–

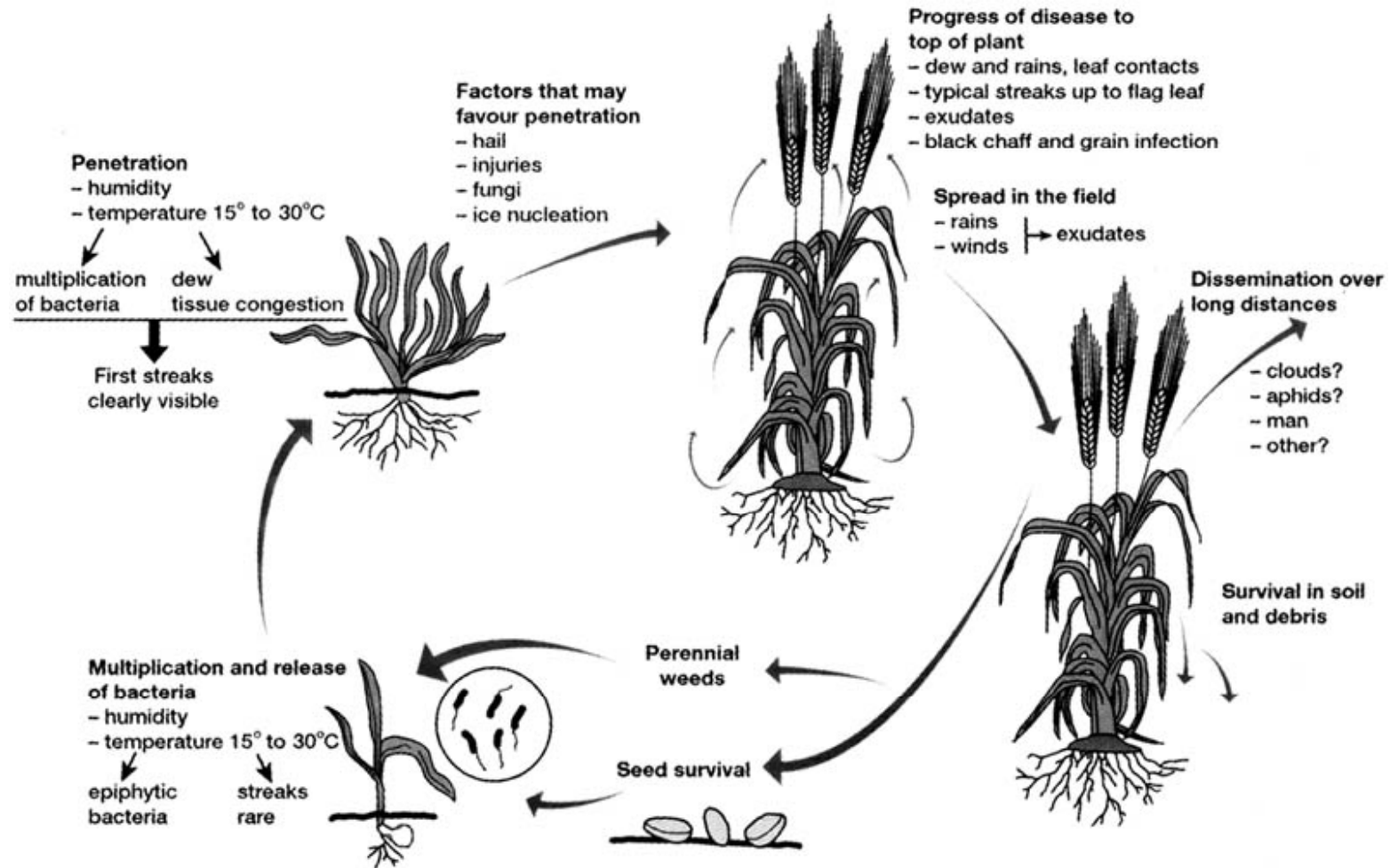
Variety	Scab
Briggs	5
Granger	5
Kelby	5
Oklee	5
RB07	5
Traverse	5
Vantage	5
Ada	6
Howard	6
Knudson	6
Kuntz	6
Steele-ND	6
Marshall	7
Samson	7

FHB

- Brick, Barlow, and Sabin added to the list of hedges against FHB
- Breaker will likely be a 4, while Brennan and Jenna both will likely be a 6.



