

2025 IHARF Agronomy Update

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Where will we go today?

- Establishing Nitrogen (N) Fertilizer & Seeding Rate Recommendations for Composite Yellow Mustard in Saskatchewan (SFP)
- Field Pea Response to Various Phosphorus (P) Fertilizer Forms and Placement Options (ADOPT)
- Canola & Wheat Response to Side-Banded Enhanced Efficiency N Fertilizer Products (SaskOilseeds/ADOPT/SFP)
- PGR Products & Mixes to Improve Crop Safety and Efficacy in Barley 2.0 (SaskBarley-ADOPT)
- Optimum Chickpea Seeding Practices (SaskPulse)



Establishing Nitrogen Fertilizer & Seeding Rate Recommendations for Composite Yellow Mustard in Saskatchewan (SFP)



Establishing Nitrogen & Seeding Rate Recommendations for Composite Yield Mustard – Treatments & Data Collection

Objective: To update recommendations for SK mustard growers by establishing optimal N rates and plant densities for composite yellow mustard, relative to open-pollinated varieties

Locations: Indian Head, Redvers, & Swift Current (lead site)

Design: 2 separate RCBD trials with 2 varieties x 7 nitrogen levels x 5 seeding rates

Varieties:

- 1) AAC Yellow 80 (composite)
- 2) Andante (open-pollinated)

Nitrogen Rates

- 1) Soil N + PKS fert
- 2) 60 lb N/ac
- 3) 80 lb N/ac
- 4) 100 lb N/ac
- 5) 120 lb N/ac
- 6) 140 lb N/ac
- 7) 160 lb N/ac

Seeding Rates

- 1) 10 seeds/ft²
- 2) 14 seeds/ft²
- 3) 18 seeds/ft²
- 4) 22 seeds/ft²
- 5) 26 seeds/ft²

Data Collection

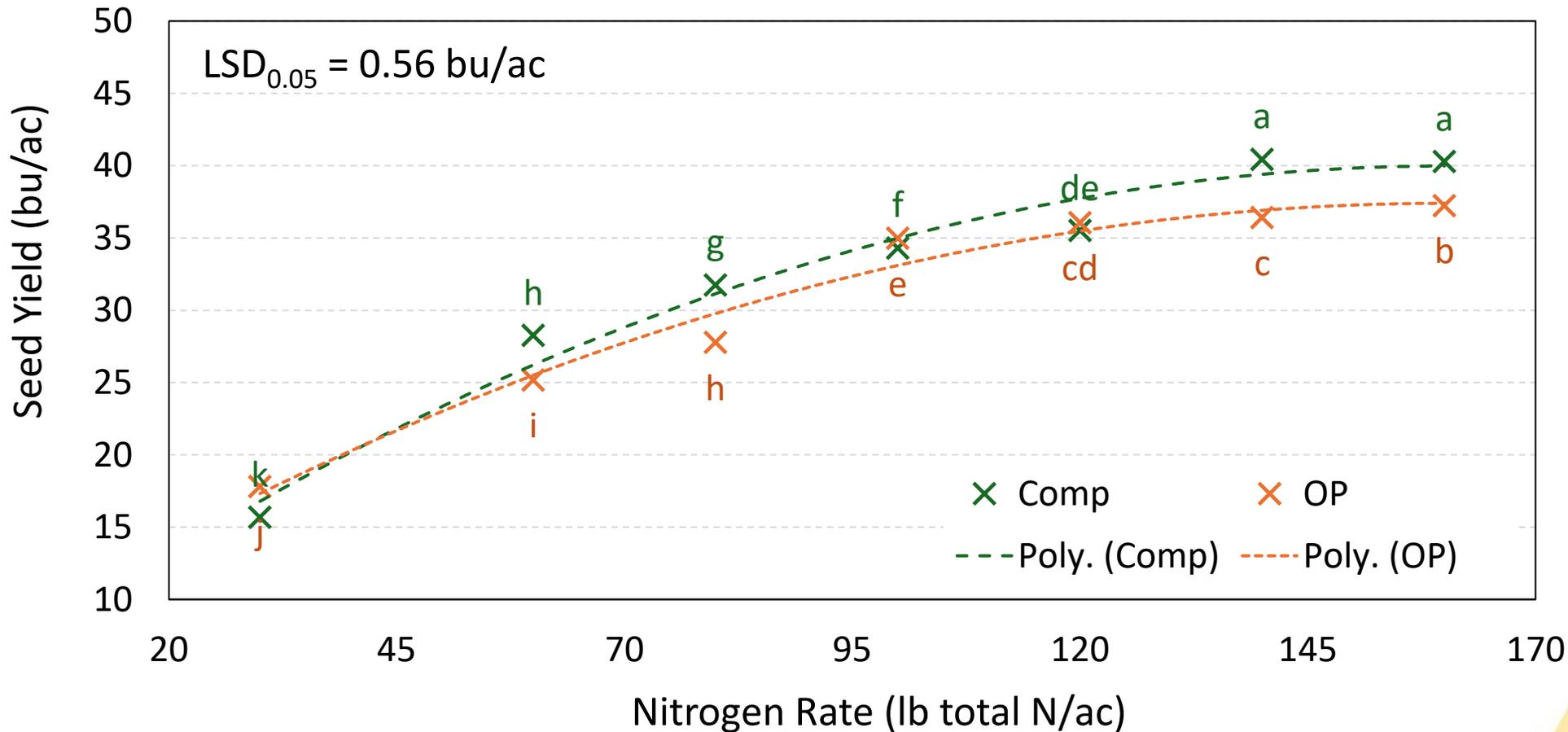
- 1) Plant Densities
- 2) Vigor Ratings
- 3) Height
- 4) Maturity
- 5) Seed Yield



Feature	Open-Pollinated (OP) Variety	Composite Variety	Hybrid Variety
Genetic Composition	Broad genetic base with natural variation	Broad genetic base, but specifically selected for traits	Narrow genetic base (cross between two distinct inbred lines)
Breeding Process	Natural pollination, selection over generations	Controlled intercrossing of multiple plant selections	Controlled cross-pollination between two parent lines
Genetic Diversity	High diversity due to natural pollination	High diversity due to mixing multiple plant types	Low diversity, uniform genetics in the F1 generation
Uniformity	Lower uniformity, individual plants can vary	More uniform than OP, but less than hybrid	Very uniform in F1 generation
Performance	Stable in suitable environments, but may lack vigor	Generally stable, with traits selected for adaptation	High performance, especially in yield and disease resistance (hybrid vigor)
Hybrid Vigor	No hybrid vigor, as plants are naturally selected	No hybrid vigor, but can show better adaptability	High hybrid vigor, resulting in superior performance
Maintenance	Can be maintained through natural selection and saving seeds	Maintained by continued random mating and selection	Requires repeated cross between parent lines each season
Seed Saving	Seeds can be saved reliably and will produce true-to-type plants	Seeds can be saved, but genetic diversity means results may vary	Seeds cannot be saved reliably as F2 generation may not show hybrid vigor
Stability	Stable over time, but can have genetic drift or variations	Stable over time if managed well, but more genetic diversity than hybrids	Less stable over multiple generations, performance may decrease
Adaptability	Well-suited to a range of conditions if properly selected	Adaptable to diverse conditions, especially with continued selection	Generally, performs best in specific conditions suited to hybrid vigor
Seed Cost	Lower cost, as no specific parental cross required	Moderate cost, as multiple parents are involved	Higher cost due to need for specific parent crosses

Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Nitrogen Rate (Indian Head 2023)

4.7" May-Aug precipitation (49% of average)

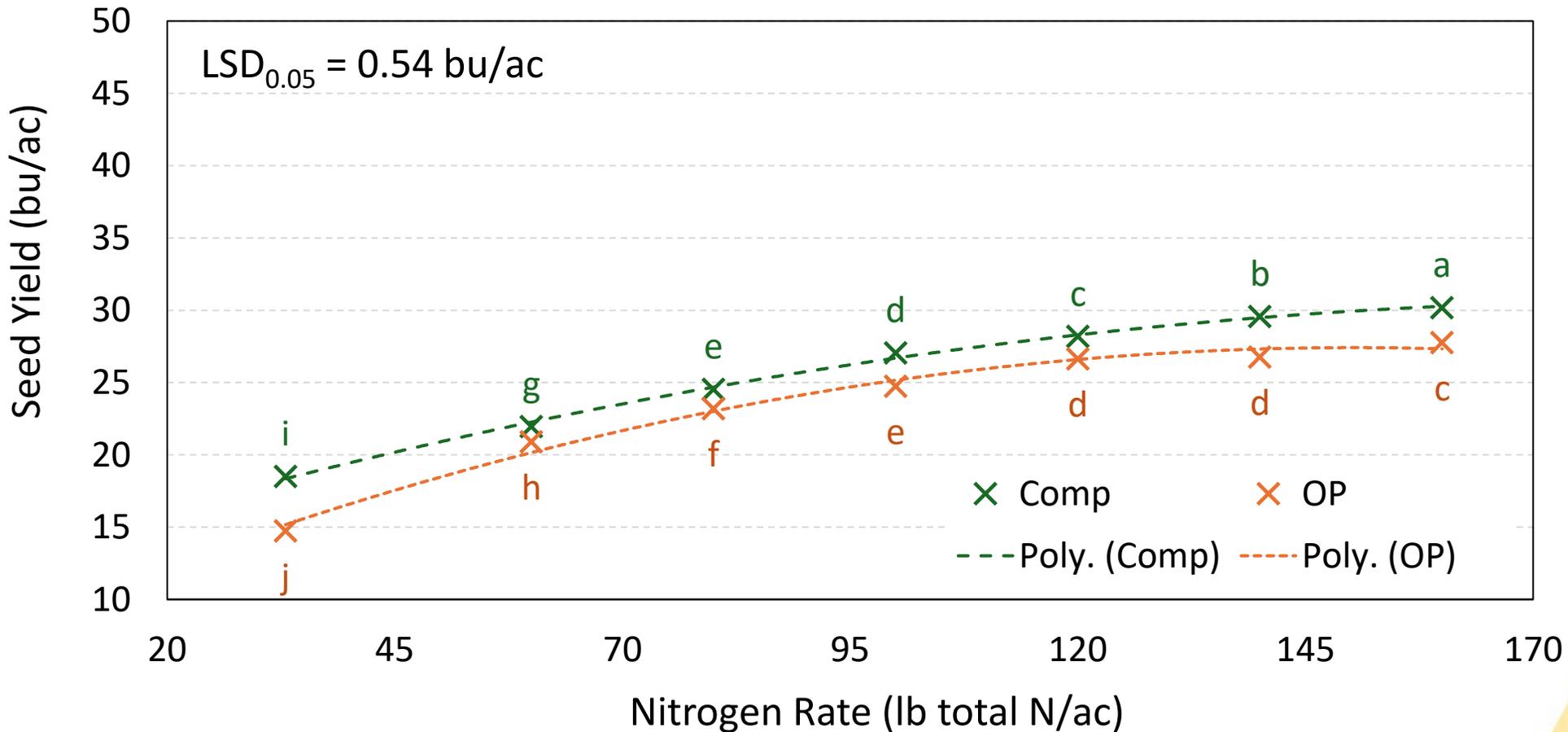


VAR	BU/AC
COMP	32.3 A (+5%)
OP	30.8 B

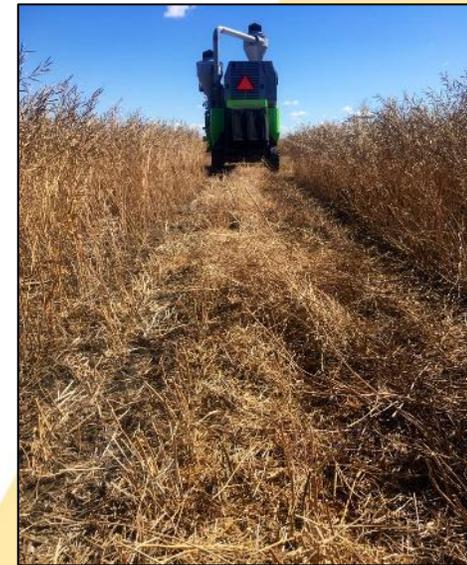


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Nitrogen Rate (Indian Head 2024)

9.8" May-Aug precipitation (102% of average)

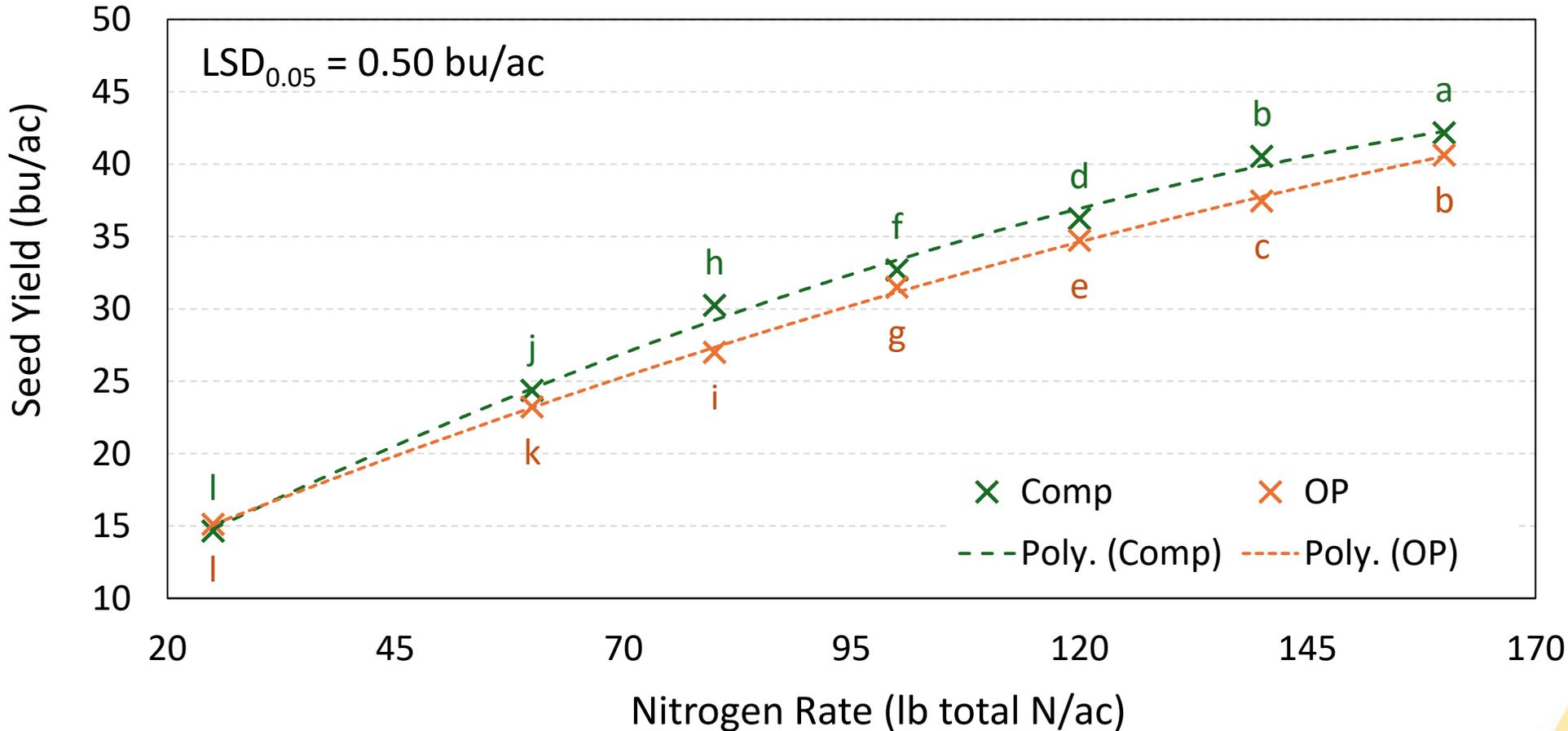


VAR	BU/AC
COMP	25.7 A (+9%)
OP	23.5 B

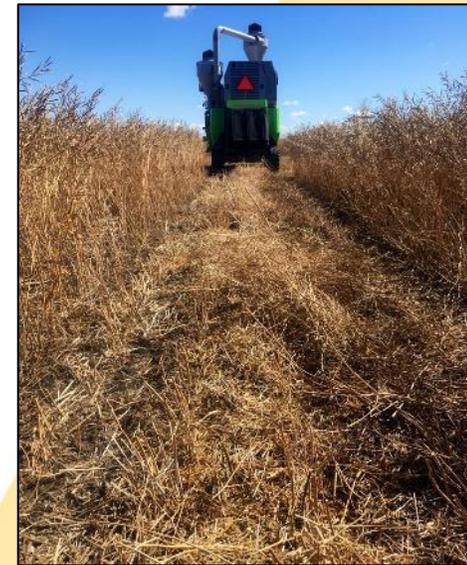


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Nitrogen Rate (Indian Head 2025)

5.4" May-Aug precipitation (56% of average)

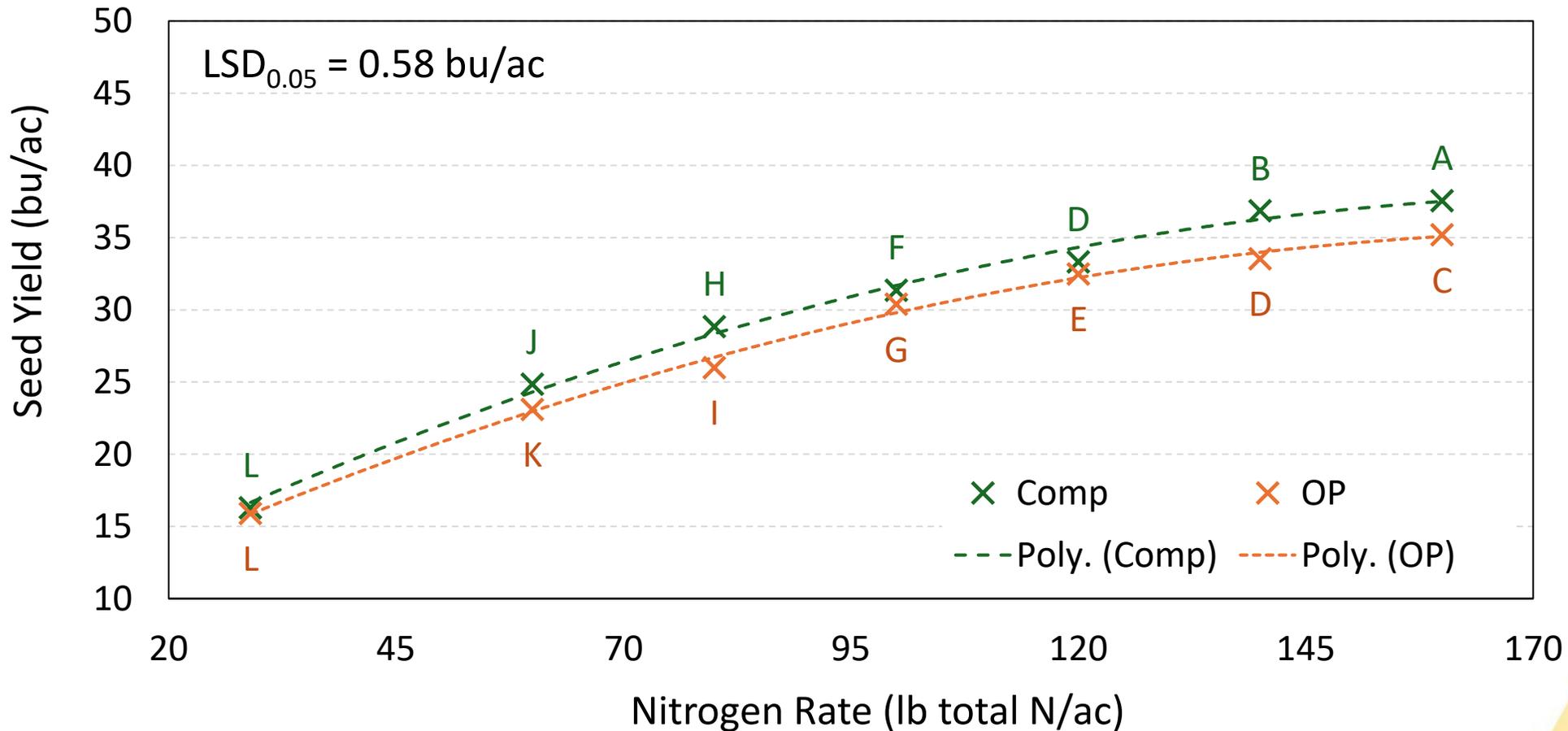


VAR	BU/AC
COMP	31.6 A (+5%)
OP	30.0 B

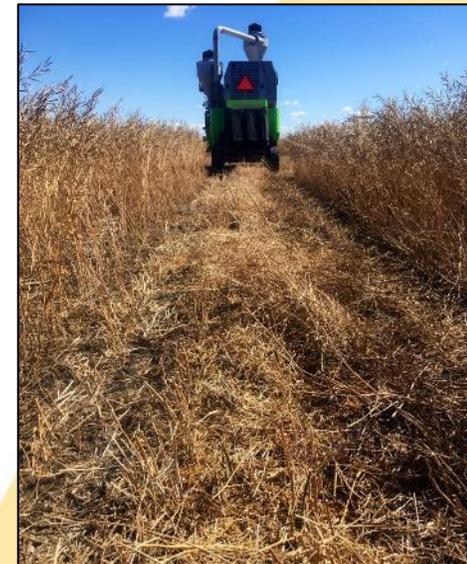


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Nitrogen Rate (Indian Head)

