



UNIVERSITY OF MINNESOTA | EXTENSION

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

2019 Wheat Variety Selection Prairie Grains Conference

Jim Anderson & Jochum Wiersma

39



10+



59



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 | 2018 Acreage (%) |
|----------------|-----------------|------------------|
| | | |
| Linkert | 2013 | 28.8 |
| Bolles | 2015 | 10.7 |
| Shelly | 2016 | 7.6 |
| Lang-MN | 2017 | 4.7 |



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



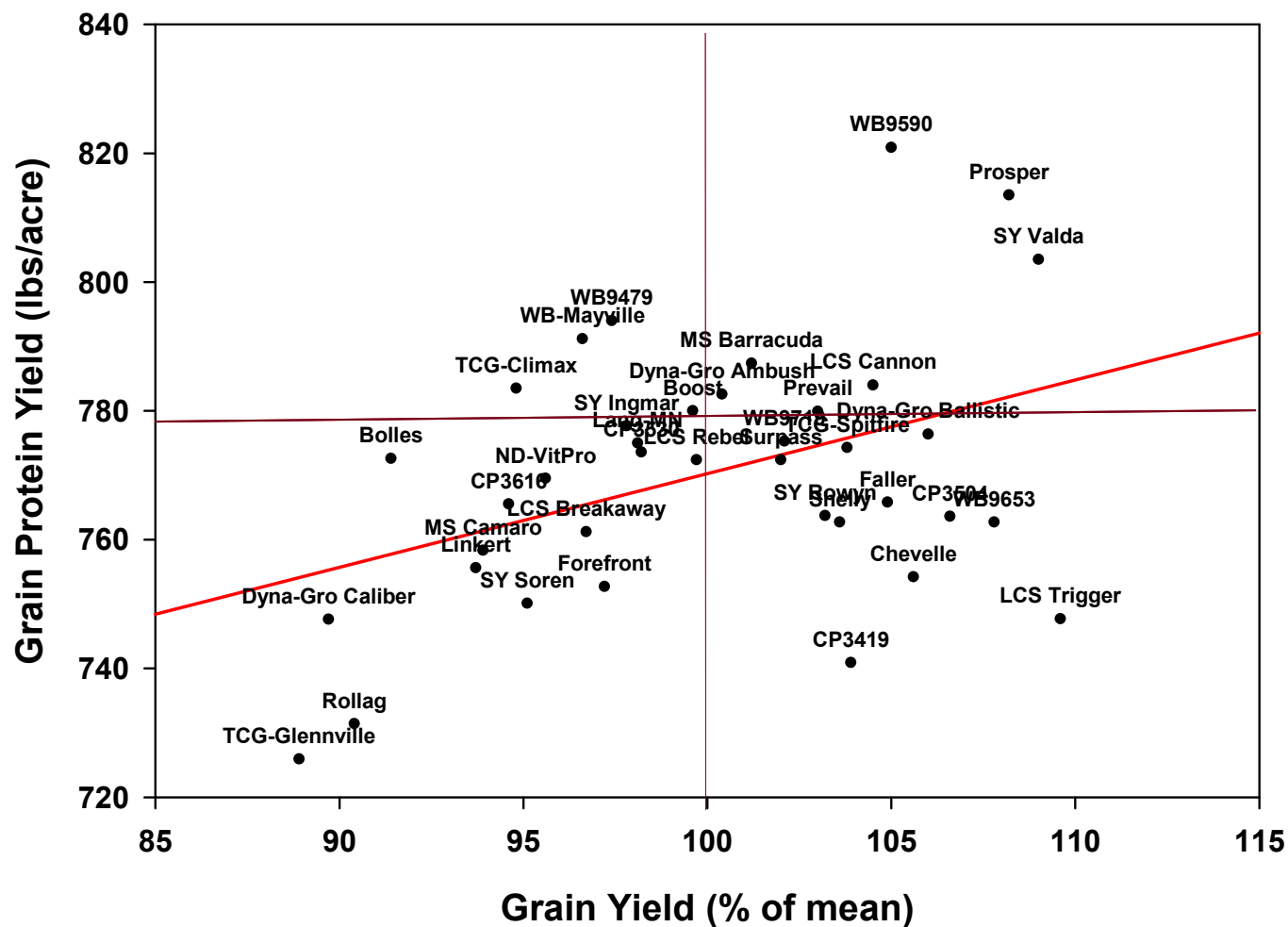
THE NEWEST STUFF (2018)

| Variety | Breeder |
|---------------------------|-------------------------------|
| | |
| Dyna-Gro Ballistic | Dyna-Gro |
| LCS Cannon | Limagrain Cereal Seeds |
| MS Barracuda | Meridian Seeds |
| TCG-Glennville | 21st Century Genetics |