Bacterial Leaf Streak



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Bacterial Leaf Streak

Variety	BLS
Blade	more resistant
Cromwell	more resistant
Faller	more resistant
Howard	more resistant
Knudson	more resistant
Hat Trick	more susceptible
Kelby	more susceptible
Samson	more susceptible

- Caused by *Xanthomonas translucens pv. undulosa*, a bacteria.
- Causes black chaff and bacterial leaf streak/stripe
- No control options
- Yield loss estimates vary greatly (<5 to >40%)
- Often localized and highly variable



Straw Strength

Variety	Straw Strength
Samson	2
Vantage	2
Breaker	3
Brogan	3
Ada	4
Blade	4
Brennan	4
Glenn	4
Jenna	4
Kelby	4
Kuntz	4
Marshall	4

Variety	Straw Strength
Albany	5
Brick	5
Cromwell	5
Faller	5
Hat Trick	5
Knudson	5
RB07	5
Barlow	6
Bigg Red	6
Freyr	6
Oklee	6
Sabin	6
Tom	6
Traverse	6
Briggs	7
Granger	7
Howard	7
Steele-ND	7

- Classification:
 - 2-3: Very erect and European phenotype
 - 4-5: Classical HRSW and adequate in most circumstances.
 - 6-7: Weaker HRSW and lodging problems a real possibility.



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Yield Trial Summary

- Northern Locations:
 - Crookston - 86 bu/A
 - Stephen - 79 bu/A
 - Roseau – not planted
 - On-Farm - 89 bu/A
- Southern Locations:
 - Morris - 50 bu/A
 - Lamberton – 66 bu/A



Yield Trial Summary

- Intensively Managed:
 - Northern - 4.8 bu/A advantage
 - Southern – 5.5 bu/A advantage
 - Little to no FHB
 - Little leaf rust in Crookston
- CV were pretty high.



Variety	1-Year	2-Year	3-Year
Faller	122	117	121
Samson	117	112	113
Traverse	109	110	112
Jenna	102	104	–
Tom	100	104	104
Breaker	102	103	–
RB07	101	103	102
Albany	110	103	108
Howard	107	102	103
Knudson	106	102	105
Kuntz	96	102	102
Barlow	107	102	–
Brennan	98	101	–
Hat Trick	99	100	100
Vantage	102	100	100
Cromwell	100	100	102
Oklee	98	99	99
Freyr	98	98	101
Sabin	99	98	99
Blade	99	98	101
Kelby	89	98	101
Ada	98	97	98
Glenn	91	97	97
Briggs	101	96	102
Brick	90	96	99
Steele-ND	99	96	98
Bigg Red	91	93	91
Granger	92	91	93
Marshall	92	91	85
Brogan	98	–	–
Mean (Bu/A)	82.4	82.1	76.4
LSD (0.05)	10.6	7.6	6.7

Yield Data

- Synopsis:
 - No real surprises
 - Data is sorted on 2-year northern average with top 3 in green, yellow > 100 and orange <100.