Three Year Average (2023-25)

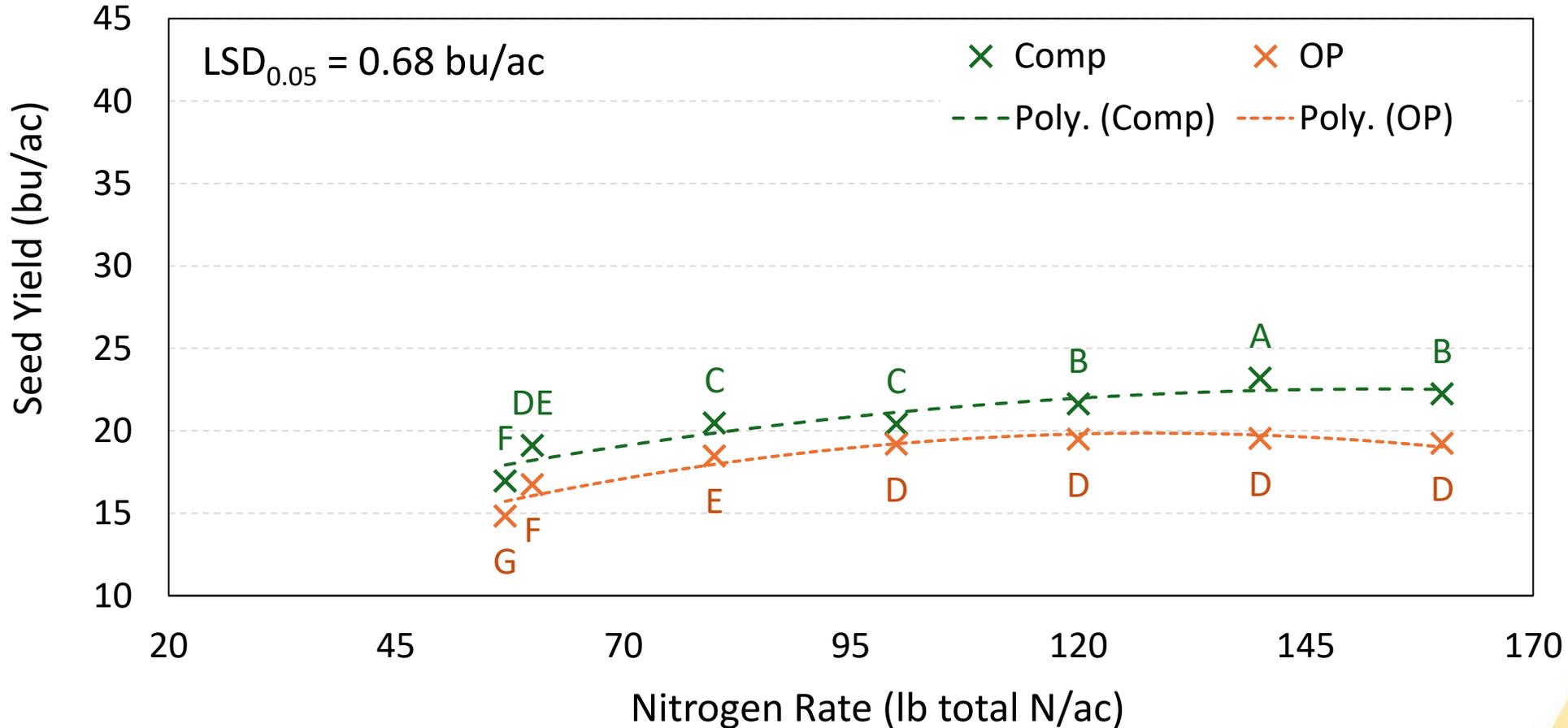


VAR	BU/AC
COMP	29.9 A (+6%)
OP	28.1 B



Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Nitrogen Rate (Swift Current)

Three Year Average (2023-25)

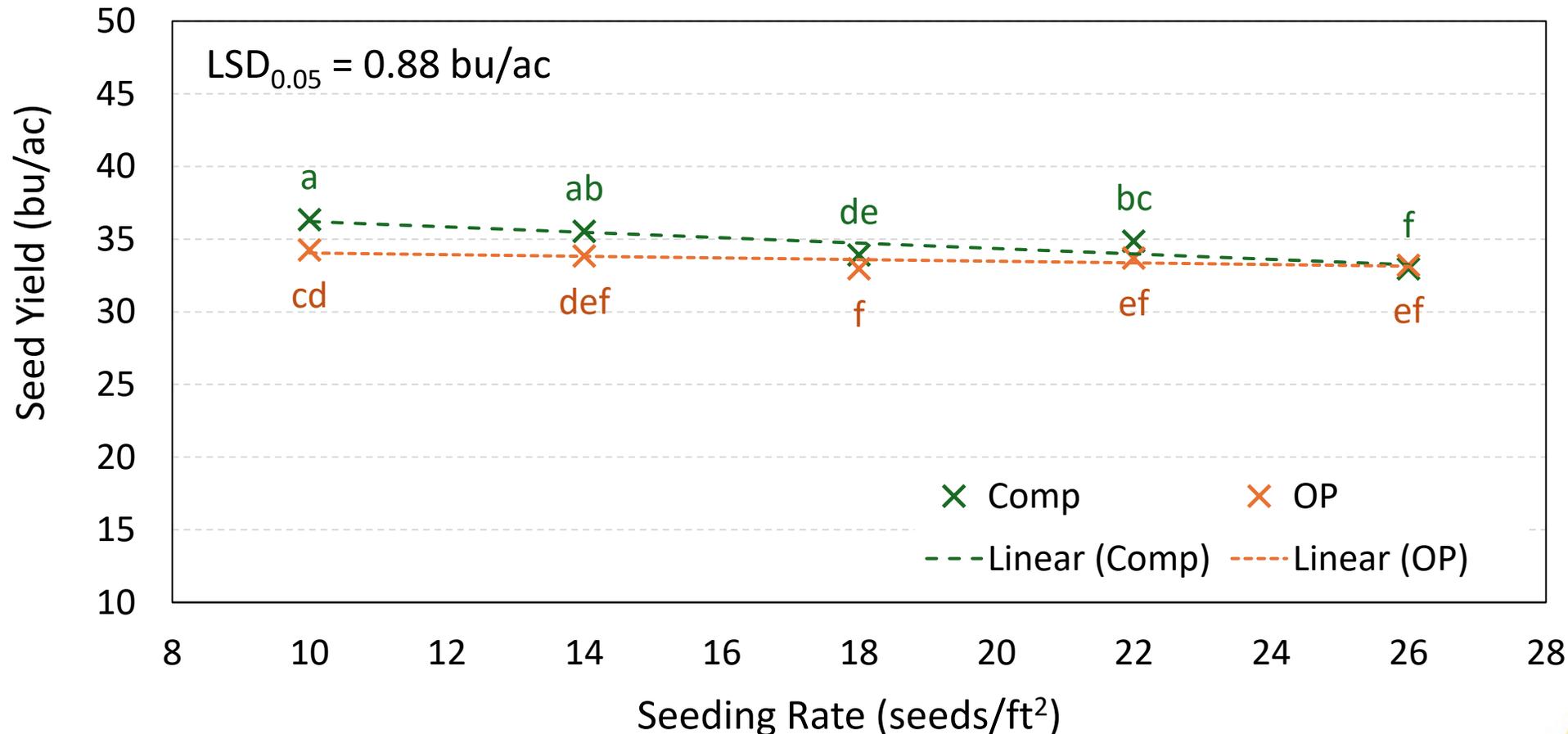


VAR	BU/AC
COMP	20.6 A (+13%)
OP	18.2 B

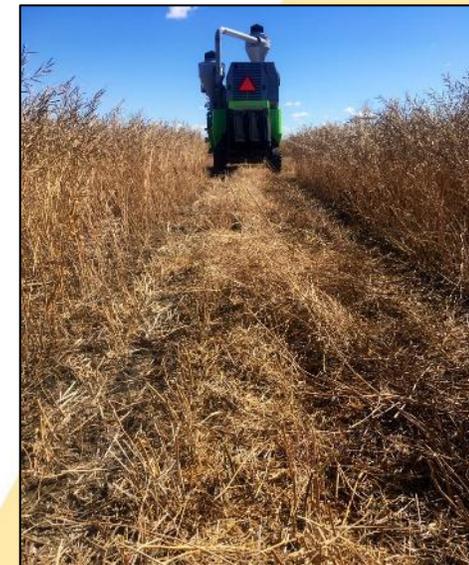


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Seeding Rate (Indian Head 2023)

4.7" May-Aug precipitation (49% of average)

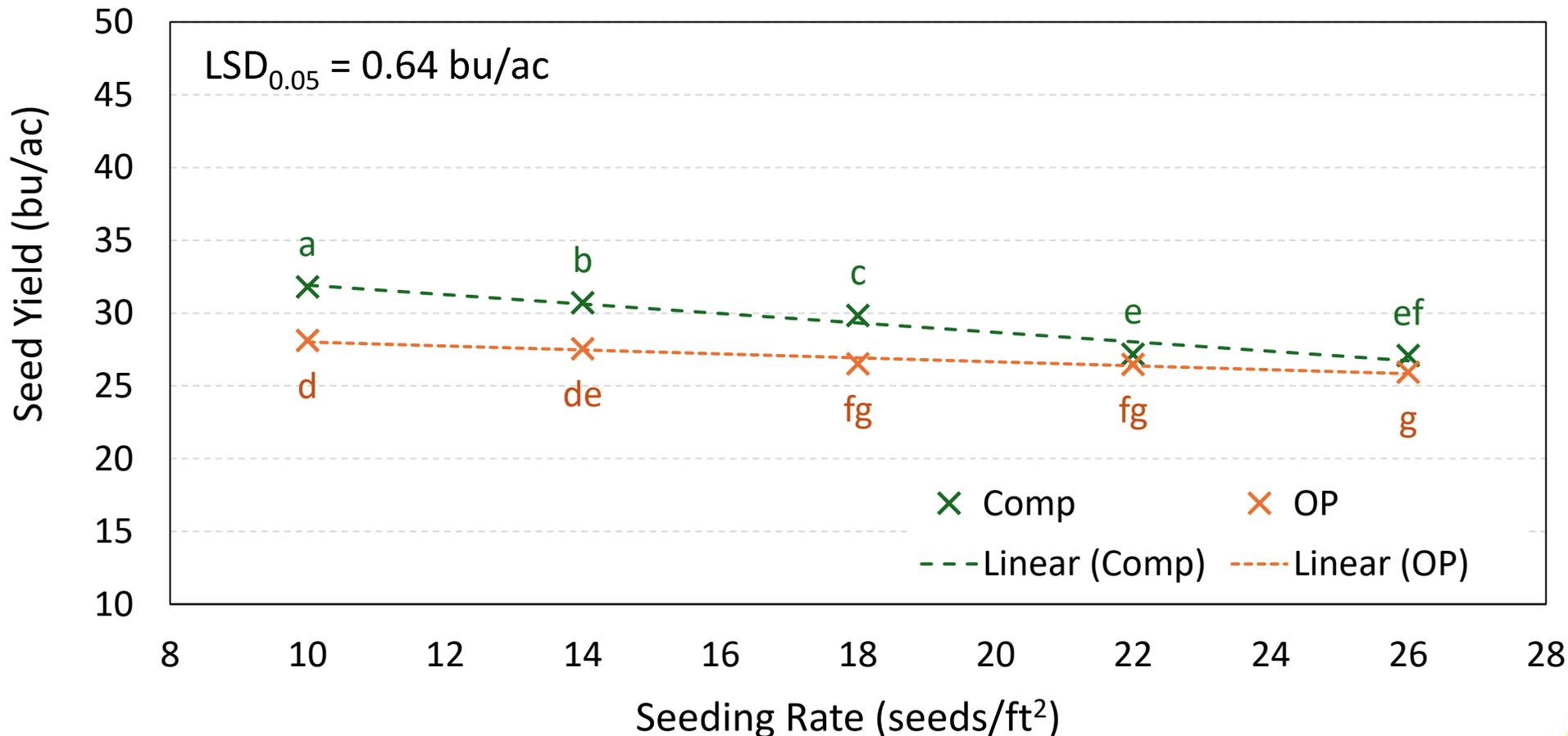


VAR	BU/AC
COMP	34.7 A (+3%)
OP	33.6 B

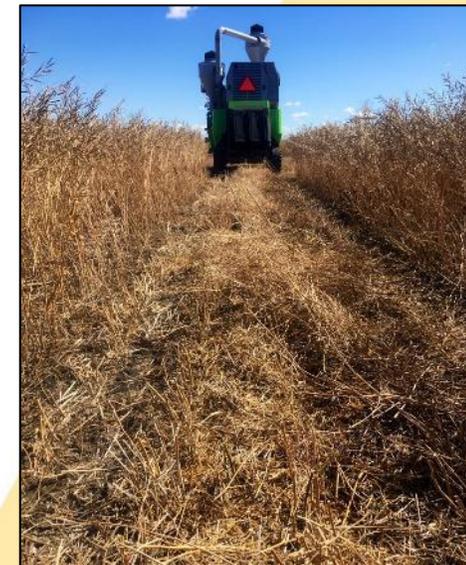


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Seeding Rate (Indian Head 2024)

9.8" May-Aug precipitation (102% of average)

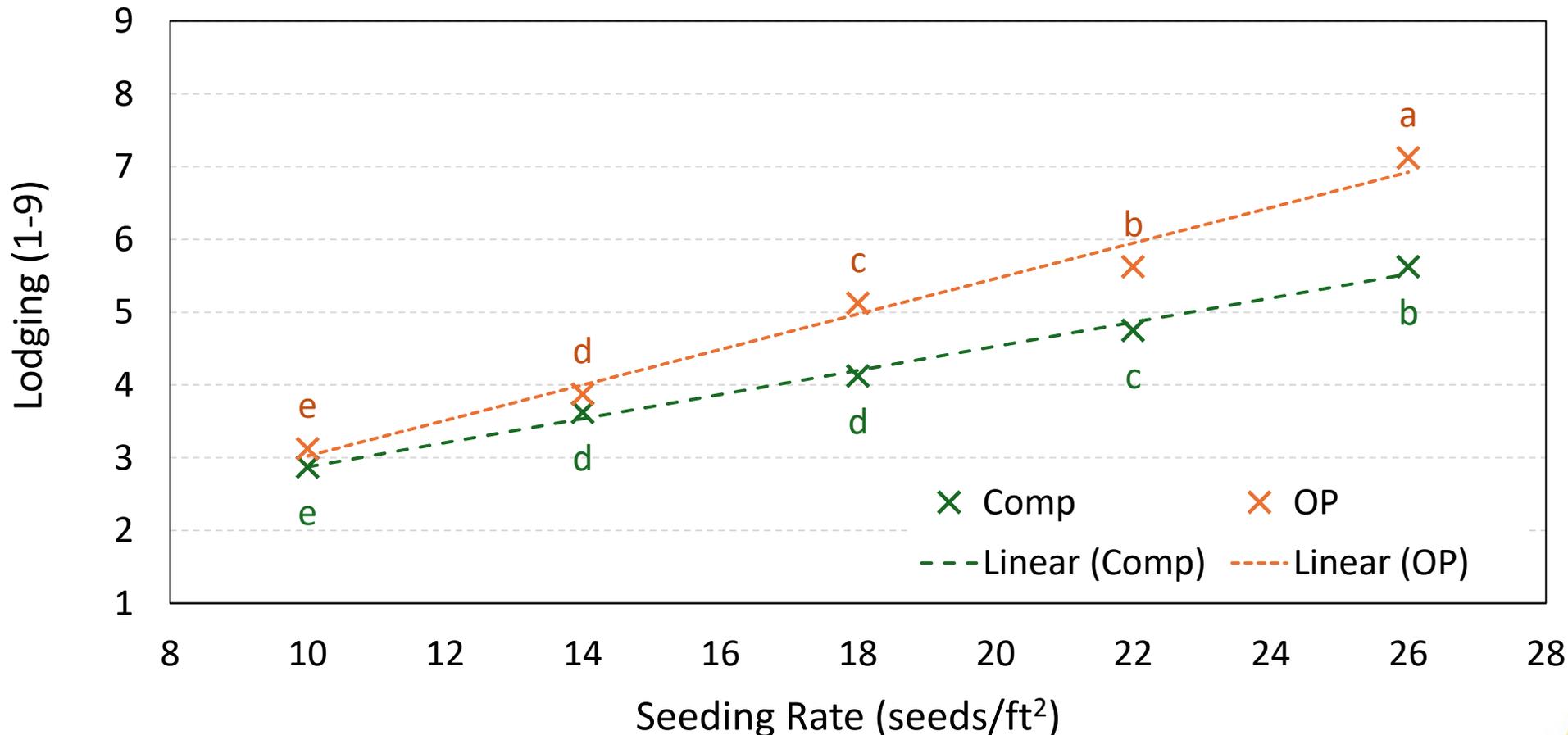


VAR	BU/AC
COMP	29.3 A (+9%)
OP	26.9 B

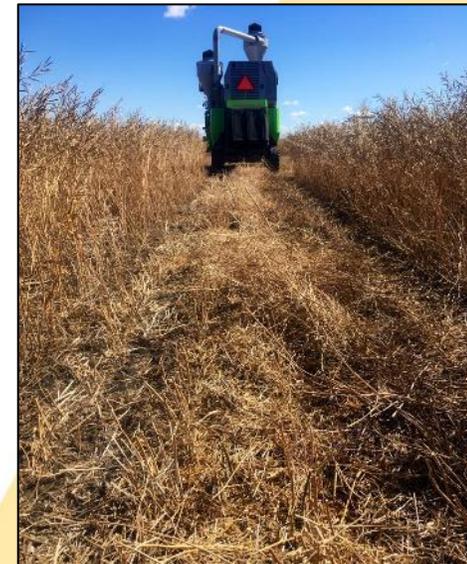


Composite vs Open Pollinated Yellow Mustard Lodging Response to Seeding Rate (Indian Head 2024)

9.8" May-Aug precipitation (102% of average)