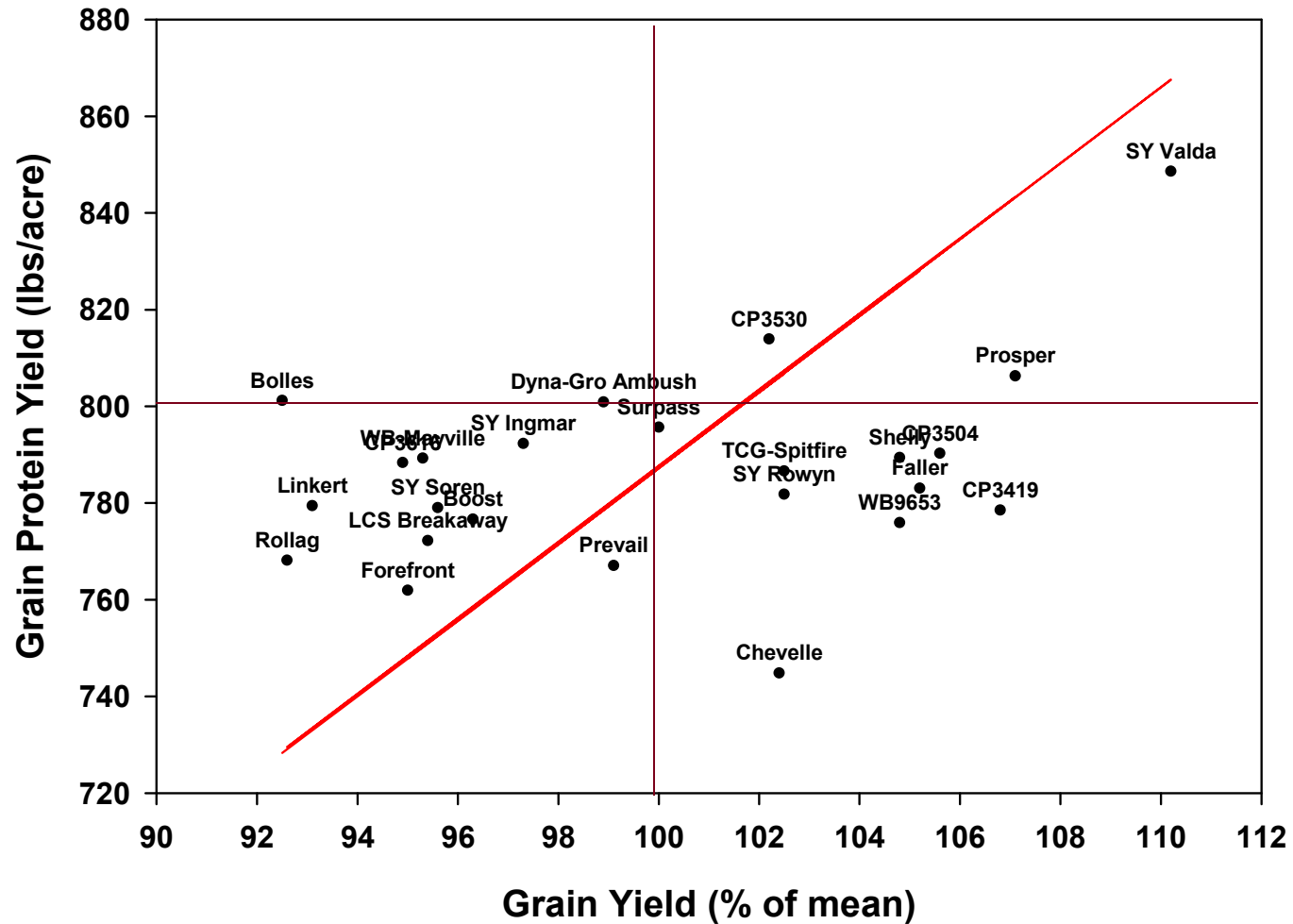
YIELD AND PROTEIN BIPLLOT

(NORTHERN LOCATIONS, 2018 DATA)