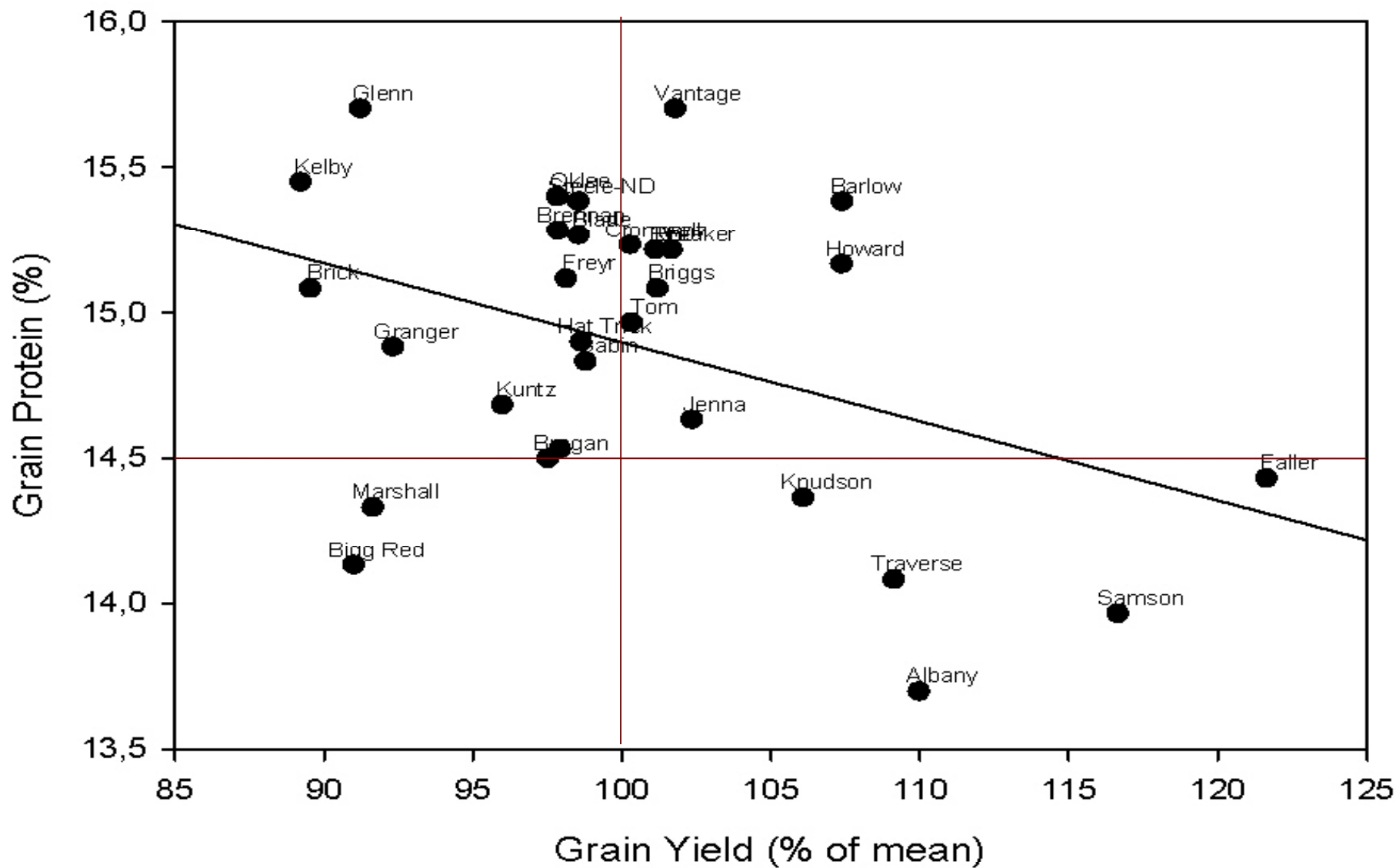


Variety	2009	2-Year	3-Year
Albany	122	114	116
Traverse	108	111	113
Brennan	111	111	–
Howard	107	111	111
Jenna	110	111	–
Sabin	102	107	112
Faller	113	105	109
Samson	103	104	105
Breaker	105	104	–
Granger	106	104	105
Bigg Red	105	103	101
Knudson	99	103	106
Steele-ND	98	102	106
RB07	98	102	102
Oklee	103	102	101
Freyr	101	100	100
Vantage	101	100	99
Barlow	98	100	–
Blade	97	99	100
Kuntz	99	97	98
Kelby	91	97	99
Tom	96	96	95
Brick	90	96	96
Briggs	94	95	98
Ada	100	95	94
Cromwell	96	94	93
Glenn	91	92	93
Hat Trick	87	88	94
Marshall	90	80	73
Brogan	107	–	–
Mean (Bu	55.9	56.0	56.9
LSD (0.05)	11.5	10.0	8.6