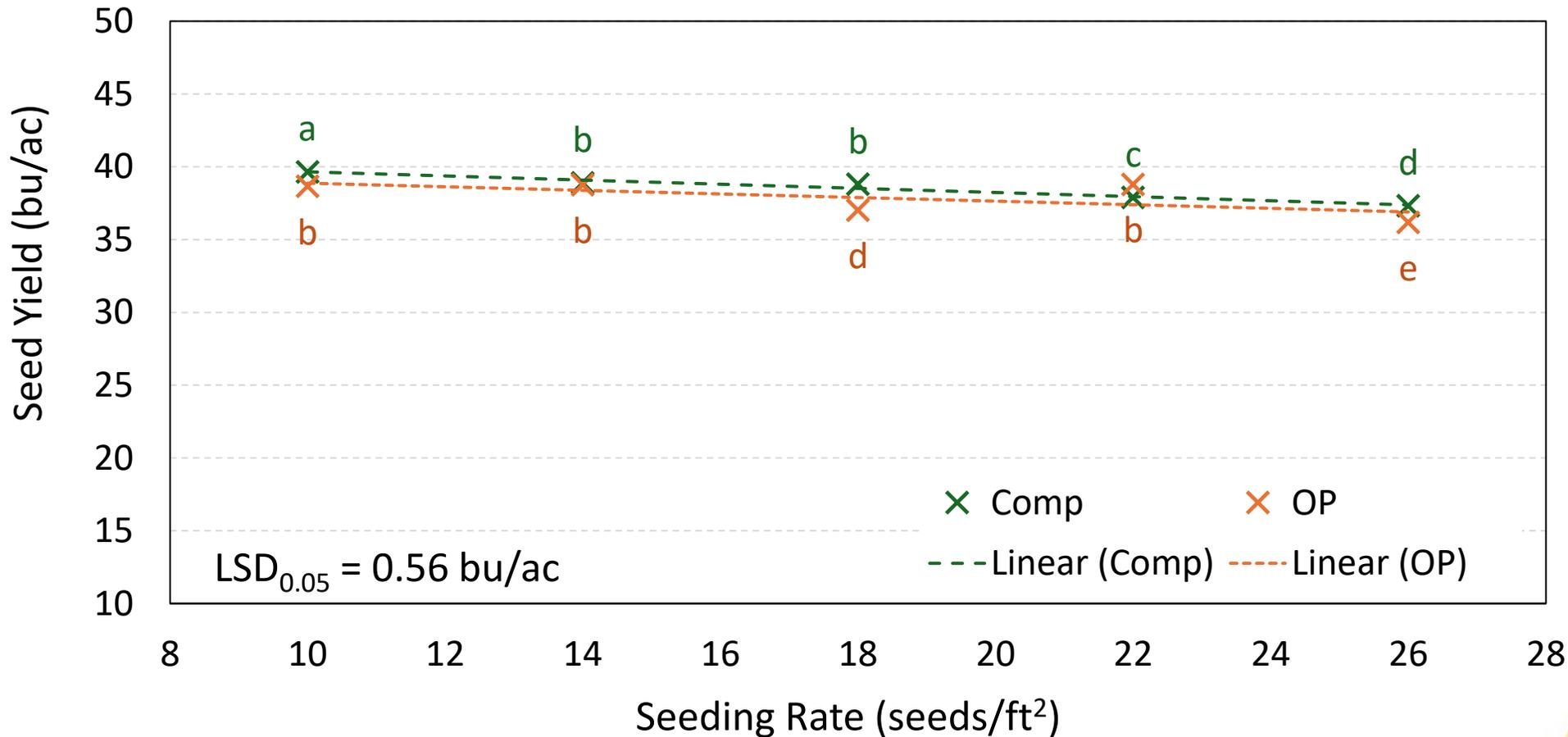


VAR	BU/AC
COMP	4.2 B
OP	5.0 A

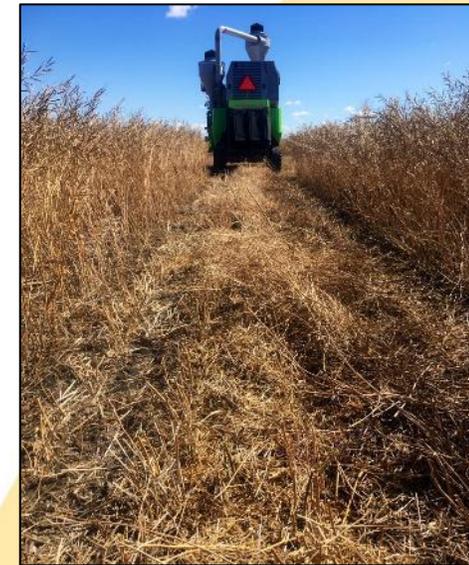


Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Seeding Rate (Indian Head 2025)

5.4" May-Aug precipitation (56% of average)

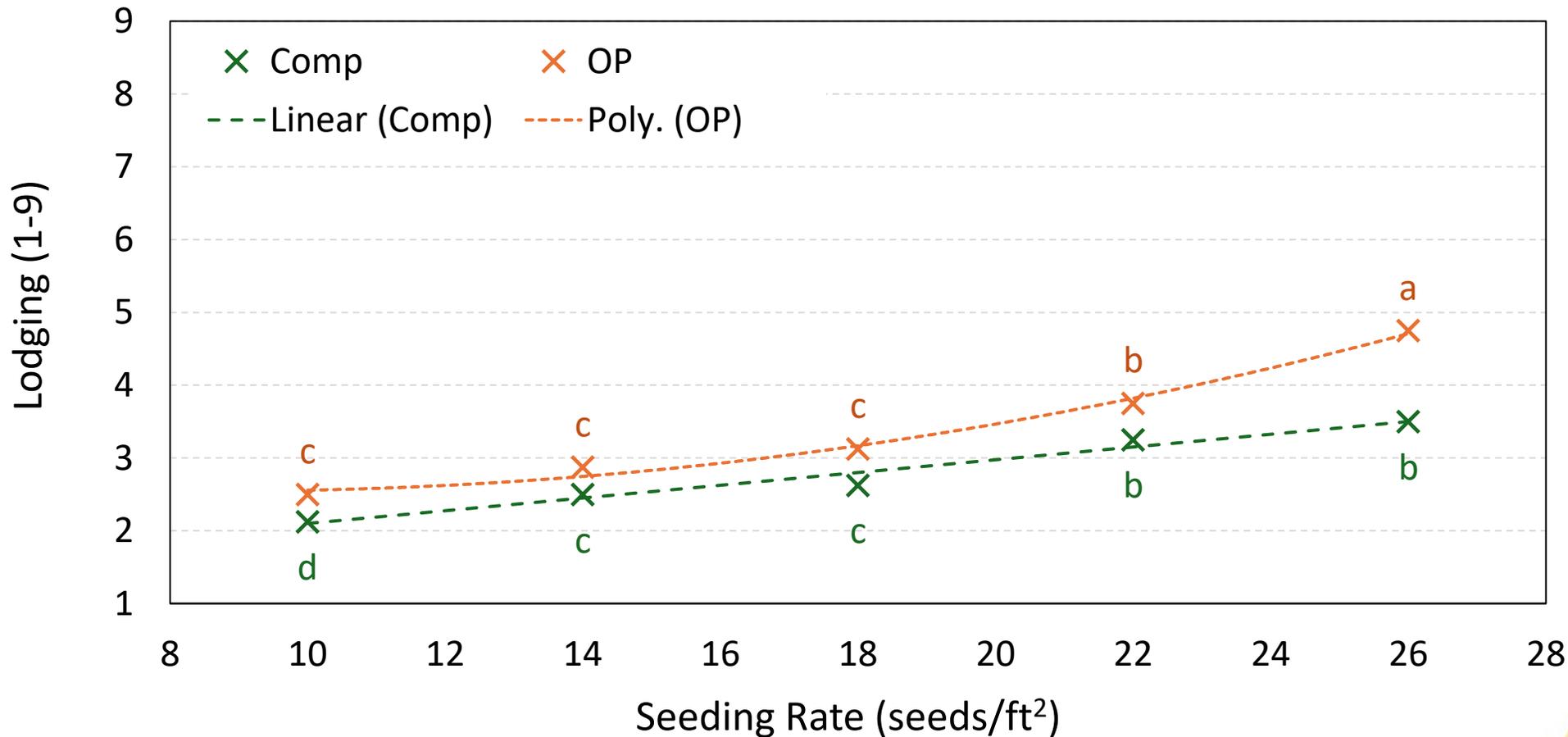


VAR	BU/AC
COMP	38.5 A (+2%)
OP	37.9 A

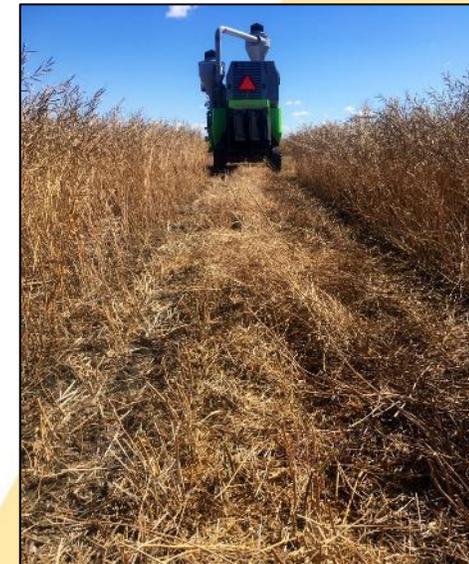


Composite vs Open Pollinated Yellow Mustard Lodging Response to Seeding Rate (Indian Head 2025)

5.4" May-Aug precipitation (56% of average)

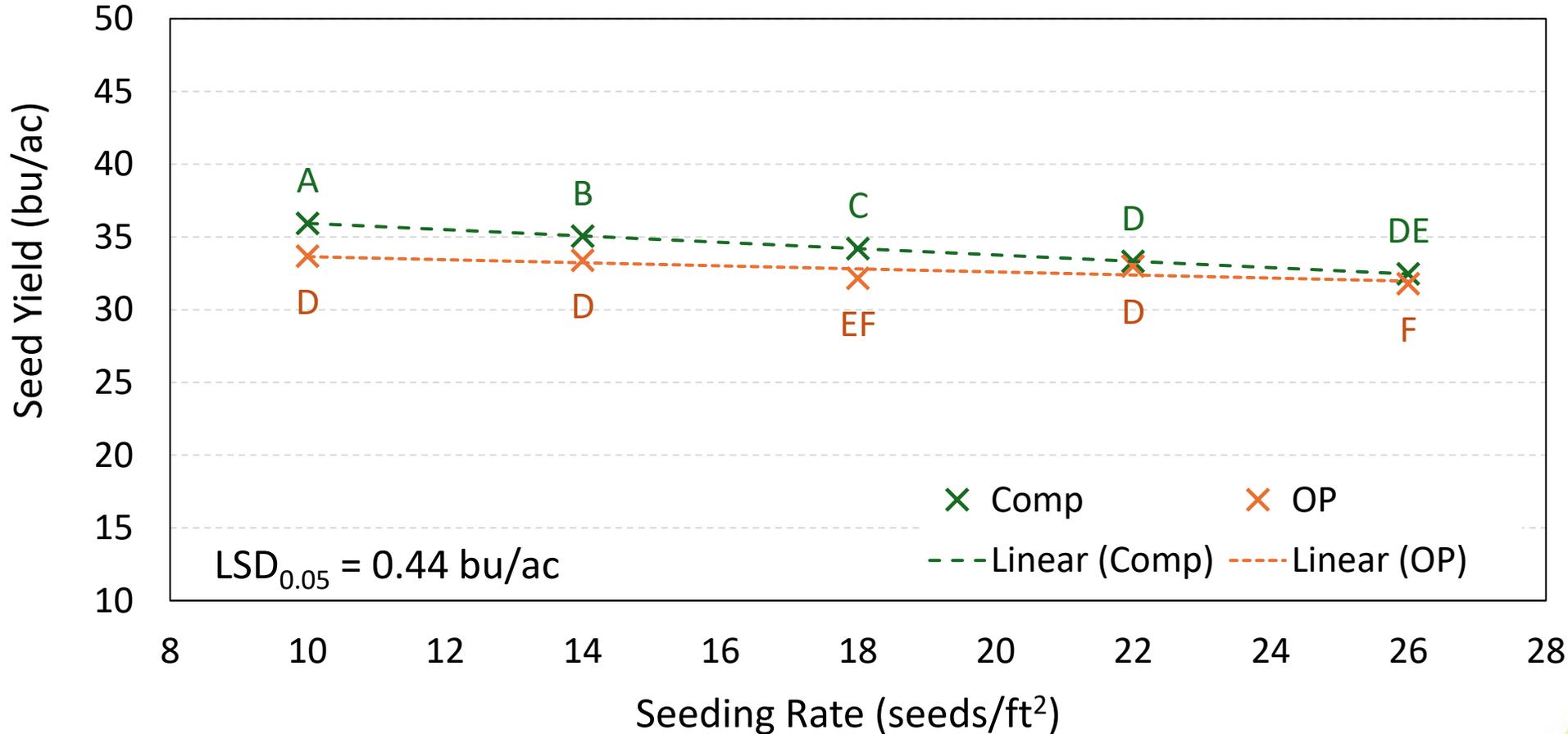


VAR	BU/AC
COMP	2.8 B
OP	3.4 A



Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Seeding Rate (Indian Head)

Three Year Average (2023-25)

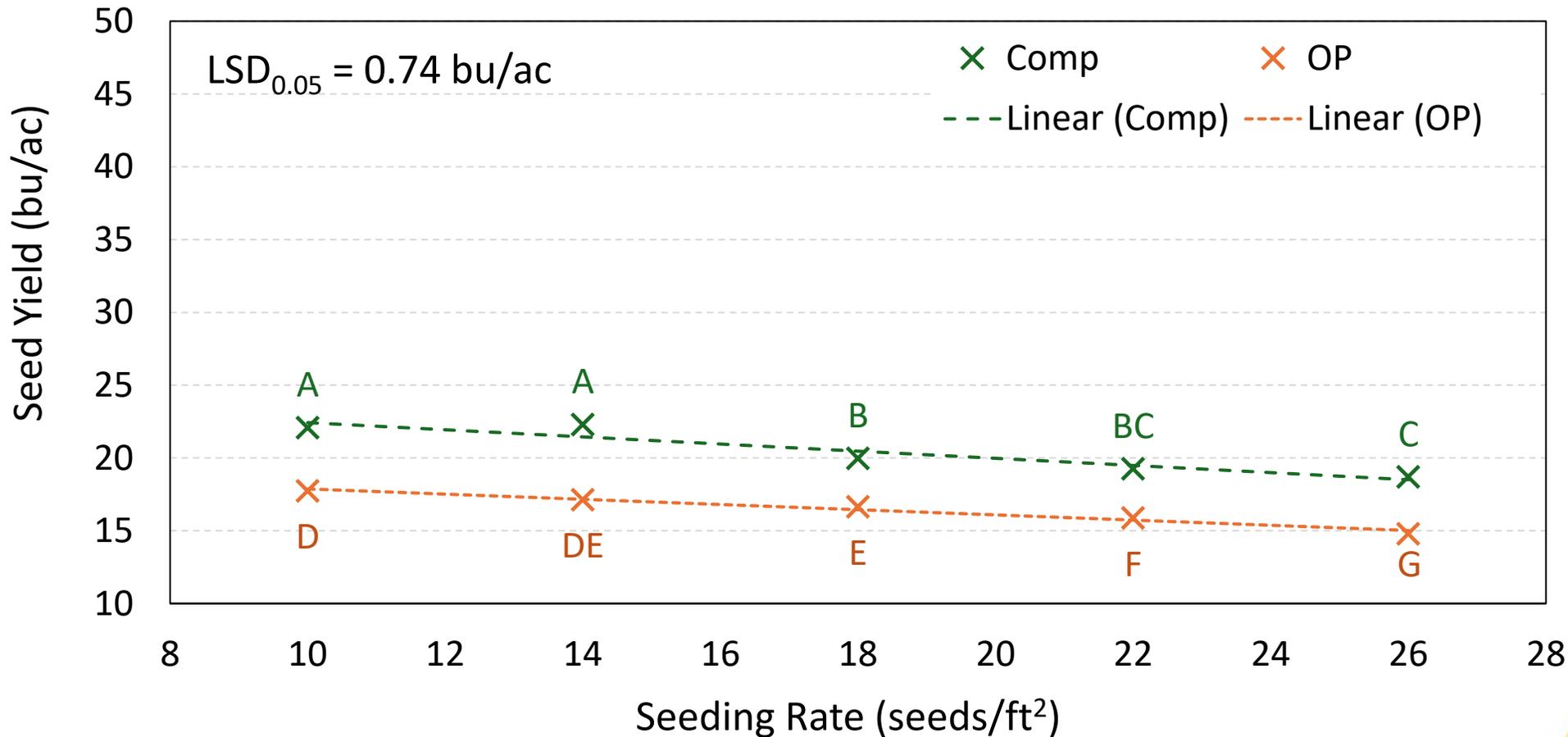


VAR	BU/AC
COMP	34.2 A (+4%)
OP	32.8 B



Composite vs Open Pollinated Yellow Mustard Seed Yield Response to Seeding Rate (Swift Current)

Three Year Average (2023-25)