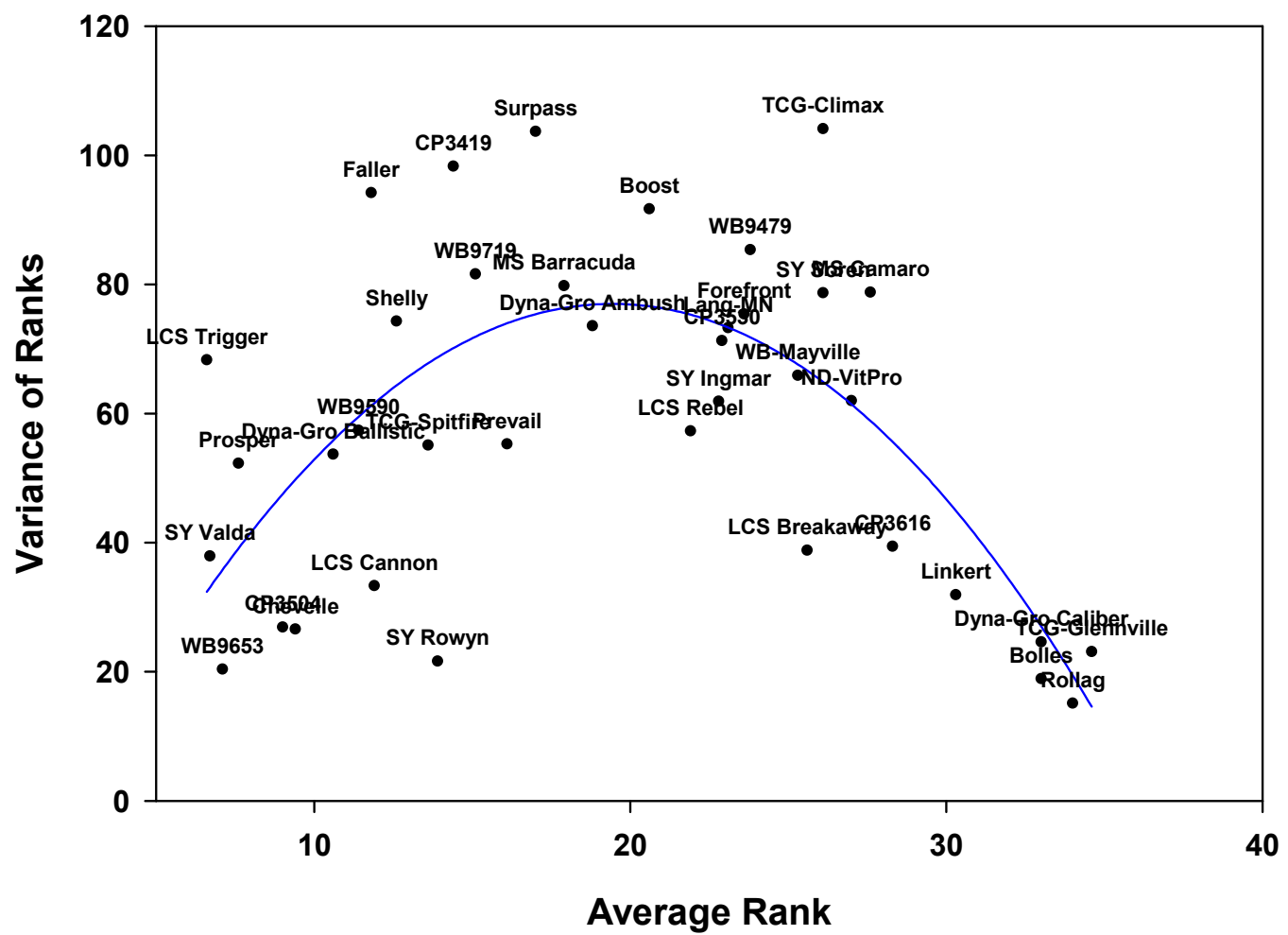
YIELD AND PROTEIN BIPLLOT

(NORTHERN LOCATIONS 2016-2018)