Yield Data

- Faller had a better year in southern locations - still a tale of caution



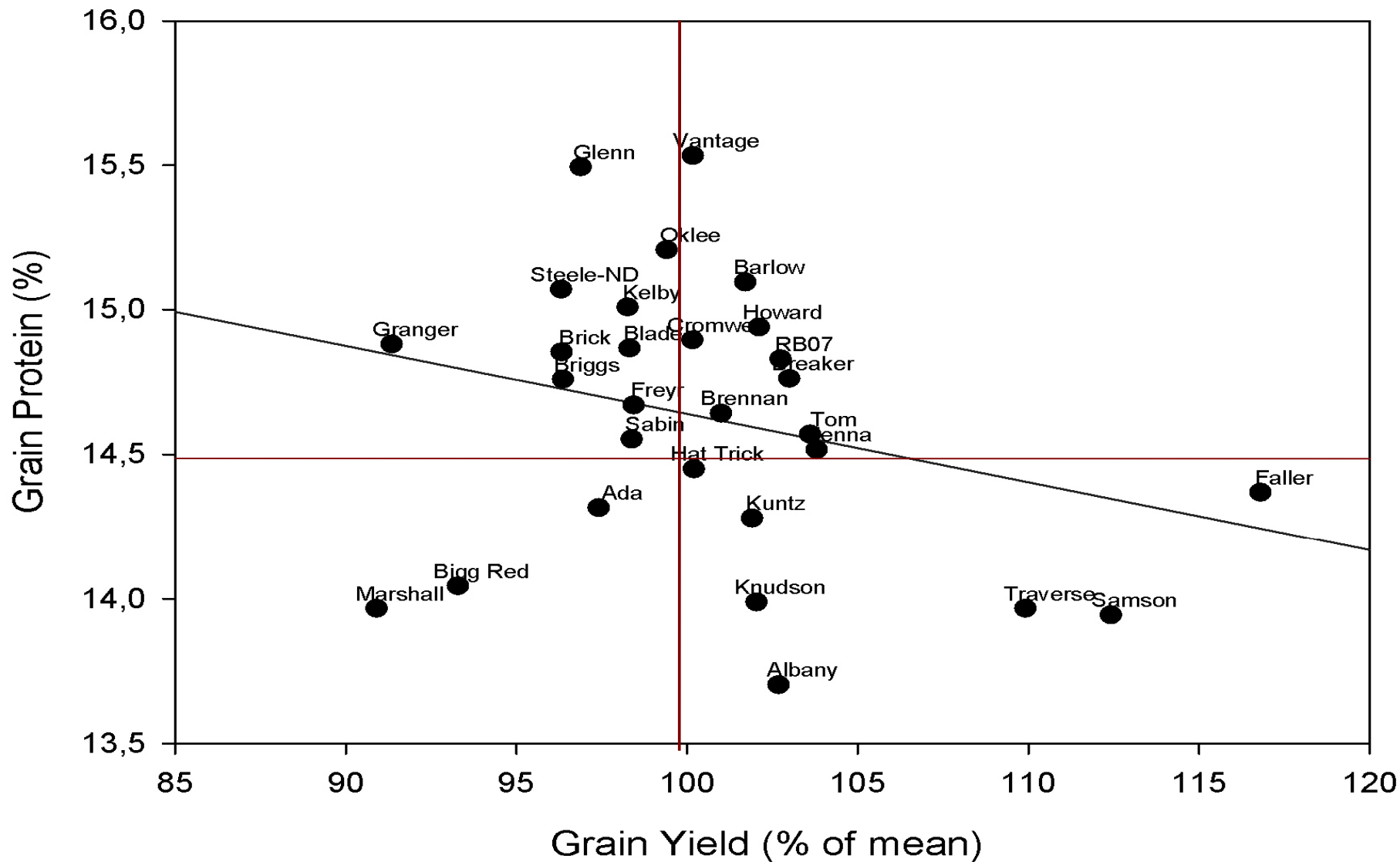