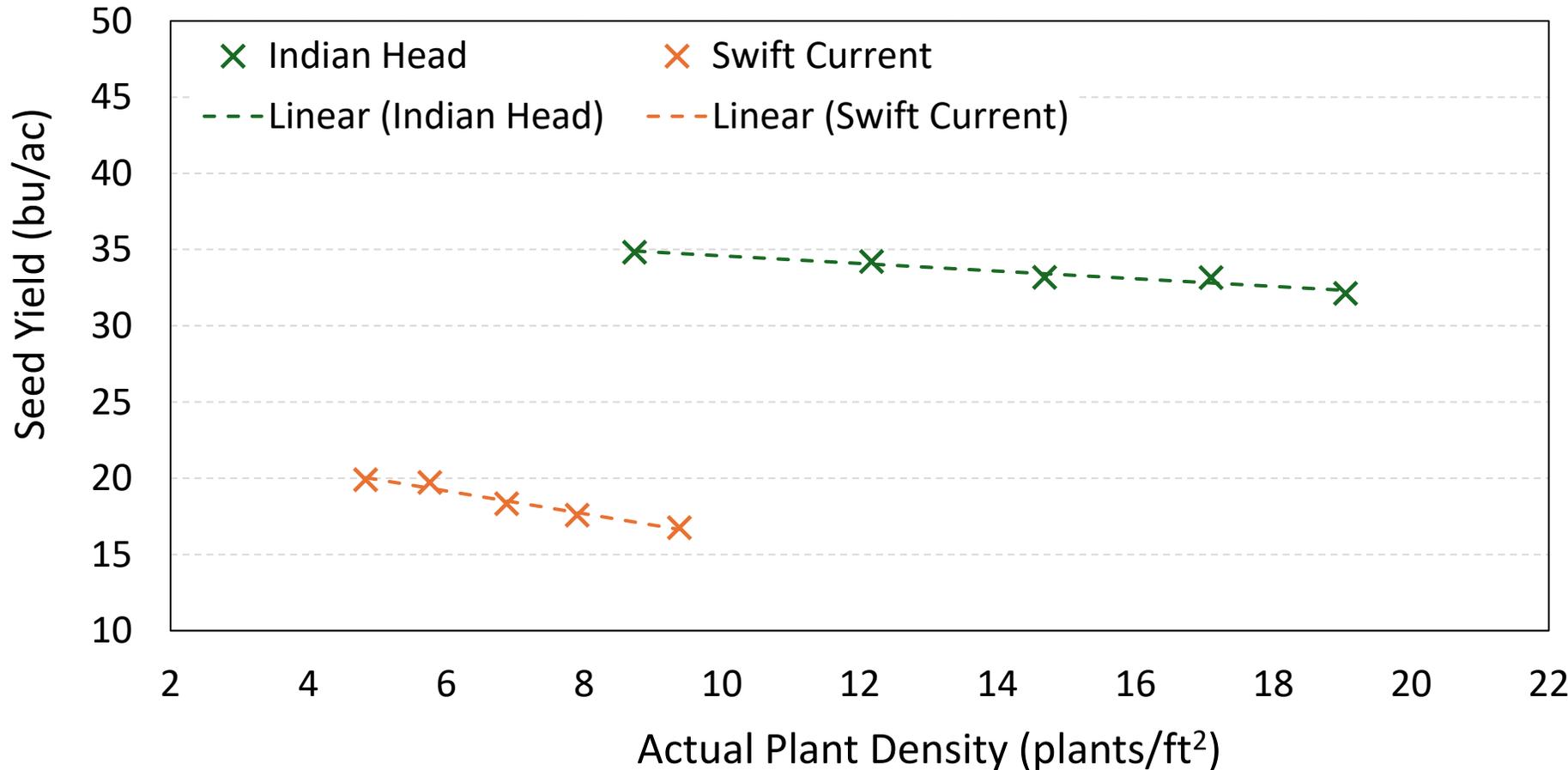


VAR	BU/AC
COMP	20.5 A (+25%)
OP	16.4 B



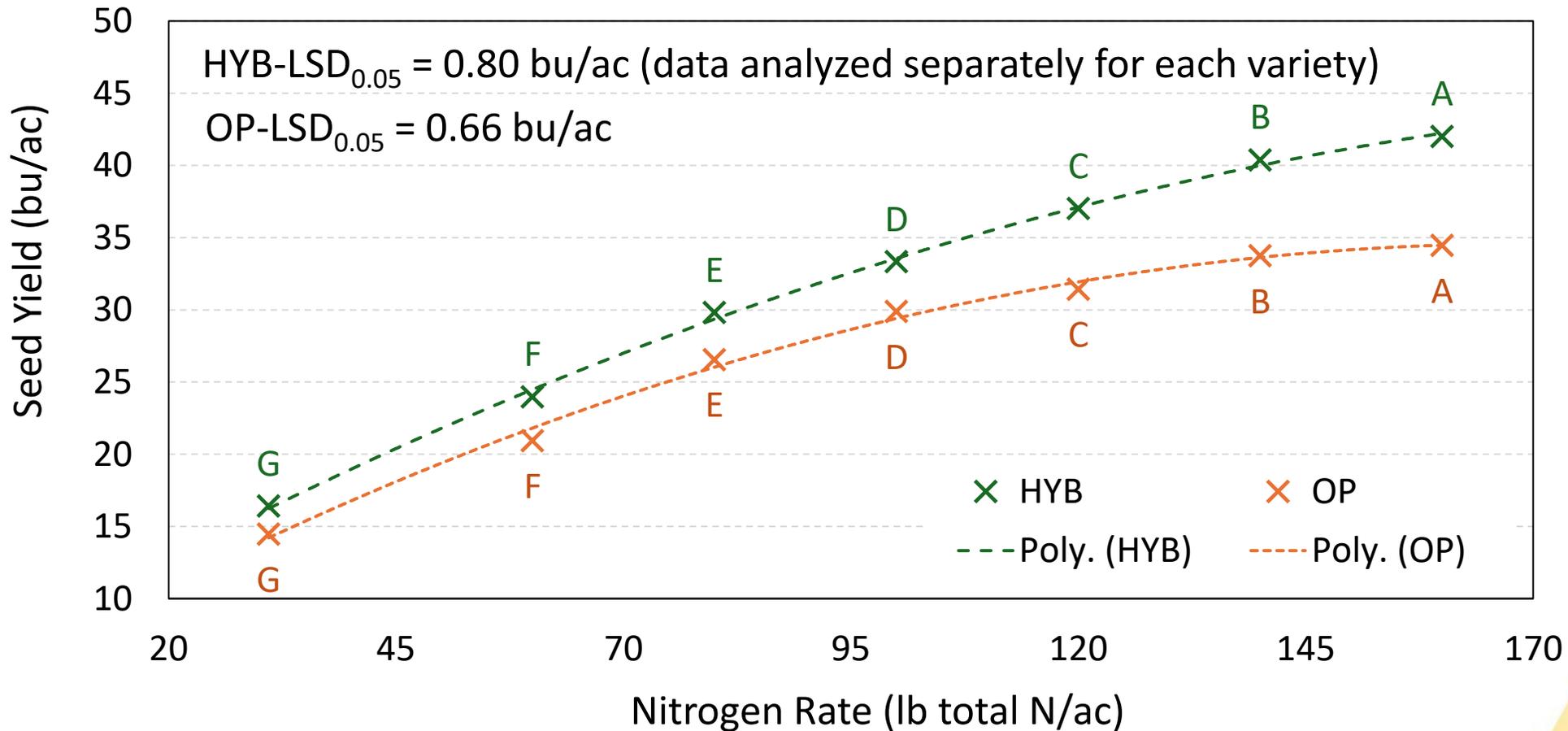
Averaged Yellow Mustard Seed Yield Response to Actual Plant Densities (Indian Head vs Swift Current)

Three Year Average (2023-25)



Hybrid vs Open Pollinated Brown Mustard Seed Yield Response to Nitrogen Rate (Indian Head)

Three Year Average (2020-22)

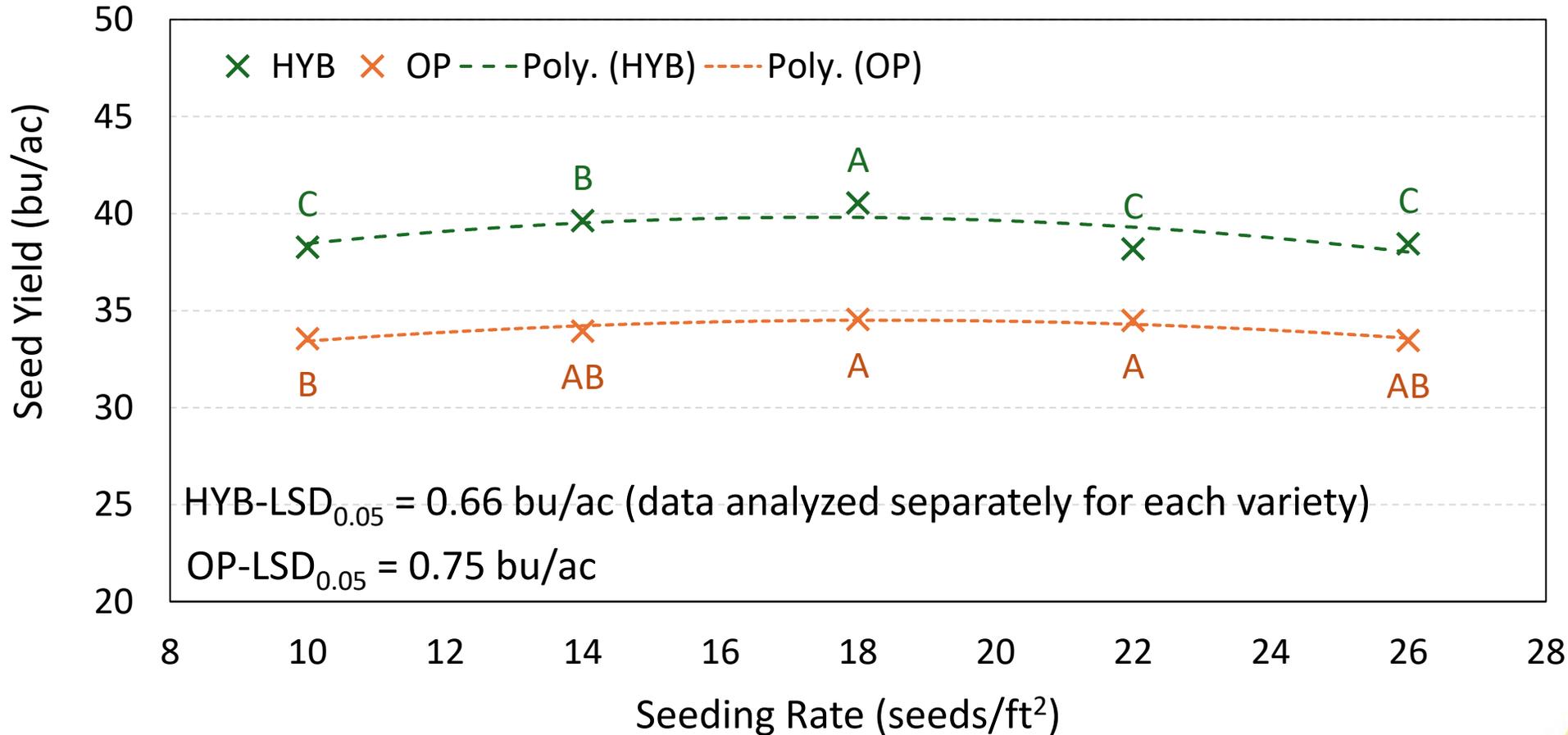


VAR	BU/AC
HYB	31.8 A (+16%)
OP	27.4 B



Hybrid vs Open Pollinated Brown Mustard Seed Yield Response to Seeding Rate (Indian Head)

Three Year Average (2020-22)



VAR	BU/AC
HYB	39.0 A (+15%)
OP	34.0 B



Composite versus Open Pollinated Yellow Mustard Management: Take Home Messages

- The greatest yield advantages to the composite variety generally occurred in more stressful environments (i.e., Swift Current, IH-2024), but we also saw consistent benefits under high yielding conditions
- Similar optimal N rate at Indian Head for composite vs OP yellow mustard while, at Swift Current, more N was needed to achieve the higher yield potential of the composite
 - Optimum ranged from ~100 lb total N/ac for OP at Swift Current to 140-160 lb total N/ac at Indian Head
- Seeding rate responses were largely negative due to drought stress and, in some cases lodging (i.e., IH-24); however, with much higher mortality at Swift Current vs Indian Head, the optimum plant populations likely differed with environment
 - While yellow mustard growers can likely benefit from lower seeding rates relative to what are typically recommended, regardless of variety, we must account for mortality which can be difficult to predict but will vary with management (i.e., seeding equipment, seed-placed fertilizer, seed treatment/spraying for flea beetles, etc.)

Field Pea Response to Various Phosphorus Fertilizer Formulations and Placement (ADOPT)



Field Pea Response to Phosphorus Fertilizer Formulations and Placement (ADOPT 2025)

#	Name / P Form	Placement	lb N-P ₂ O ₅ -K ₂ O-S/ac
1	No Fertilizer	n/a	0-0-0-0
2	Nitrogen Only	n/a	23-0-0-0
3	MAP ^Z	Side-Band	23-40-0-0
4	MAP + AMS ^Y	Side-Band	23-40-0-17
5	MES15 ^X	Side-Band	23-40-0-18
6	MAP + MST ^W	Side-Band	23-40-0-15
7	Synchro50 ^V + AMS	Side-Band	23-40-0-17
8	MAP	In-Furrow	23-40-0-0
9	MAP + AMS	In-Furrow	23-40-0-17
10	MES15	In-Furrow	23-40-0-18
11	MAP + MST	In-Furrow	23-40-0-15
12	Synchro50 + AMS	In-Furrow	23-40-0-17

Objectives: To demonstrate the effects of phosphorus (P) fertilizer forms and placement on field pea establishment, growth, yield, and quality

Locations

- 1) Indian Head
- 2) Melfort
- 3) Scott
- 4) Swift Current

Data Collection

- 1) Plant density
- 2) Canopy Cover
- 3) Seed yield
- 4) Seed Protein

Fertilizer Product Descriptions

MAP: Monoammonium phosphate (11-52-0)

- Often considered the industry standard and is the least expensive form of granular P

AMS: Ammonium sulfate (21-0-0-24)

- Standard form of granular sulfate included to balance S where required and enable more direct comparisons to multi-nutrient products like MES15 and MAP+MST

MES15: MicroEssentials[®] S15 (13-33-0-15)

- Well-established product from Mosaic, essentially comprised of MAP, AMS, and elemental S

MAP+MST: Smart Nutrition MAP + MST (9-43-0-16)

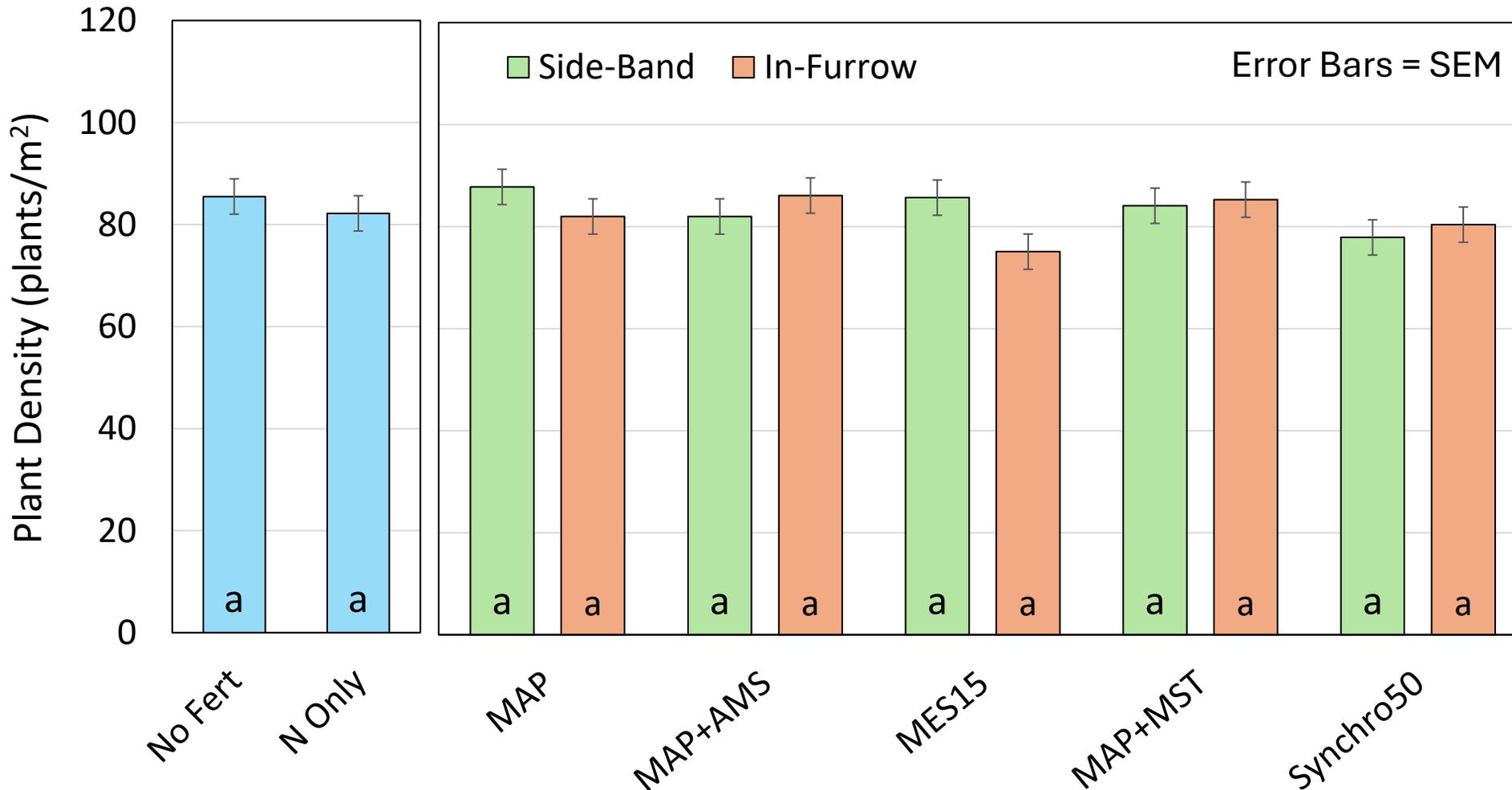
- Newer product from Nutrien, essentially MAP homogenized with micronized (~15 microns) elemental S

Crystal Green Synchro[™] 50: (9-42.5-0-0 + 7% Mg)^z

- Newer product from Ostara/Taurus that is essentially a homogenized blend of MAP and struvite boasting a combination of quick and slow-release P with improved seed safety relative to pure MAP

^z AMS was always side-banded with Synchro 50 to balance fertility without diminishing potential seed-safety advantages

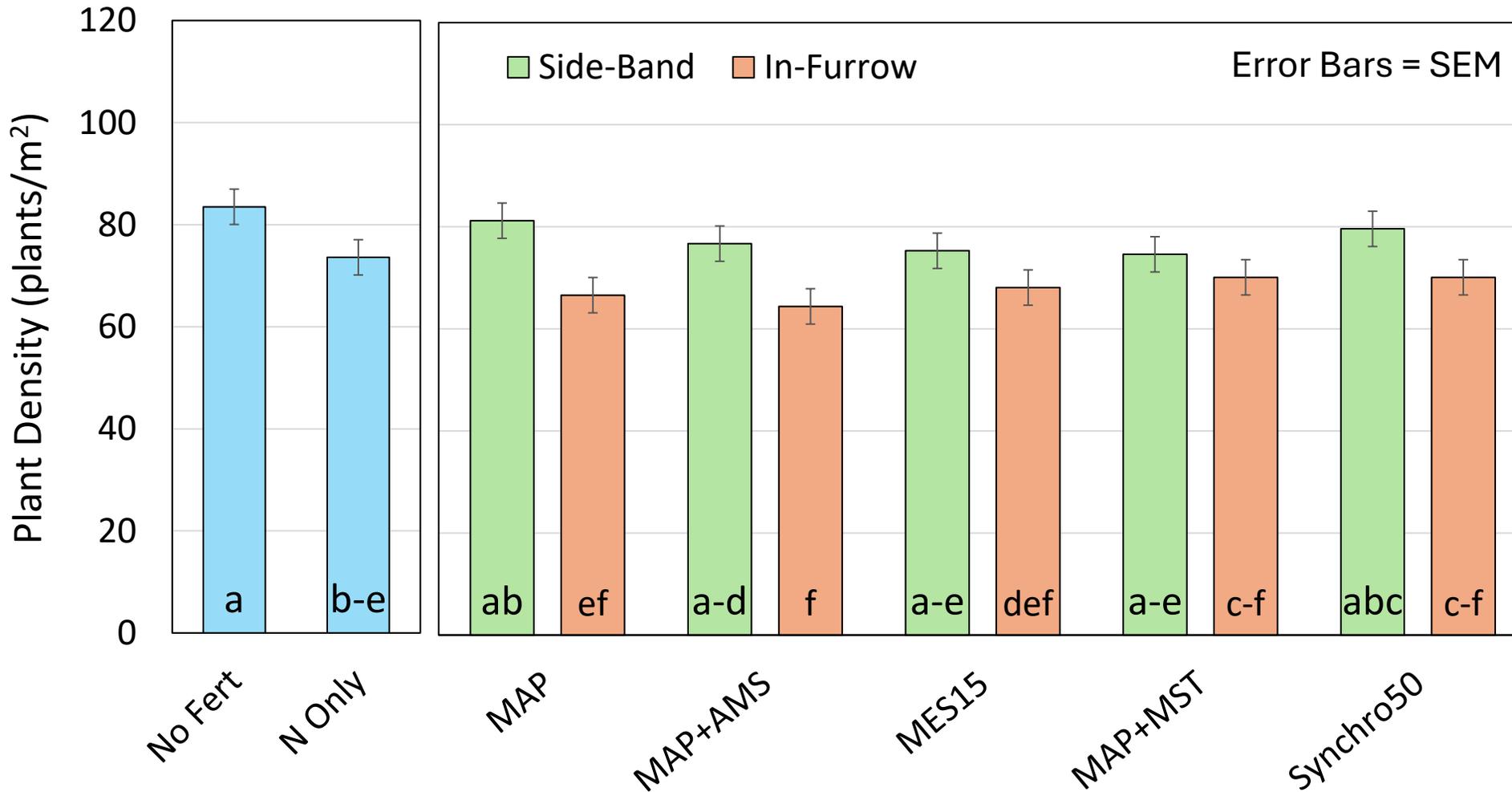
Phosphorus Treatment Effects on Pea Establishment (Indian Head 2025 – thin Black Soil Zone)



Slice / Contrast	Pr > F
FERT	0.213
OP vs P applied	0.904
OP vs Side-Band (SB)	0.718
OP vs In-Furrow (IF)	0.896
SB vs IF	0.395