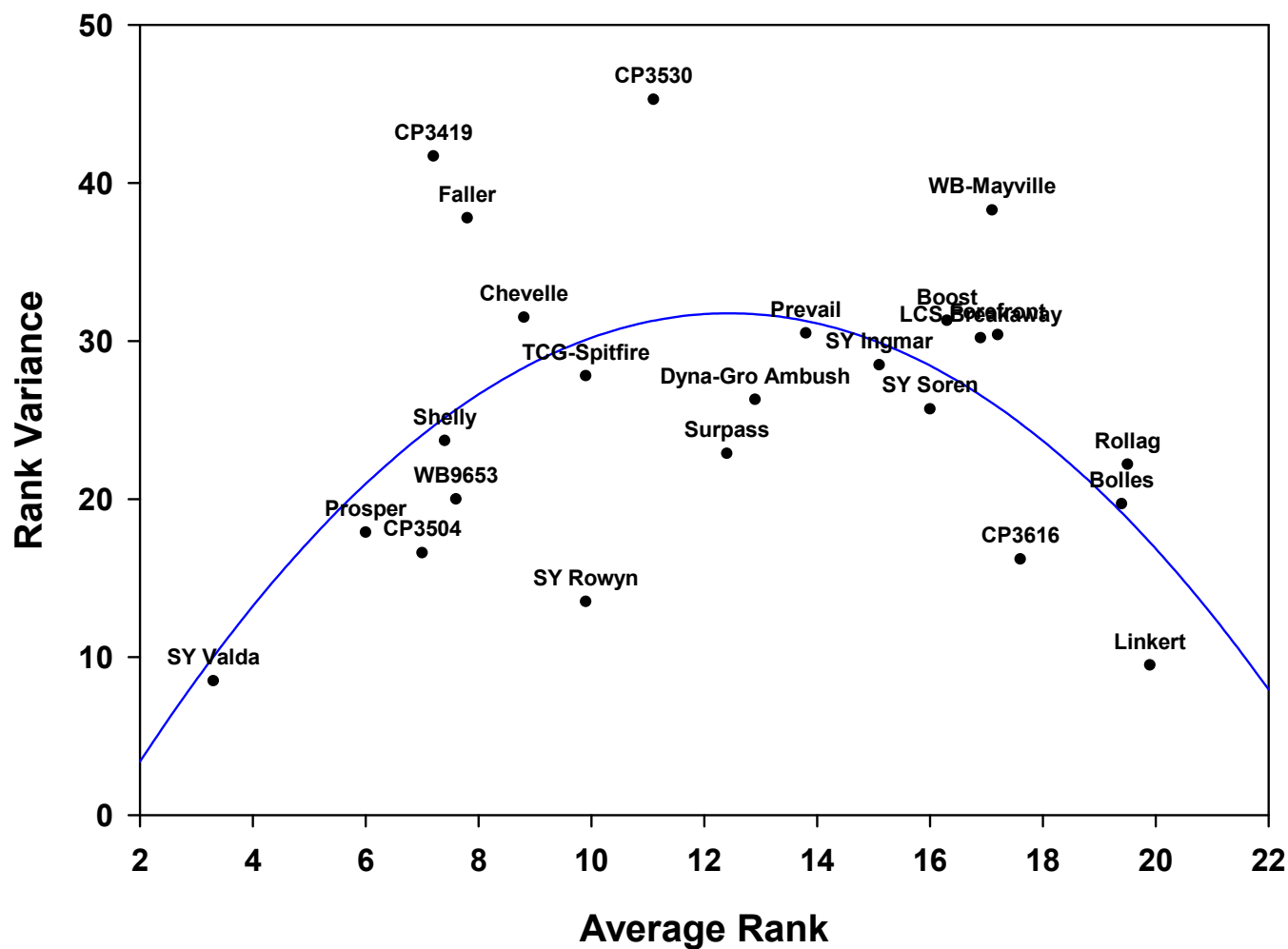
RANK STABILITY

(NORTHERN LOCATIONS, 2018)



RANK STABILITY

(NORTHERN LOCATIONS, 2016-2018)



KINDASORTA PICKS

| VARIETY | PLUSES | MINUSES |
|------------------|----------------------|----------------|
| | | |
| Bolles | GP | TWT |
| CP3419 | YLD | GP, BLS |
| CP3530 | YLD/Balanced | |
| Lang-MN | Balanced, FHB | LD |
| Linkert | Balanced, LD | |
| Shelly | YLD | GP, LD |
| SY Ingmar | Balanced, BLS | |
| SY Valda | YLD, BLS | LD |



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 |
| MN10201-4-A | 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 |
| MN10201-4-A | 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