2009 Data – Northern Locations AY1



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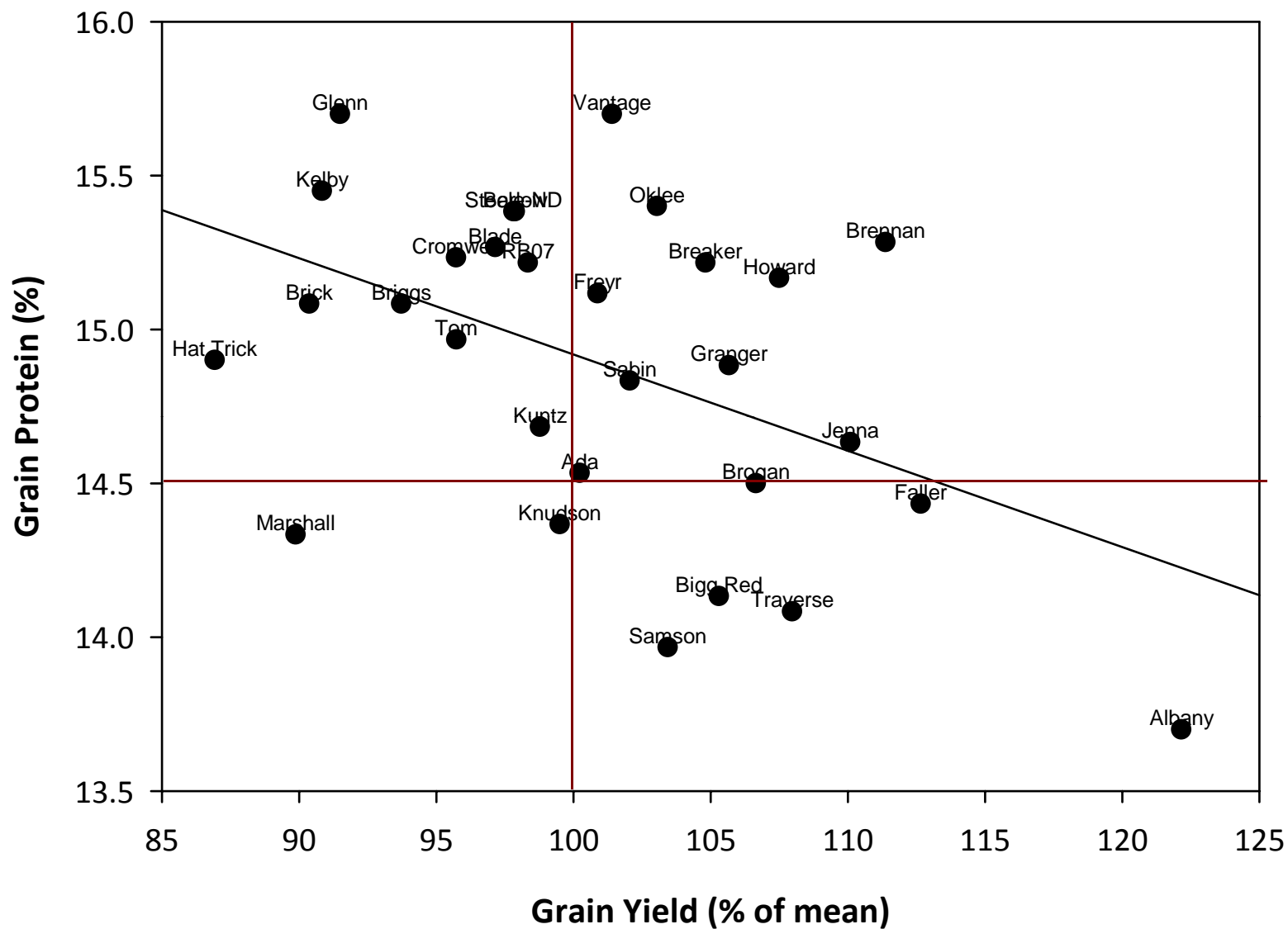