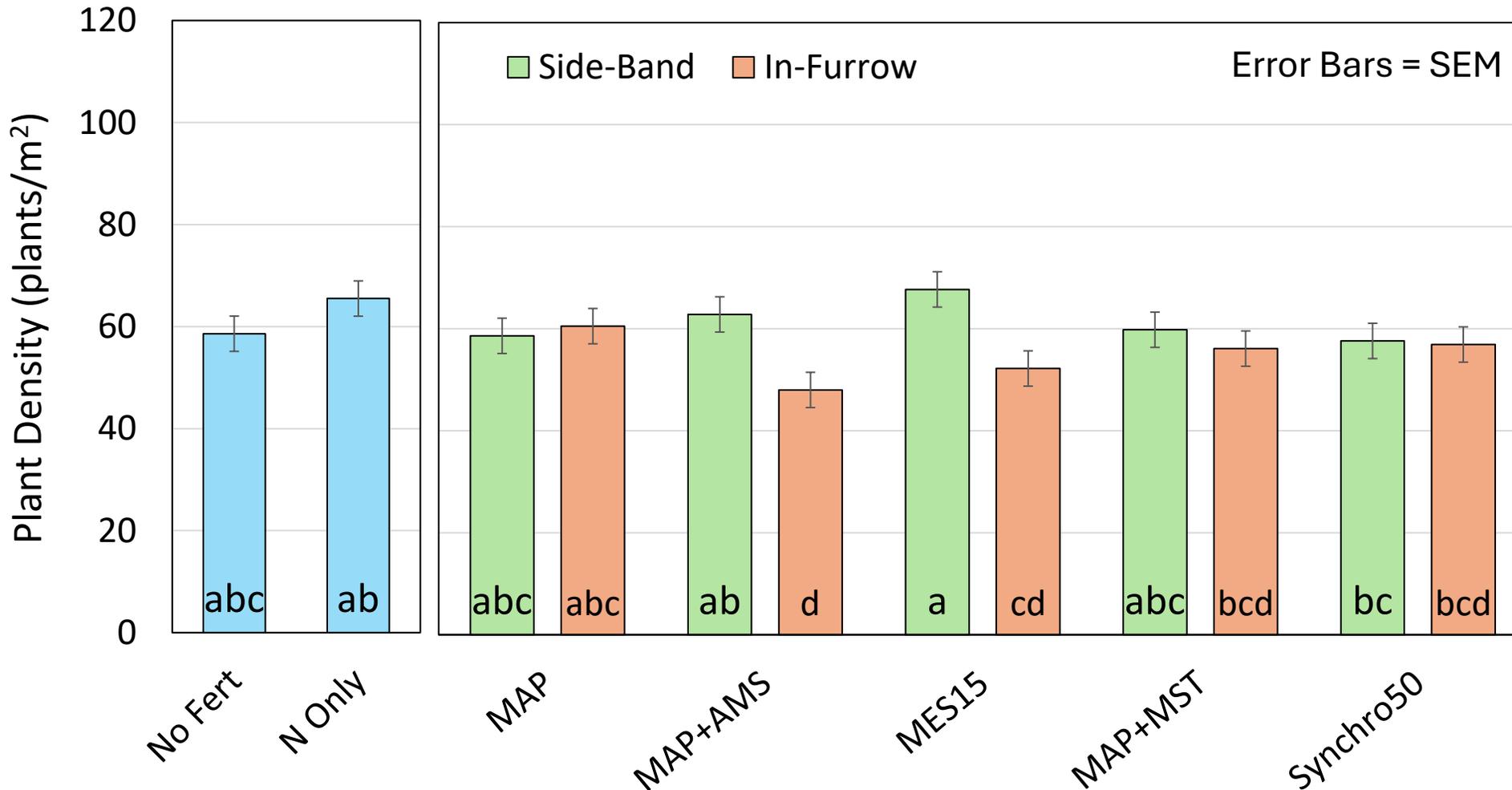
Phosphorus Treatment Effects on Pea Establishment (Melfort 2025 – moist Black Soil Zone)



Slice / Contrast	Pr > F
FERT	<0.001
OP vs P applied	0.820
OP vs Side-Band (SB)	0.274
OP vs In-Furrow (IF)	0.127
SB vs IF	<0.001



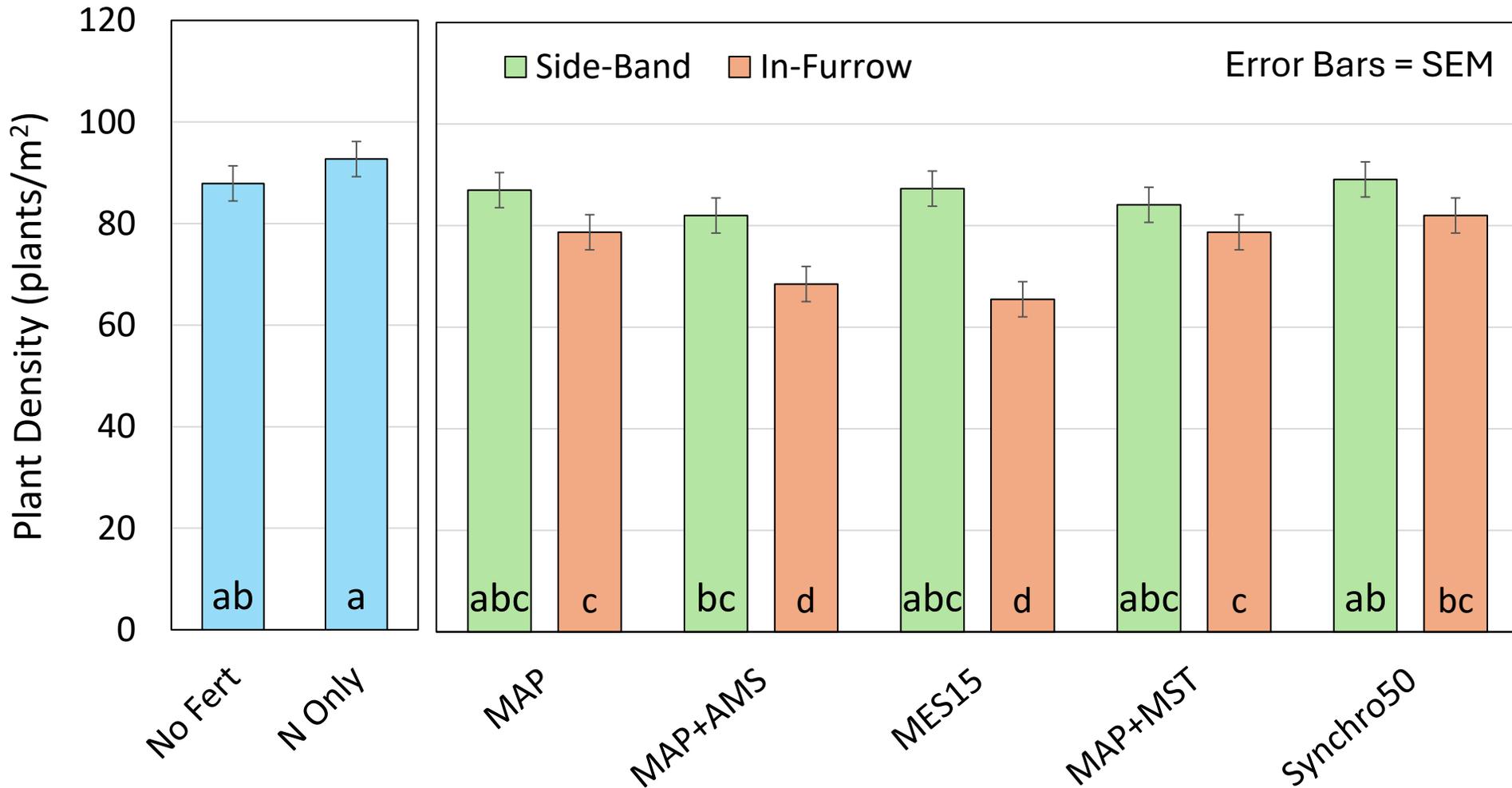
Phosphorus Treatment Effects on Pea Establishment (Scott 2025 – Dark Brown Soil Zone)



Slice / Contrast	Pr > F
FERT	0.003
OP vs P applied	0.028
OP vs Side-Band (SB)	0.234
OP vs In-Furrow (IF)	0.003
SB vs IF	0.002



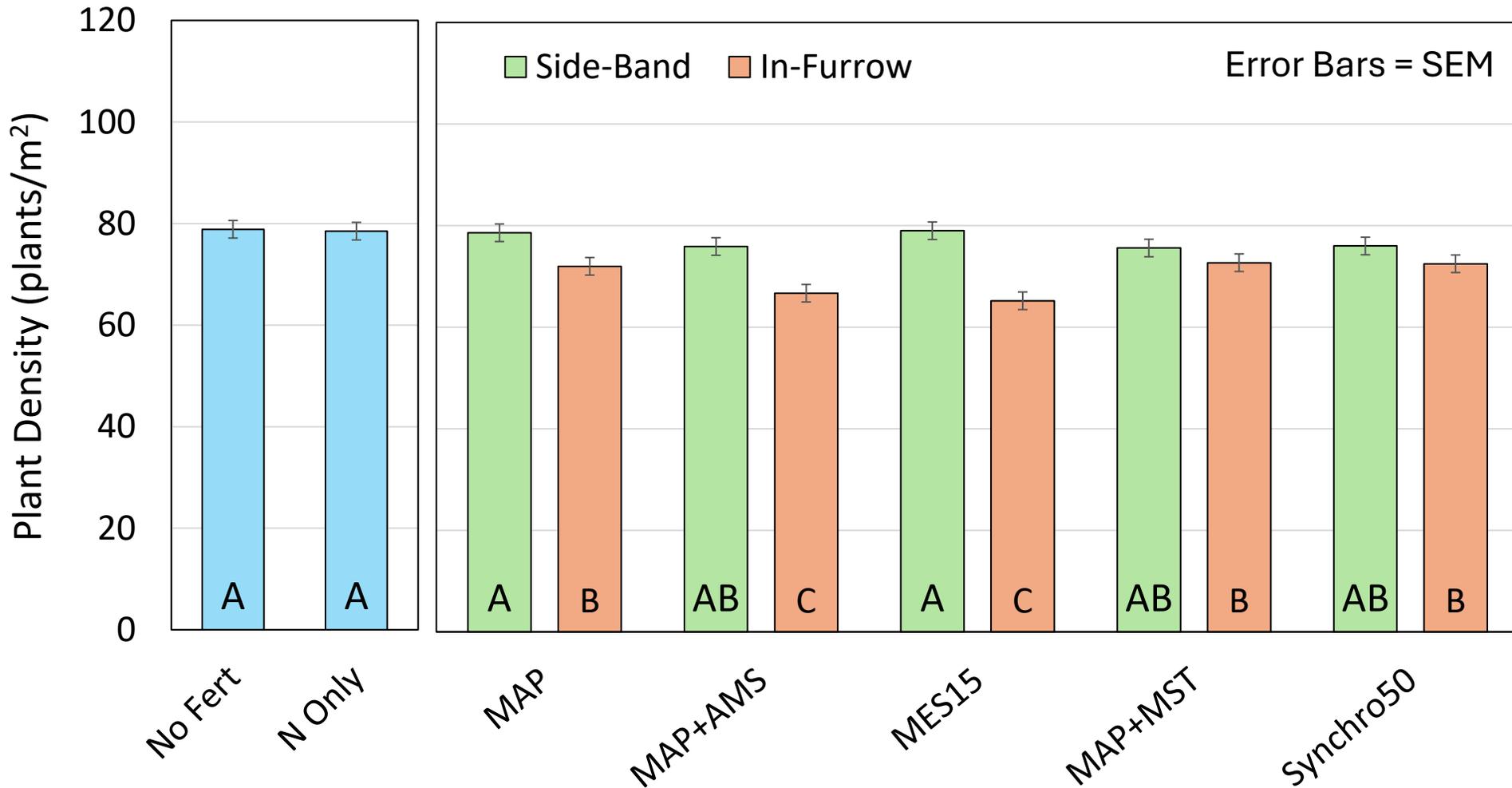
Phosphorus Treatment Effects on Pea Establishment (Swift Current 2025 – dry Brown Soil Zone)



Slice / Contrast	Pr > F
FERT	0.001
OP vs P applied	<0.001
OP vs Side-Band (SB)	0.054
OP vs In-Furrow (IF)	<0.001
SB vs IF	<0.001



Phosphorus Treatment Effects on Pea Establishment (Overall Average – All Sites)



Effect / Contrast	Pr > F
SITE	<0.001
FERT	<0.001
SITE x FERT	0.007
OP vs P applied	0.003
OP vs Side-Band (SB)	0.404
OP vs In-Furrow (IF)	<0.001
SB vs IF	<0.001

IMPORTANT: Fertilizer treatment effects on field pea establishment varied with site.



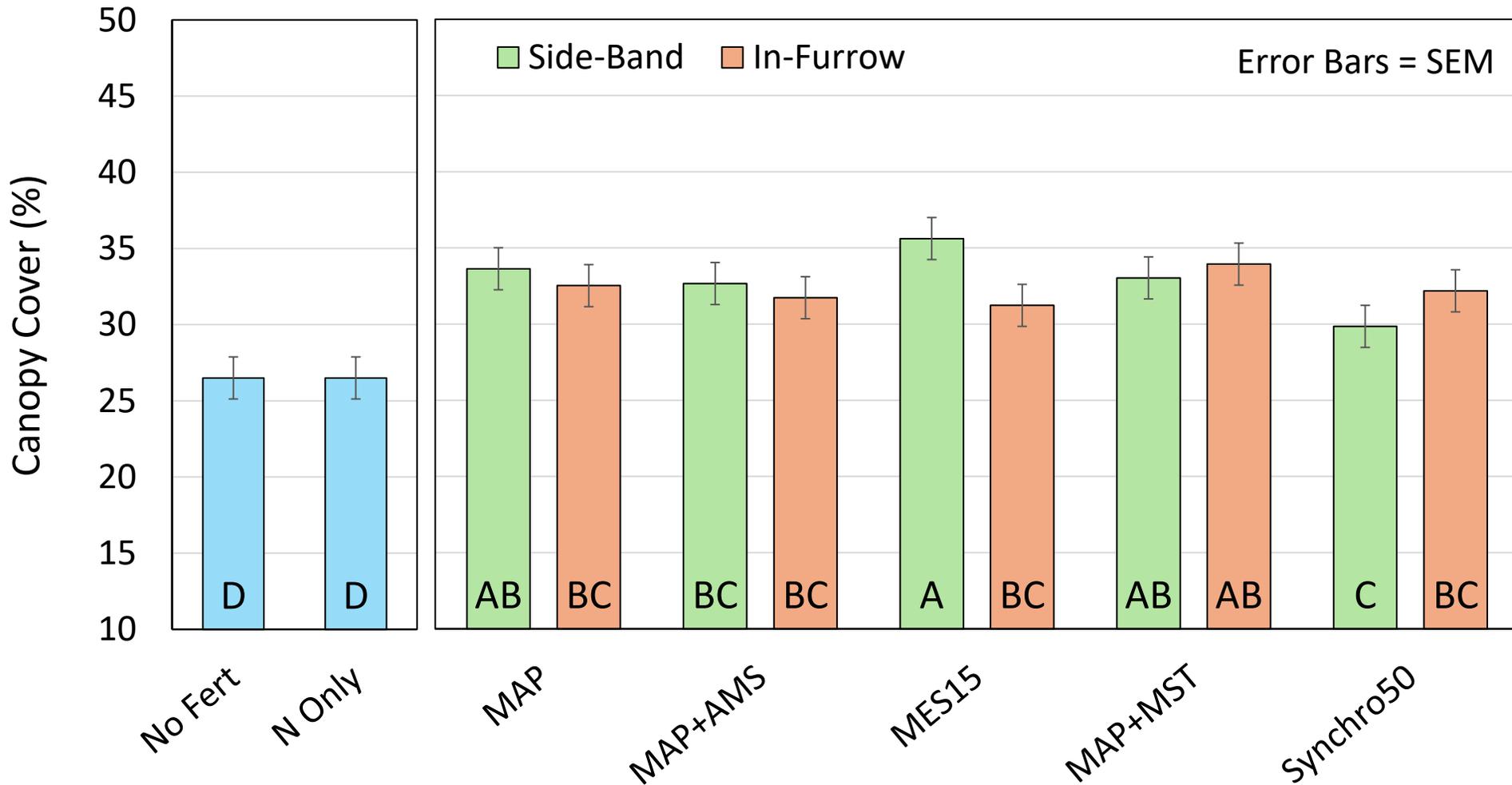
Indian Head, June 19, 2025
MAP + AMS, side-banded
34% Canopy Closure



IHARF Winter Seminar & AGM
February 4, 2026, Balgonie, SK



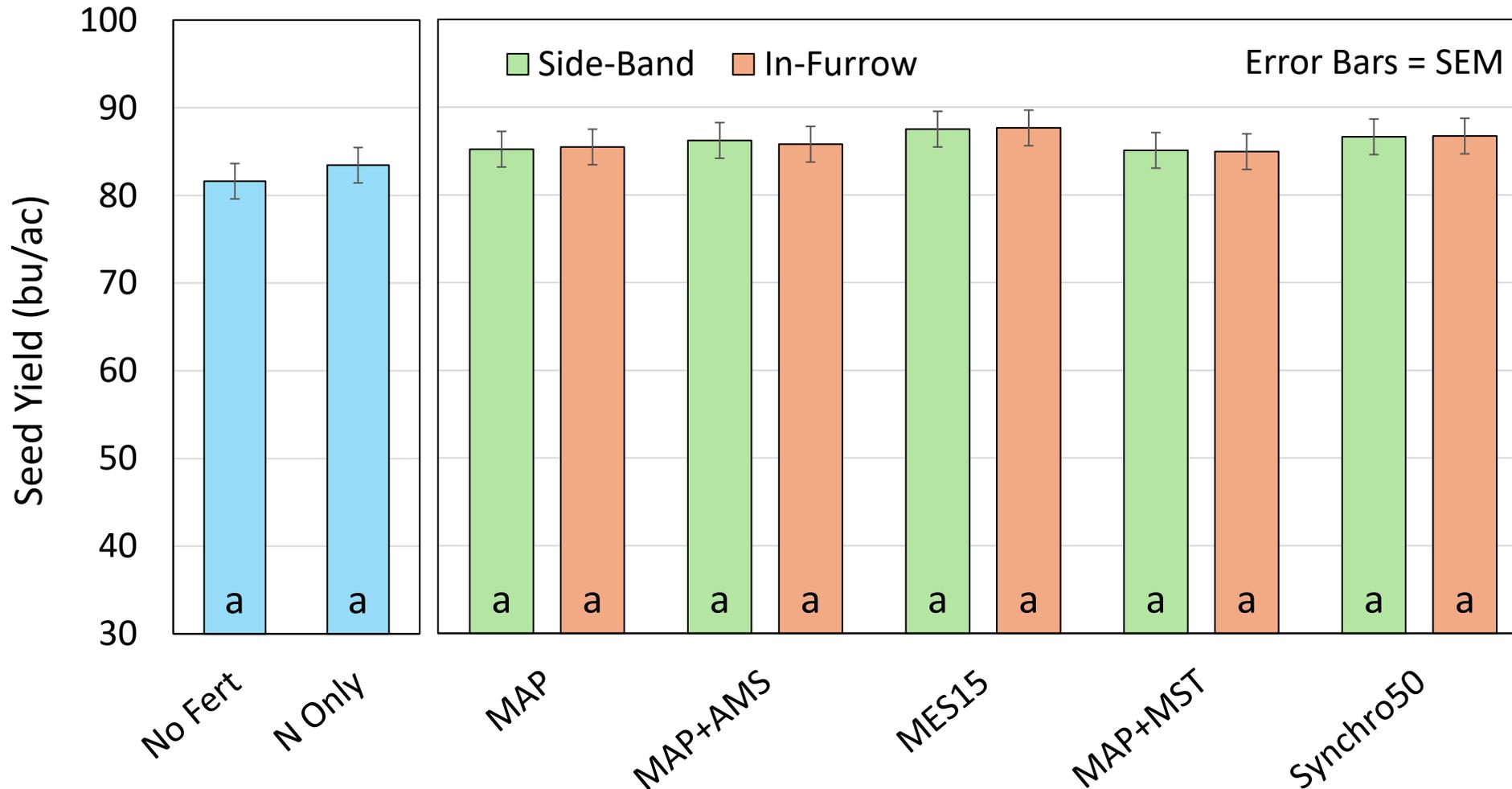
Phosphorus Treatment Effects on Pea Canopy Cover (Overall Average – All Sites)



Effect / Contrast	Pr > F
SITE	<0.001
FERT	<0.001
SITE x FERT	<0.001
OP vs P applied	<0.001
OP vs Side-Band (SB)	<0.001
OP vs In-Furrow (IF)	<0.001
SB vs IF	0.327

IMPORTANT: Fertilizer treatment effects on field pea canopy cover varied with site.