2008-2009 Data – Northern Locations AY1



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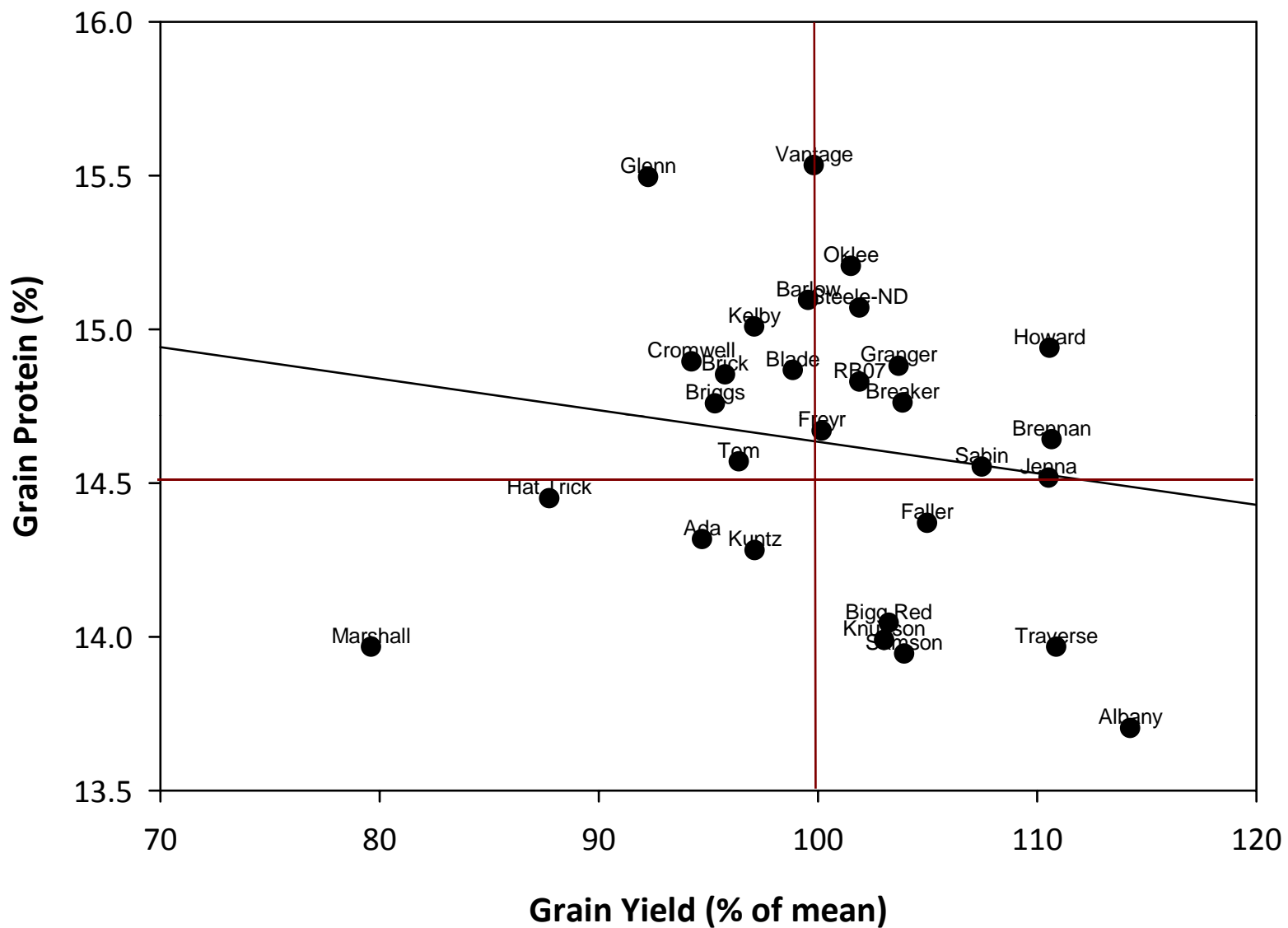
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2009 Data – Southern Locations AY1



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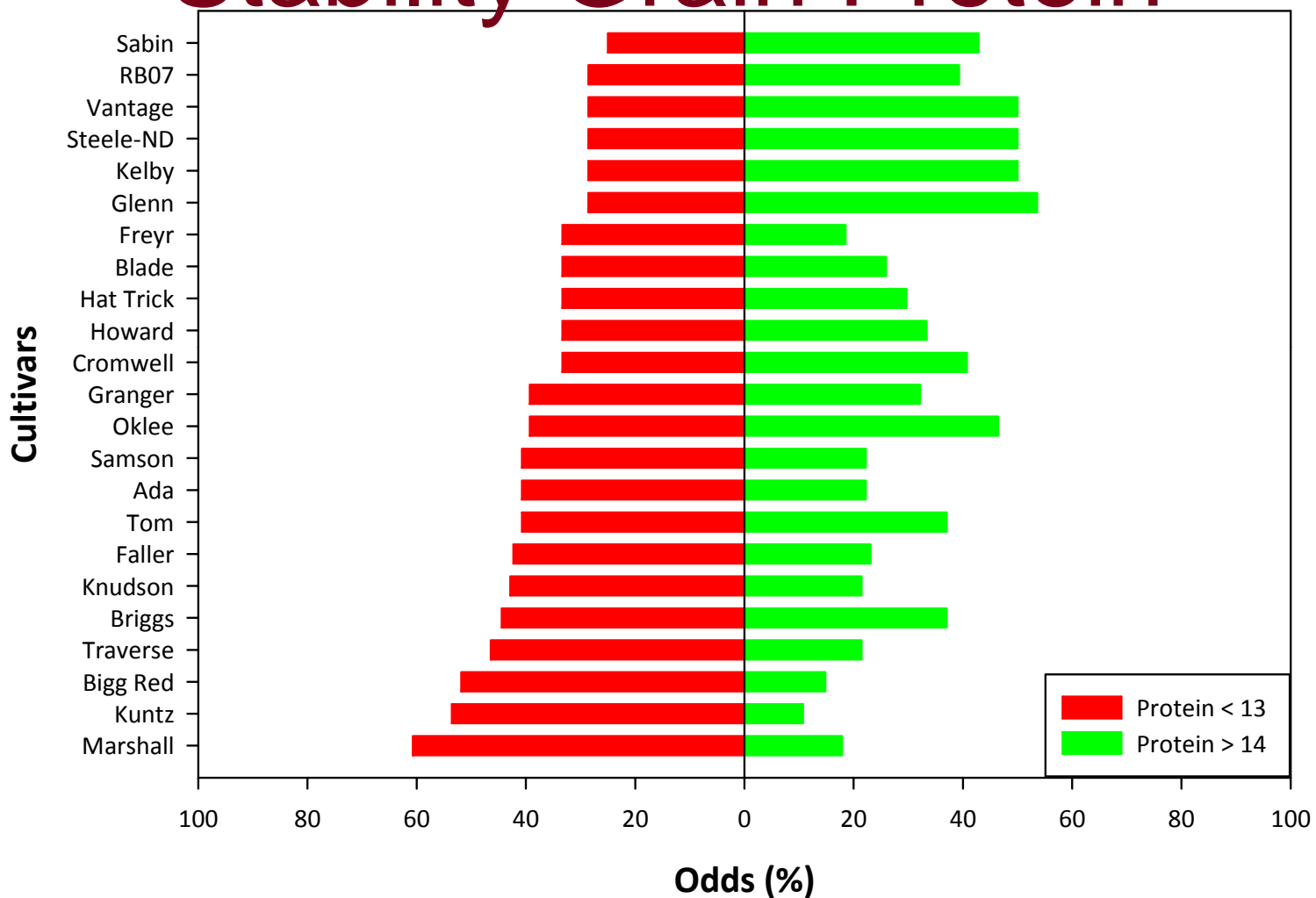