Phosphorus Treatment Effects on Pea Seed Yield (Indian Head 2025 – thin Black Soil Zone)

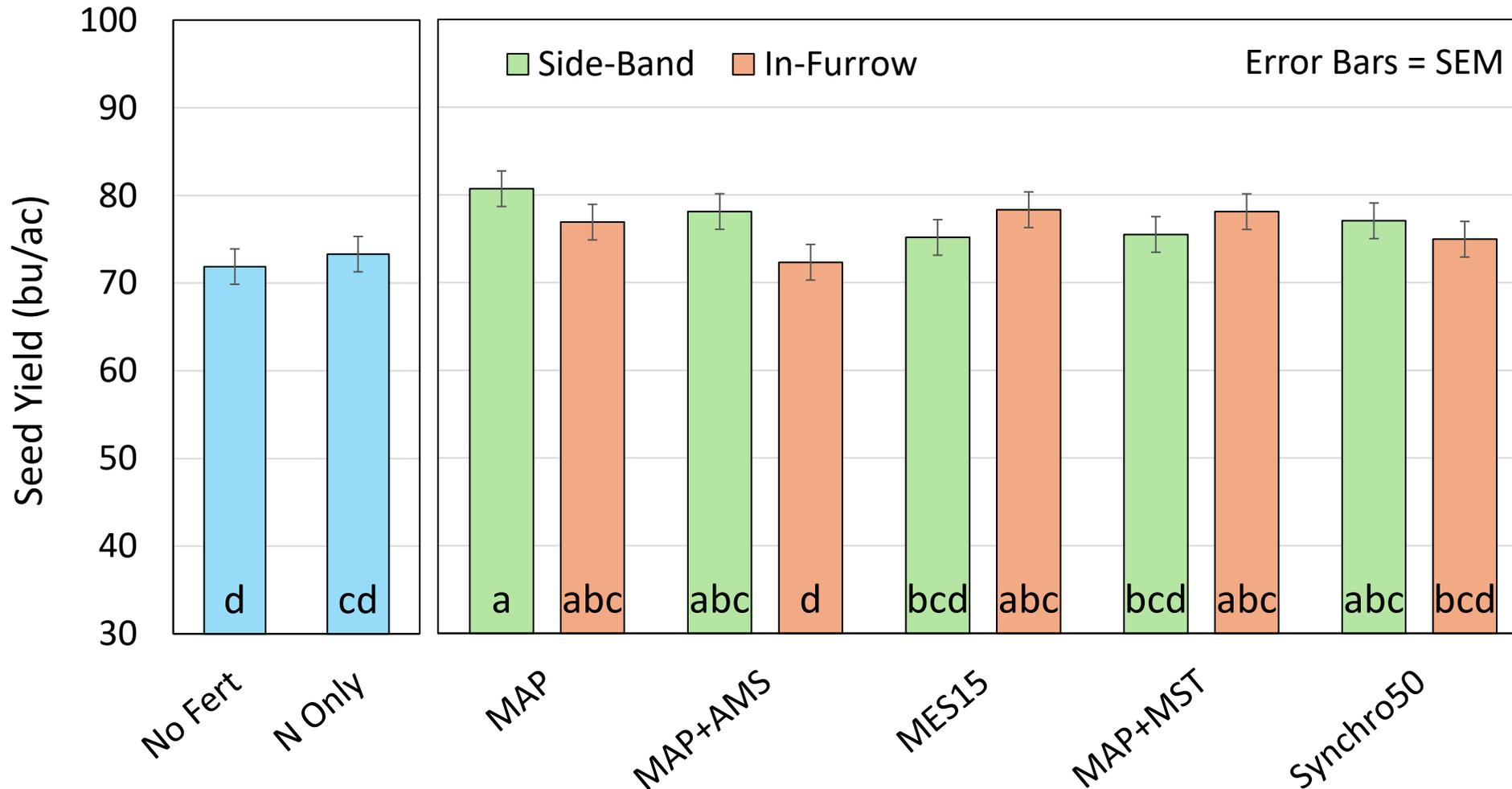


Slice / Contrast	Pr > F
FERT	0.365
OP vs P applied	0.118
OP vs Side-Band (SB)	0.133
OP vs In-Furrow (IF)	0.136
SB vs IF	0.985

14 ppm Olsen-P



Phosphorus Treatment Effects on Pea Seed Yield (Melfort 2025 – moist Black Soil Zone)

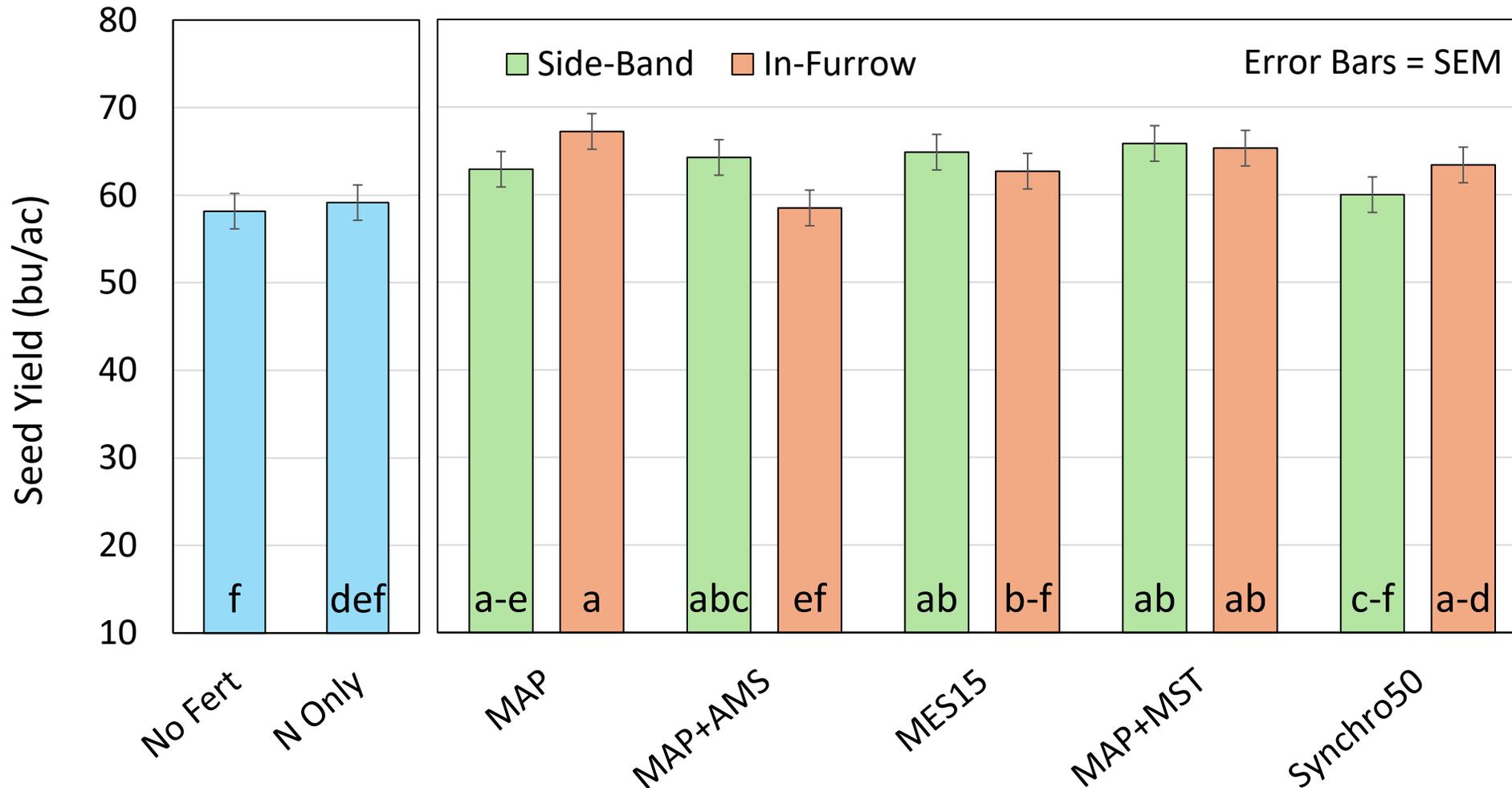


Slice / Contrast	Pr > F
FERT	0.004
OP vs P applied	0.047
OP vs Side-Band (SB)	0.026
OP vs In-Furrow (IF)	0.116
SB vs IF	0.248

14 ppm Olsen-P



Phosphorus Treatment Effects on Pea Seed Yield (Scott 2025 – Dark Brown Soil Zone)

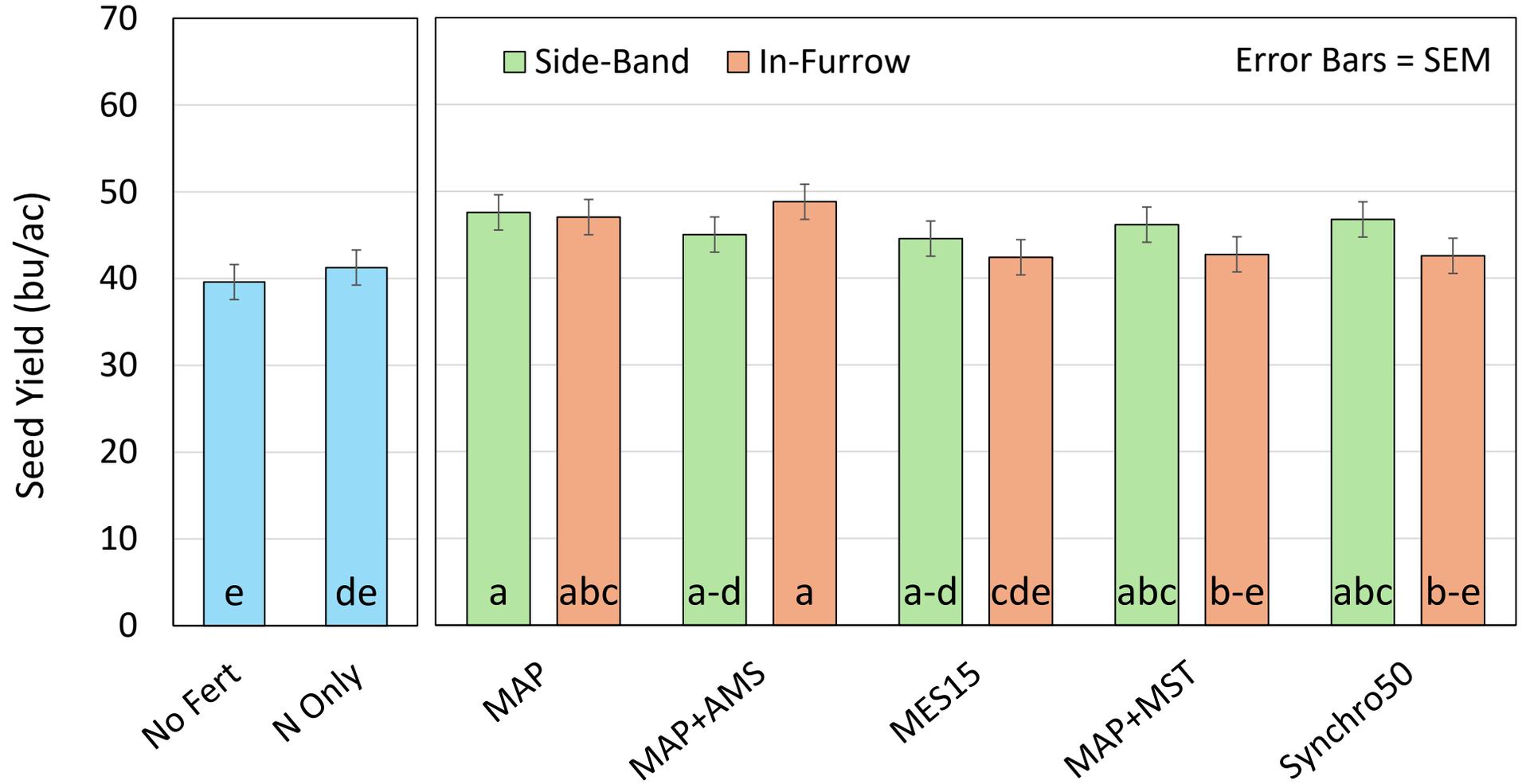


Slice / Contrast	Pr > F
FERT	<0.001
OP vs P applied	0.017
OP vs Side-Band (SB)	0.014
OP vs In-Furrow (IF)	0.018
SB vs IF	0.882

13 ppm Olsen-P



Phosphorus Treatment Effects on Pea Seed Yield (Swift Current 2025 – dry Brown Soil Zone)

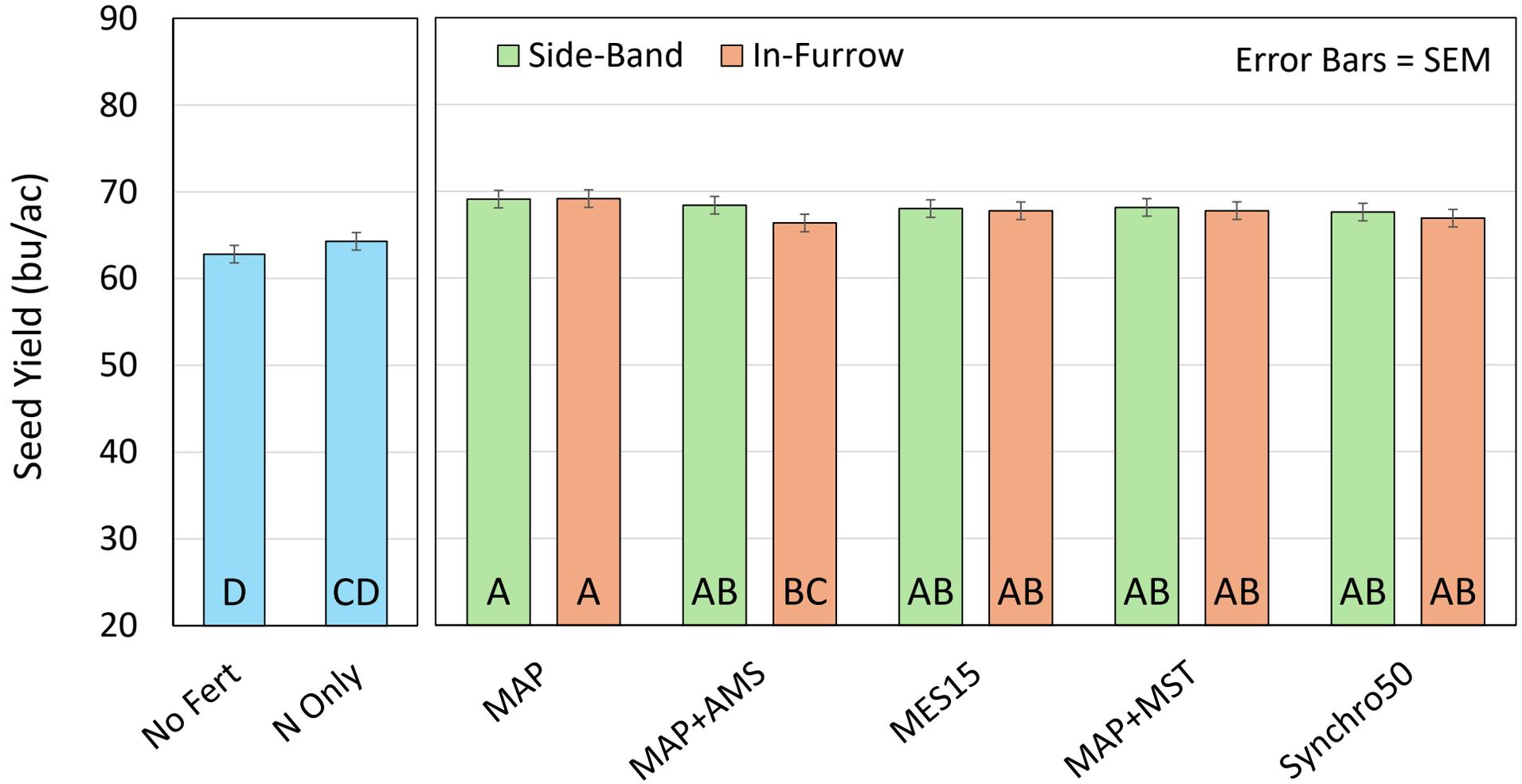


Slice / Contrast	Pr > F
FERT	0.001
OP vs P applied	0.018
OP vs Side-Band (SB)	0.009
OP vs In-Furrow (IF)	0.056
SB vs IF	0.204

13 ppm Olsen-P



Phosphorus Treatment Effects on Pea Seed Yield (Overall Average – All Sites)



Effect / Contrast	Pr > F
SITE	<0.001
FERT	0.042
SITE x FERT	0.026
OP vs P applied	<0.001
OP vs Side-Band (SB)	<0.001
OP vs In-Furrow (IF)	<0.001
SB vs IF	0.195

IMPORTANT: Fertilizer treatment effects on field pea seed yield varied with site.

Field Pea Response to Phosphorus Fertilizer Formulations and Placement: Take Home Messages

- Seed-placed fertilizer effects on establishment varied across environment (i.e., increased risk going from fine-textured, high OM to coarser, lower OM soils)
- Form effects varied with MAP+AMS and MES15 generally causing the greatest stand reductions when seed-placed and all other forms performing similarly
- Phosphorus consistently increased early season growth across locations, but with some variation amongst forms and placement methods
- Overall yield increases with P ranged from 4-11% for individual sites and, on average, all forms and both placement options performed similarly except for a slight disadvantage with seed-placed AMS

Canola & Wheat Response to Side-Banded EEF Nitrogen Forms (SFP/ADOPT/SaskOilseeds)



Efficacy of Enhanced Efficiency Nitrogen Fertilizers for Side-Band Applications in Spring Wheat (SFP)

Objectives: To determine if the use of certain enhanced efficiency nitrogen fertilizer products can improve the nitrogen use-efficiency over untreated urea for spring banded applications in CWRS wheat.

Years: 2024 and 2025 **Locations:** Yorkton (lead), Indian Head, Scott, Melfort, & Prince Albert

Treatments (10): 3 N Rates x 3 N Forms, plus a 0N Control

N Rates^z

- 1) 80 lb N/ac
- 2) 120 lb N/ac
- 3) 160 lb N/ac

N Forms

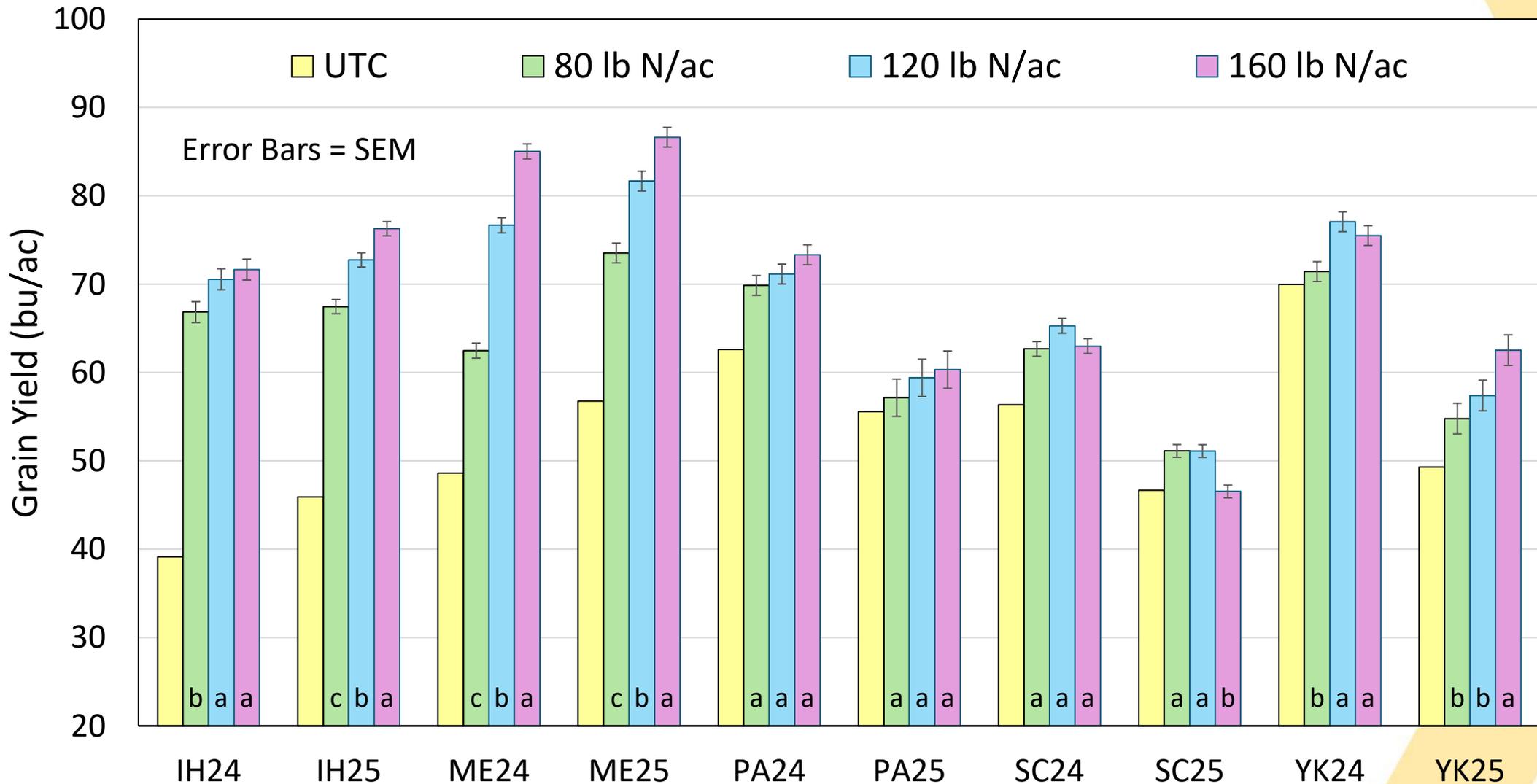
- 1) Untreated Urea
- 2) eNtrench NXTGEN (nitrification inhibitor)
- 3) SUPERU (dual urease/nitrification inhibitor)