2008-2009 Data – Northern Locations AY1

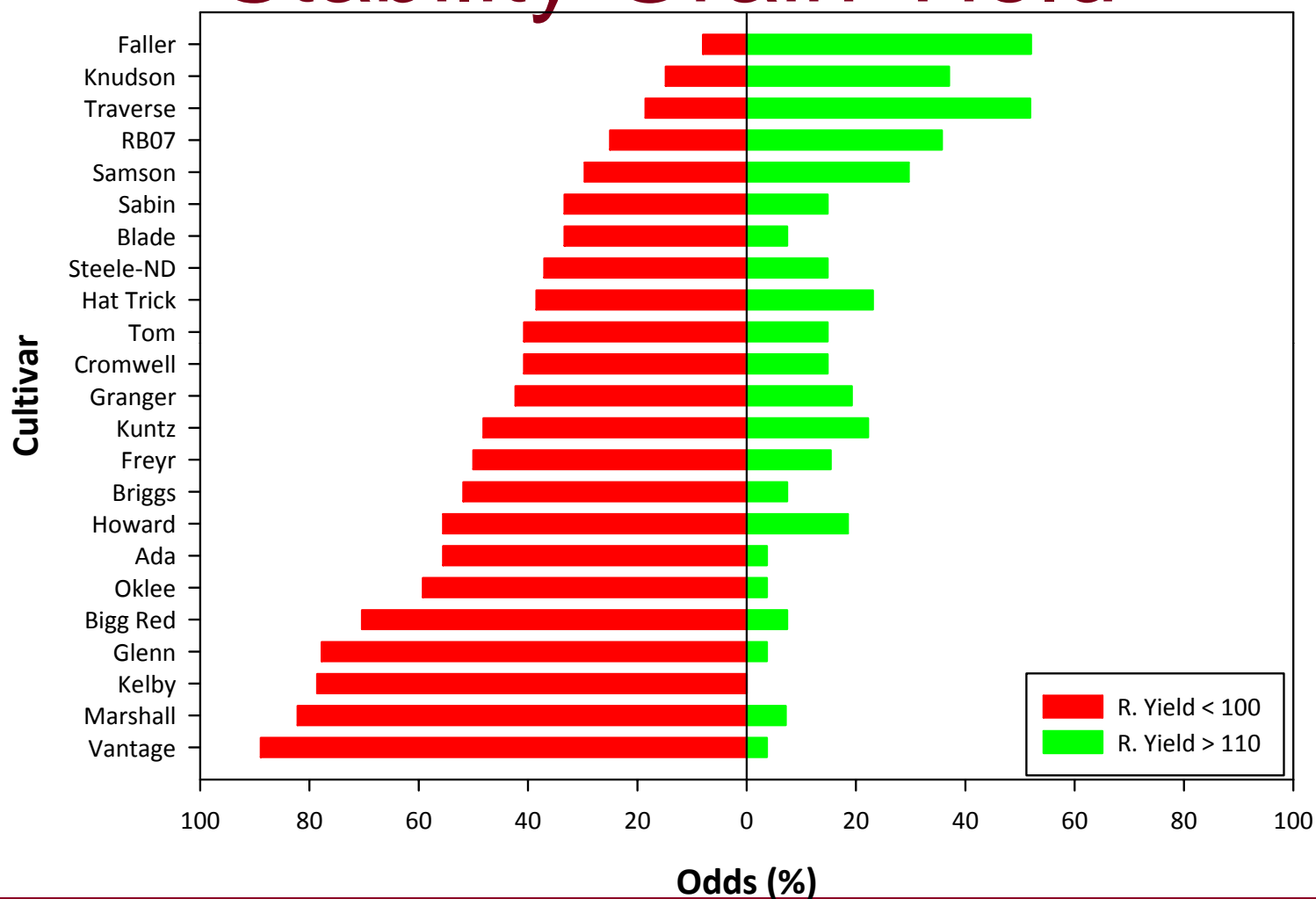


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Stability Grain Protein



Stability Grain Yield



Picks

<i>Variety</i>	<i>Pluses</i>	<i>Minuses</i>
Faller	Yield, FHB	
Glenn	FHB, Quality	Yield, Threshability
Knudson	Adaptation	Grain protein
RB07	Balanced	
Sabin	FHB, Balanced (south)	Straw strength
Tom	FHB, Balanced (north)	Straw strength, (leaf rust=4)



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Honorable Mentions

<i>Variety</i>	<i>Pluses</i>	<i>Minuses</i>
Albany	Yield FHB	Grain protein Baking quality
Breaker	Balanced Straw strength	
Brennan	Balanced	
Briggs	Balanced Adaptation	Straw strength Baking quality
Cromwell	Balanced FHB	Leaf rust
Jenna	Yield	
Samson	Yield	Leaf rust, FHB, PHS
Vantage	Straw Strength Grain Protein	Late(r) maturity



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