^z N rates include soil NO₃-N plus N from PKS products

Data Collection:

- 1) Emergence (plants/m²)
- 2) Maturity (days)
- 3) Grain Yield (bu/ac)
- 4) Grain Protein (%)
- 5) Tissue N (%)
- 6) N Uptake (lb N/ac)

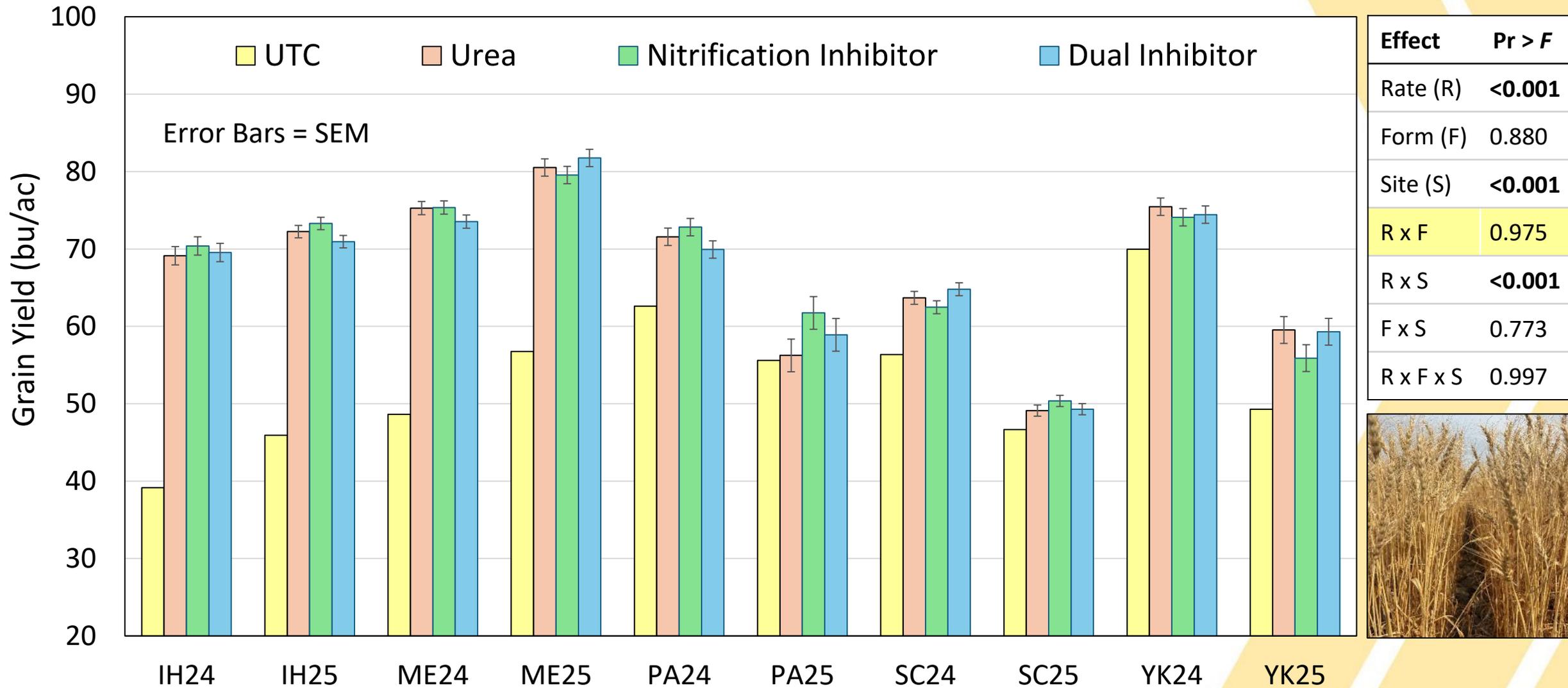
Nitrogen Rate x Site Effects on Wheat Yield



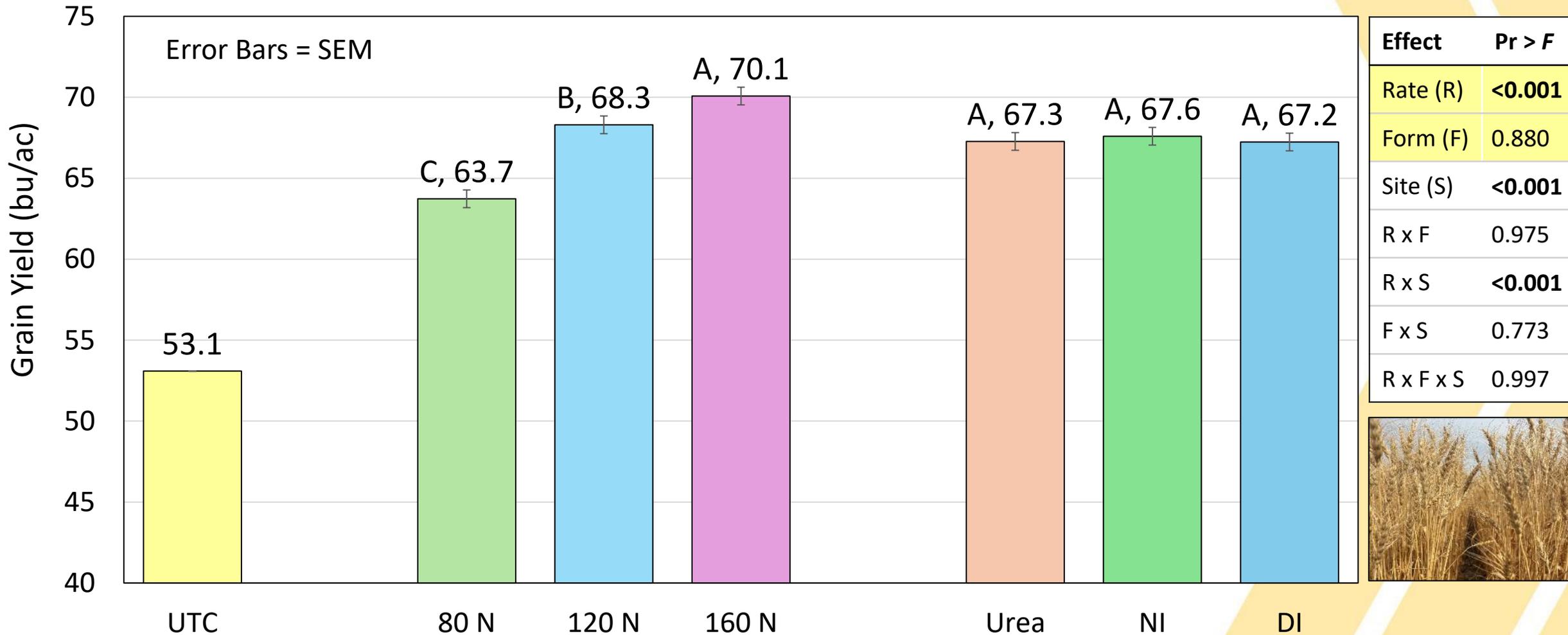
Effect	Pr > F
Rate (R)	<0.001
Form (F)	0.880
Site (S)	<0.001
R x F	0.975
R x S	<0.001
F x S	0.773
R x F x S	0.997



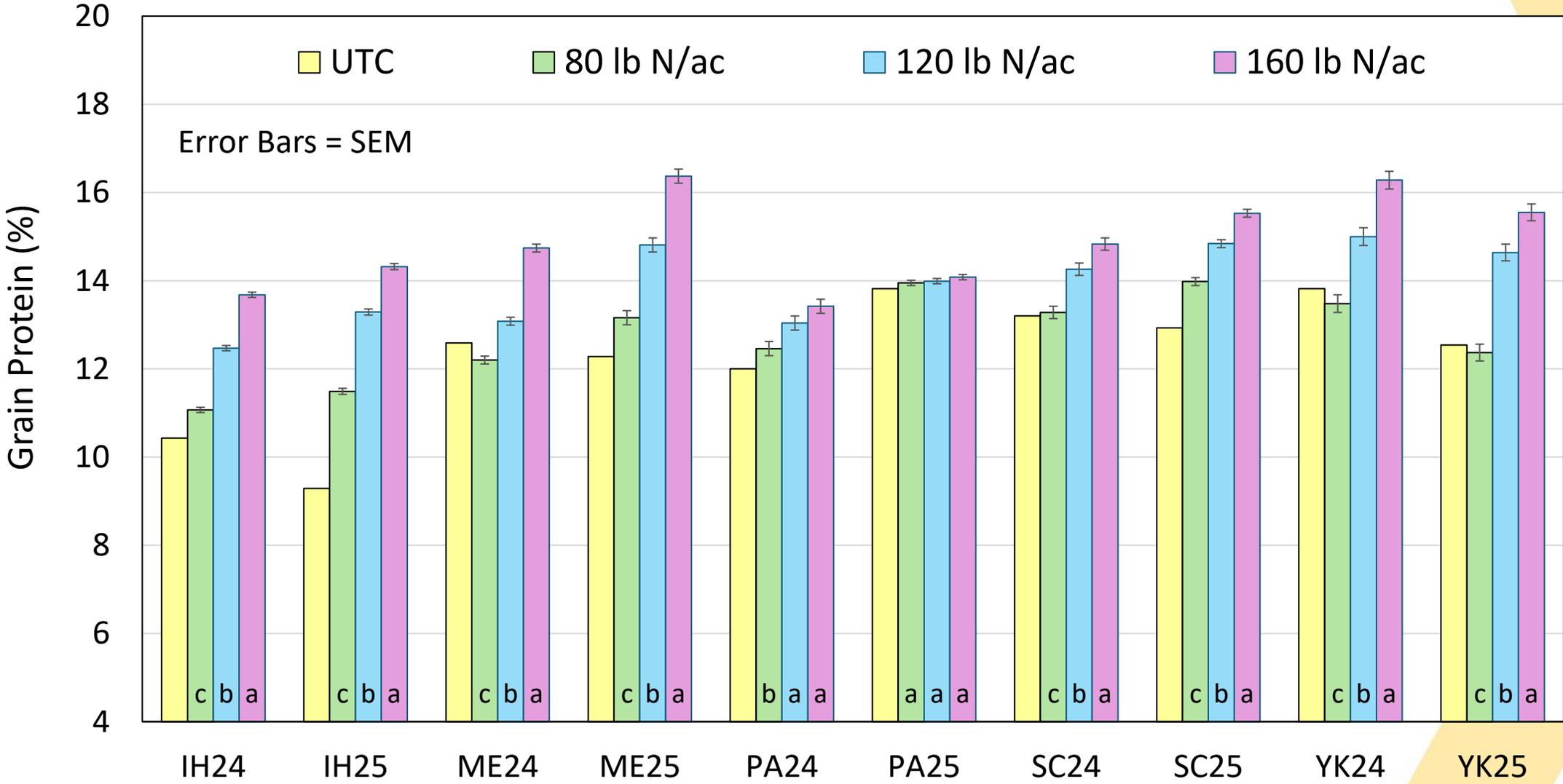
Nitrogen Form x Site Effects on Wheat Yield



Nitrogen Rate & Form Effects on Wheat Yield (10 Site Average)



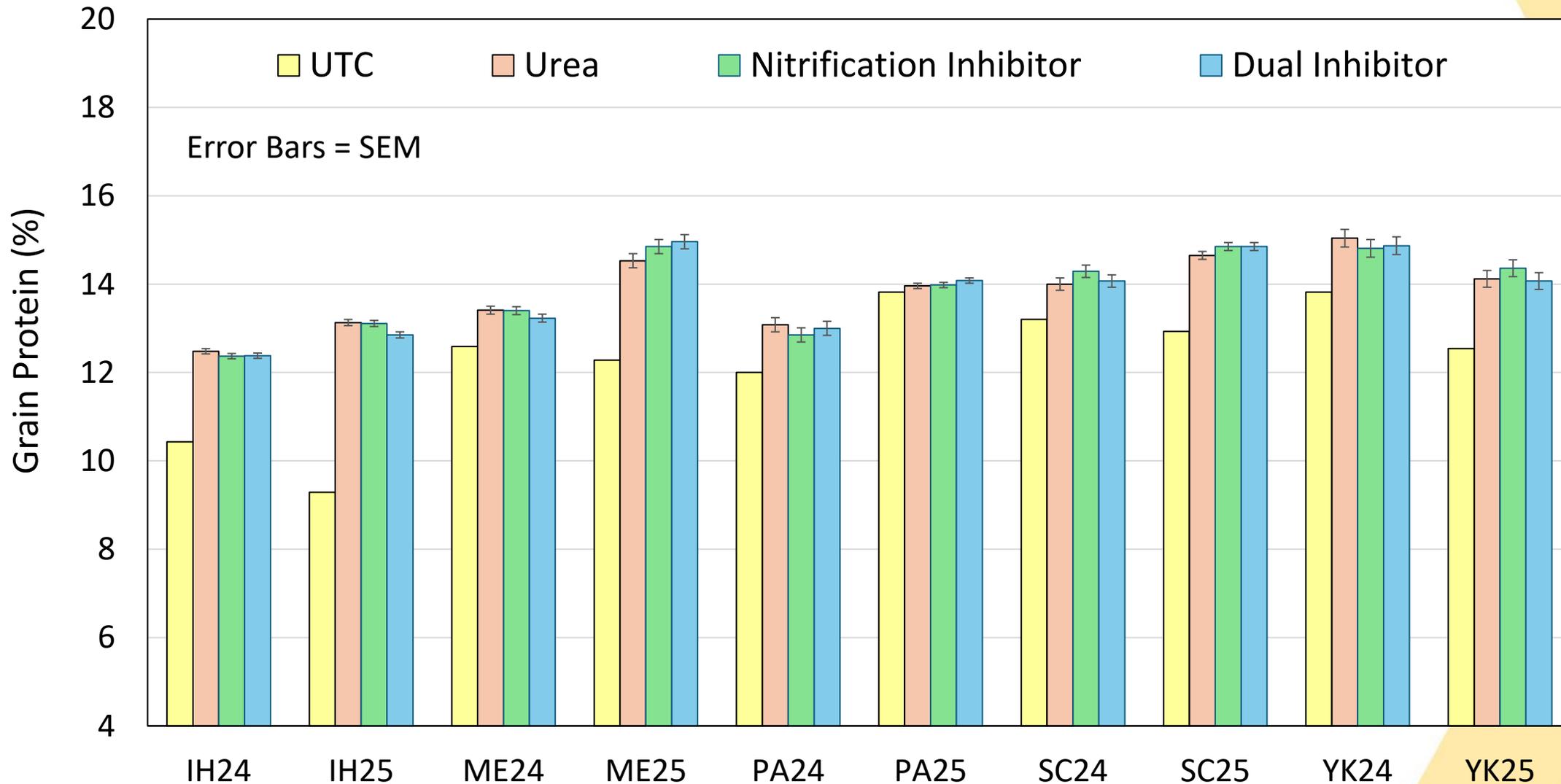
Nitrogen Rate x Site Effects on Wheat Protein



Effect	Pr > F
Rate (R)	<0.001
Form (F)	0.774
Site (S)	<0.001
R x F	0.331
R x S	<0.001
F x S	0.902
R x F x S	0.996



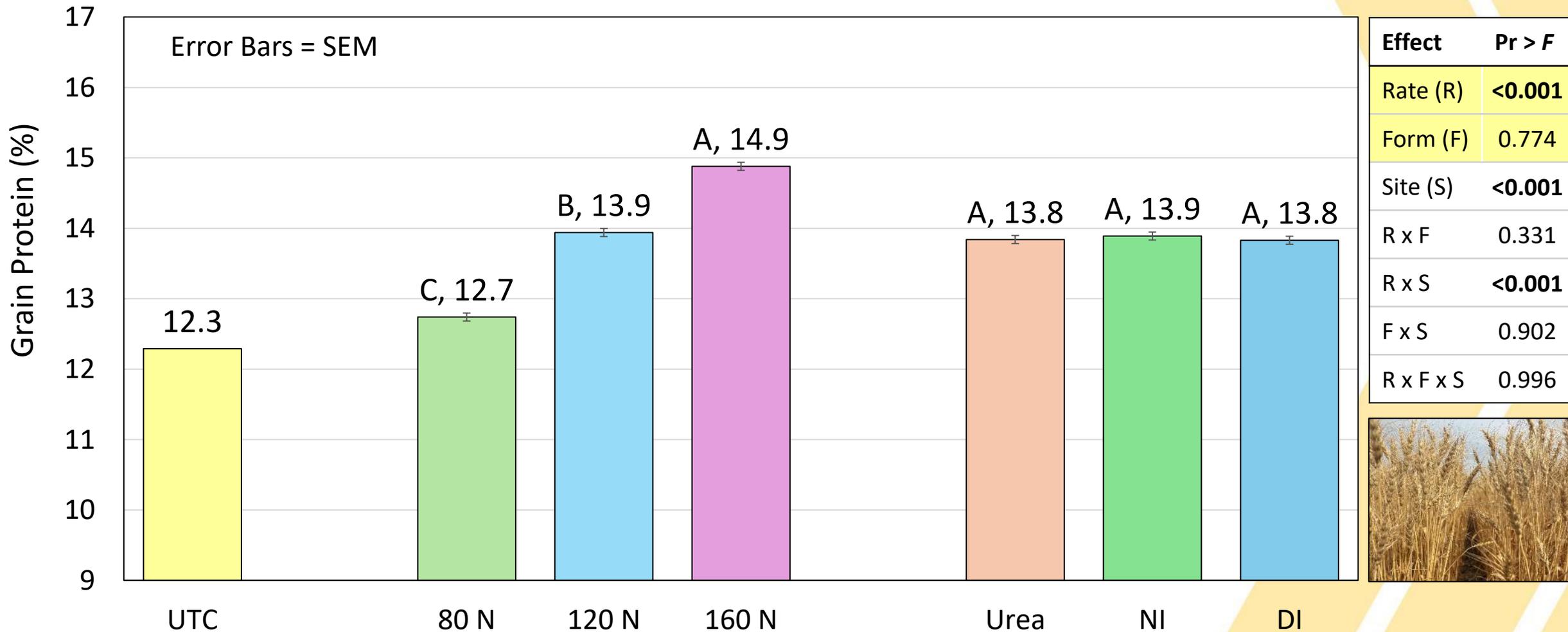
Nitrogen Form x Site Effects on Wheat Protein



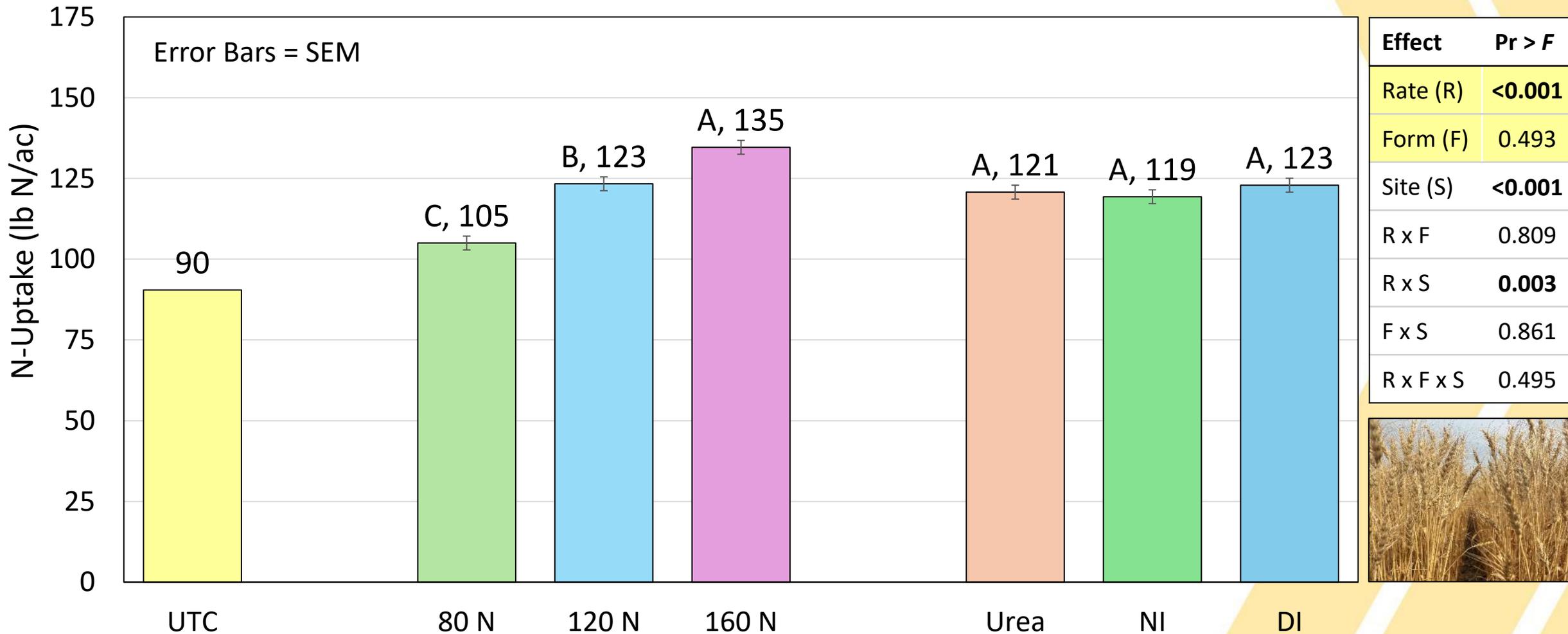
Effect	Pr > F
Rate (R)	<0.001
Form (F)	0.774
Site (S)	<0.001
R x F	0.331
R x S	<0.001
F x S	0.902
R x F x S	0.996



Nitrogen Rate & Form Effects on Wheat Protein (10 Site Overall Average)



Nitrogen Rate & Form Effects on Wheat N-Uptake (10 Site Overall Average)



Canola Response to Side-Banded Enhanced Efficiency Nitrogen Formulations & Blends

Objectives: To demonstrate canola response & the agronomic N-use efficiency of contrasting N fertilizer forms and blends, relative to untreated urea, with side-banding

Treatments:

- | | | |
|------------------------------|---|---|
| 1) Control (soil N plus PKS) | 5) Med N – 25% ESN [®] (polymer) | 9) Med N – 25% SUPERU [®] (dual) |
| 2) Low N – urea (67 N) | 6) Med N – 50% ESN [®] | 10) Med N – 50% SUPERU [®] |
| 3) Med N – urea (111 N) | 7) Med N – 75% ESN [®] | 11) Med N – 75% SUPERU [®] |
| 4) High N – urea (156 N) | 8) Med N – 100% ESN [®] | 12) Med N – 100% SUPERU [®] |
| | | 13) Med N – ANVOL [®] (urease) |
| | | 14) Med N – eNtrench [™] (nitrification) |

Note: Nitrogen rates include residual soil NO₃-N plus N from PKS products

Data Collection:

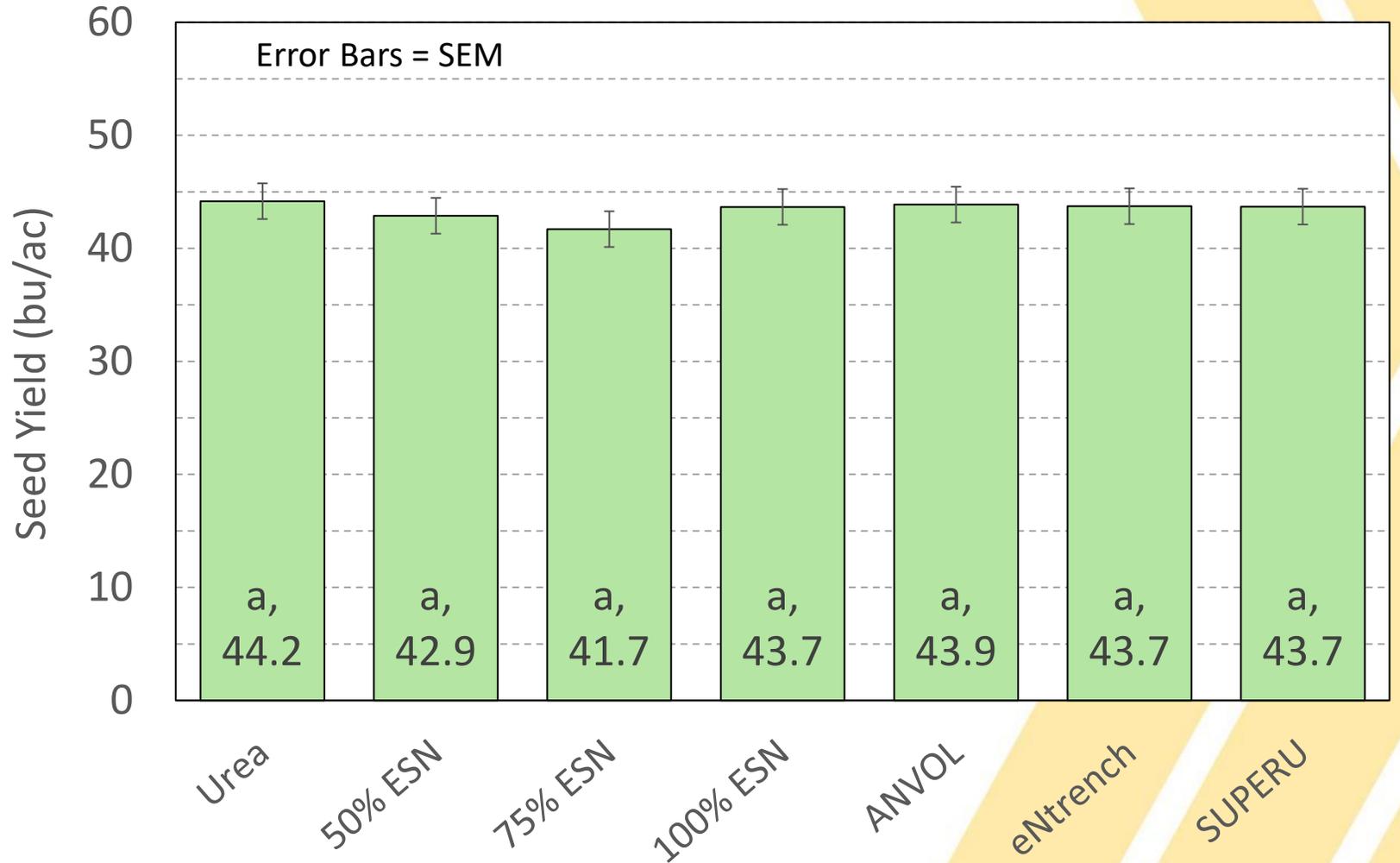
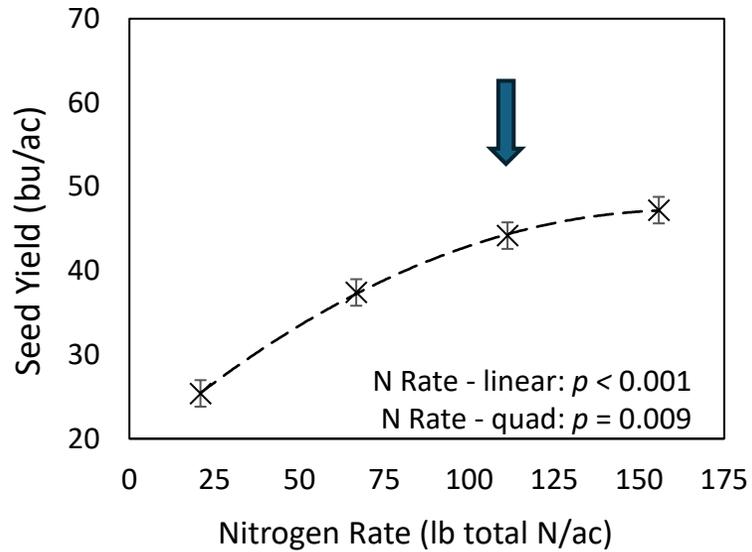
- 1) Emergence
- 2) Seed Yield
- 3) Seed Protein/Oil
- 4) Agronomic NUE

Locations (2024 and 2025):

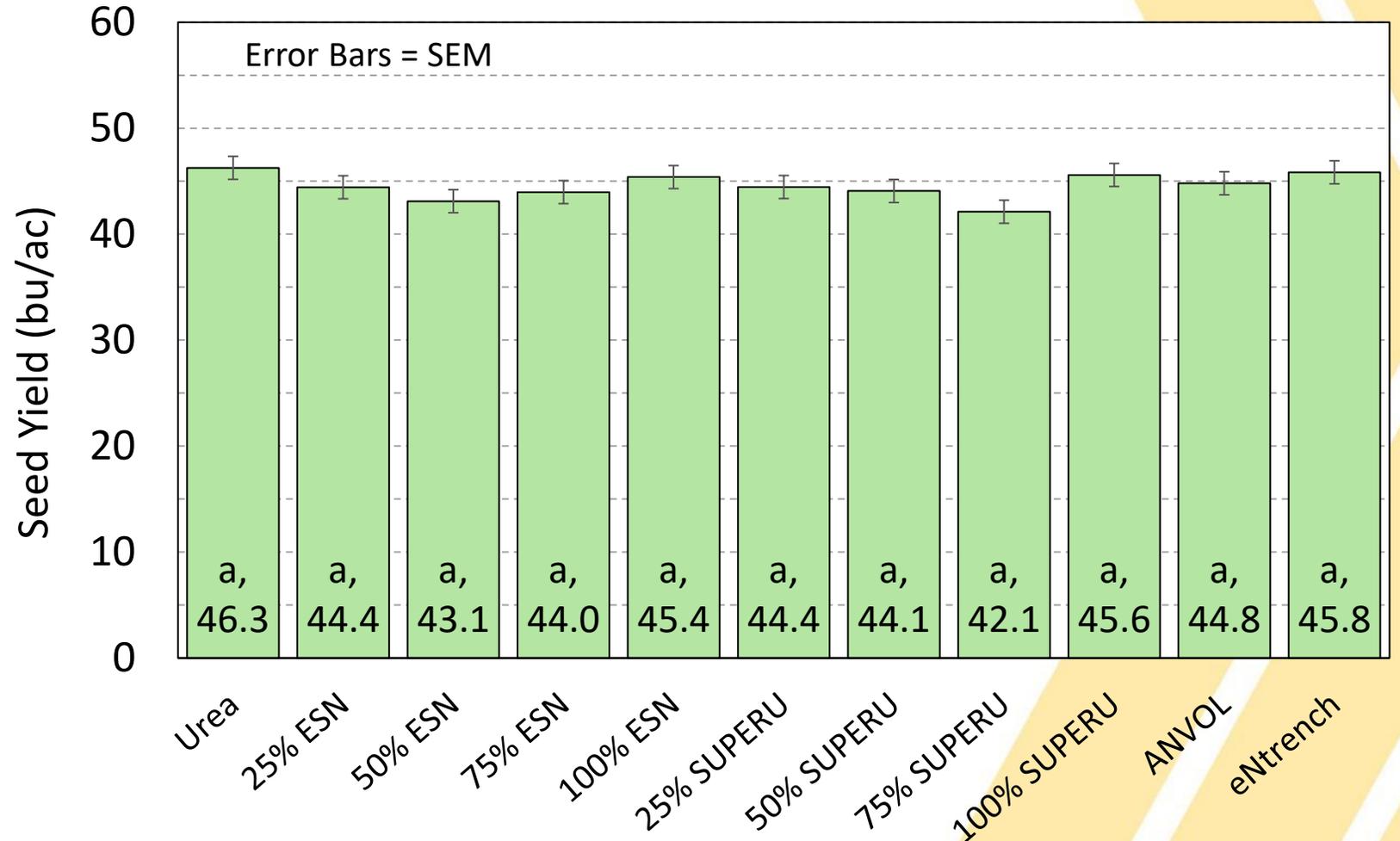
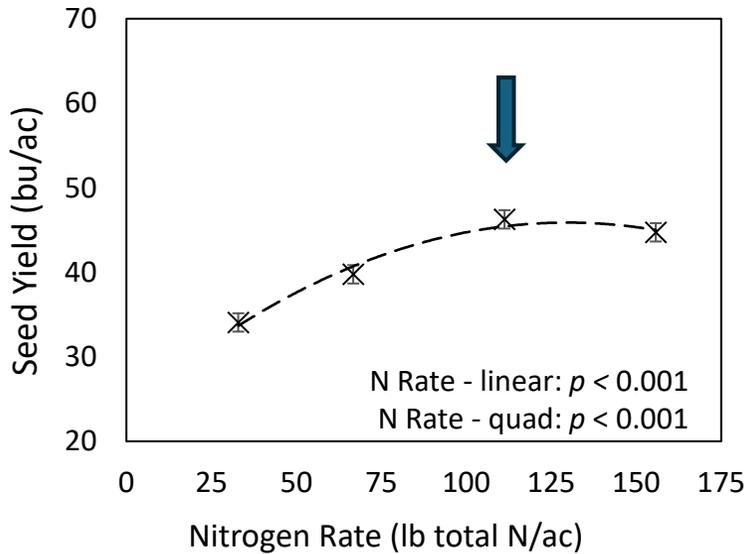
Indian Head (lead)^z, Melfort, Prince Albert, Scott, Swift Current, and Yorkton

^z Similar project completed at Indian Head in 2023

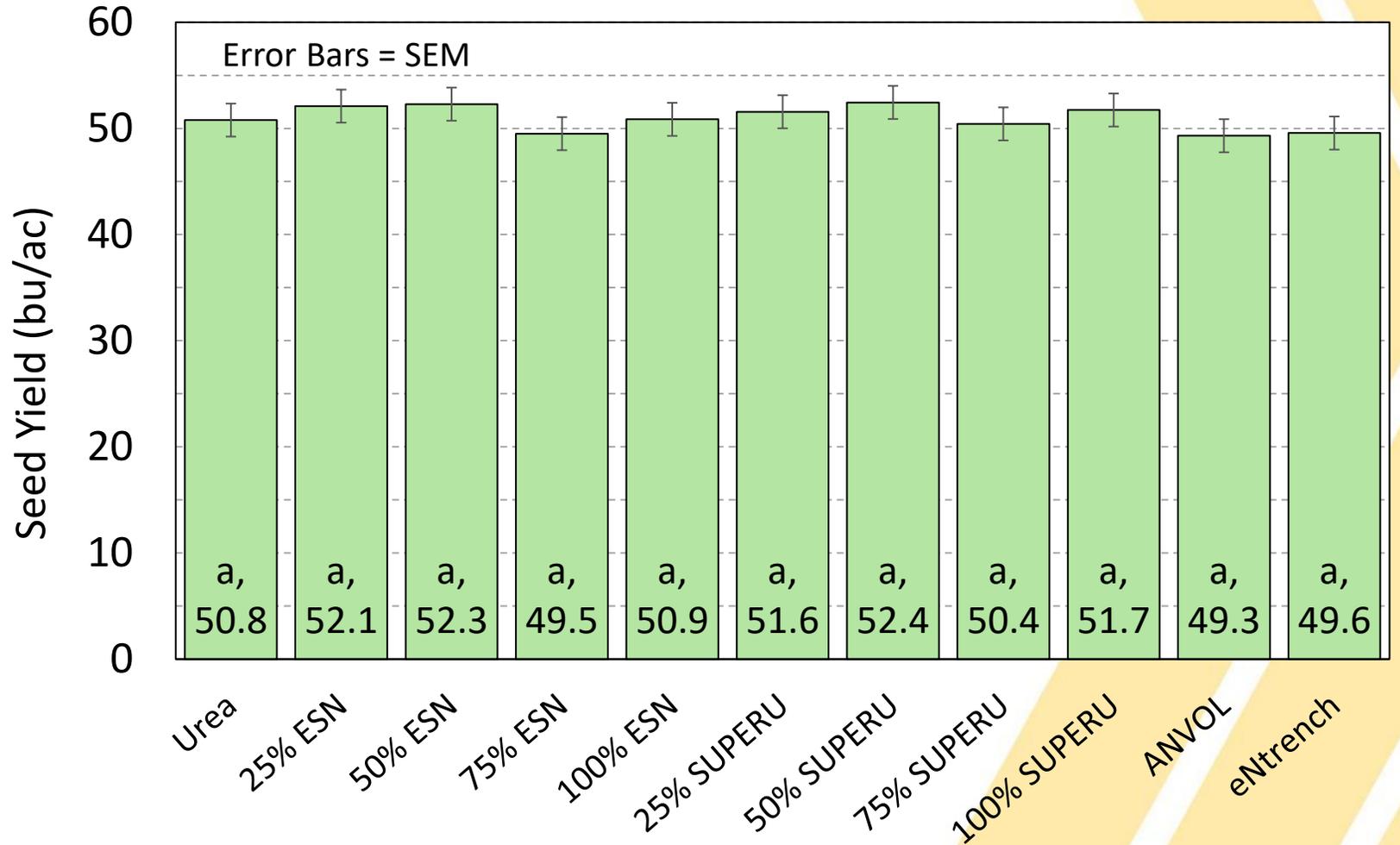
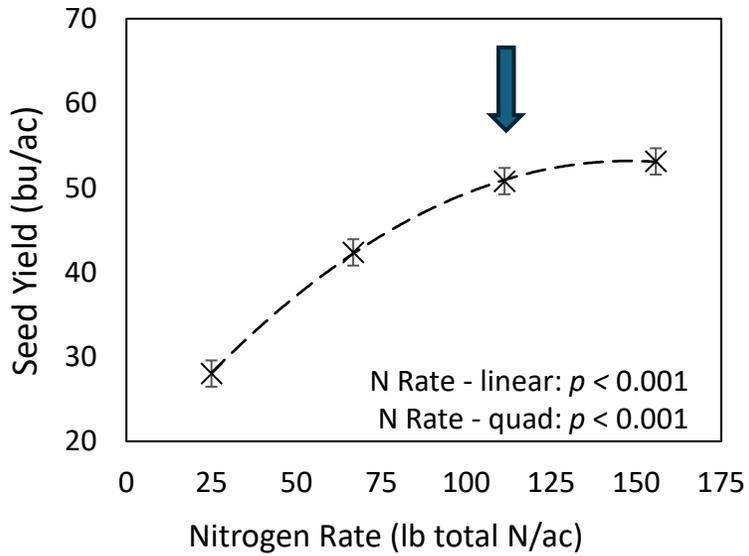
Side-banded Nitrogen Rate & Formulation Effects on Canola Seed Yield (IH-23)



Side-banded Nitrogen Rate & Formulation Effects on Canola Seed Yield (IH-24)



Side-banded Nitrogen Rate & Formulation Effects on Canola Seed Yield (IH-25)



Side-Banded Enhanced Efficiency Nitrogen Fertilizer Formulations: Take Home Messages

- While experience and past research have shown that benefits to EEF N forms **under side-banded placement** can occasionally occur, our recent work overwhelmingly suggests that advantages over untreated urea are uncommon
 - Banding depth was typical of modern no-till drills, commonly ≤ 2 " but varied depending on the location and specific seeding equipment
- With in-soil banding, benefits of controlled release N forms & nitrification inhibitors are most likely in wet years, poorly drain land, and with fall application timing
 - Results may vary and good opportunities for advanced precision agriculture strategies where both forms and rates are varied
- Urease inhibitors are most likely to be beneficial with surface applications or shallow banding in coarse soils and/or extremely dry conditions

PGR Products & Mixes to Improve Crop Safety and Efficacy in Barley 2.0 (SaskBarley-ADOPT)



2025 Barley PGR Mixing Trial (ADOPT-SaskBarley)

Objectives: To demonstrate responses of four malting barley varieties to the PGR options chlormequat-chloride (CC) & trinexepac-ethyl (TE), applied both alone & in combination

Locations: Indian Head, Prince Albert, Melfort, & Scott

Treatments (20)

PGR Treatment (5)

- 1) 1x TE (Moddus)
- 2) 1x CC (Manipulator)
- 3) 0.5x Tank Mix (Mix)
- 4) 1x Tank Mix
- 5) Untreated (UTC)

Variety (4)

- 1) AAC Synergy
- 2) CDC Fraser
- 3) AAC Connect
- 4) CDC Churchill

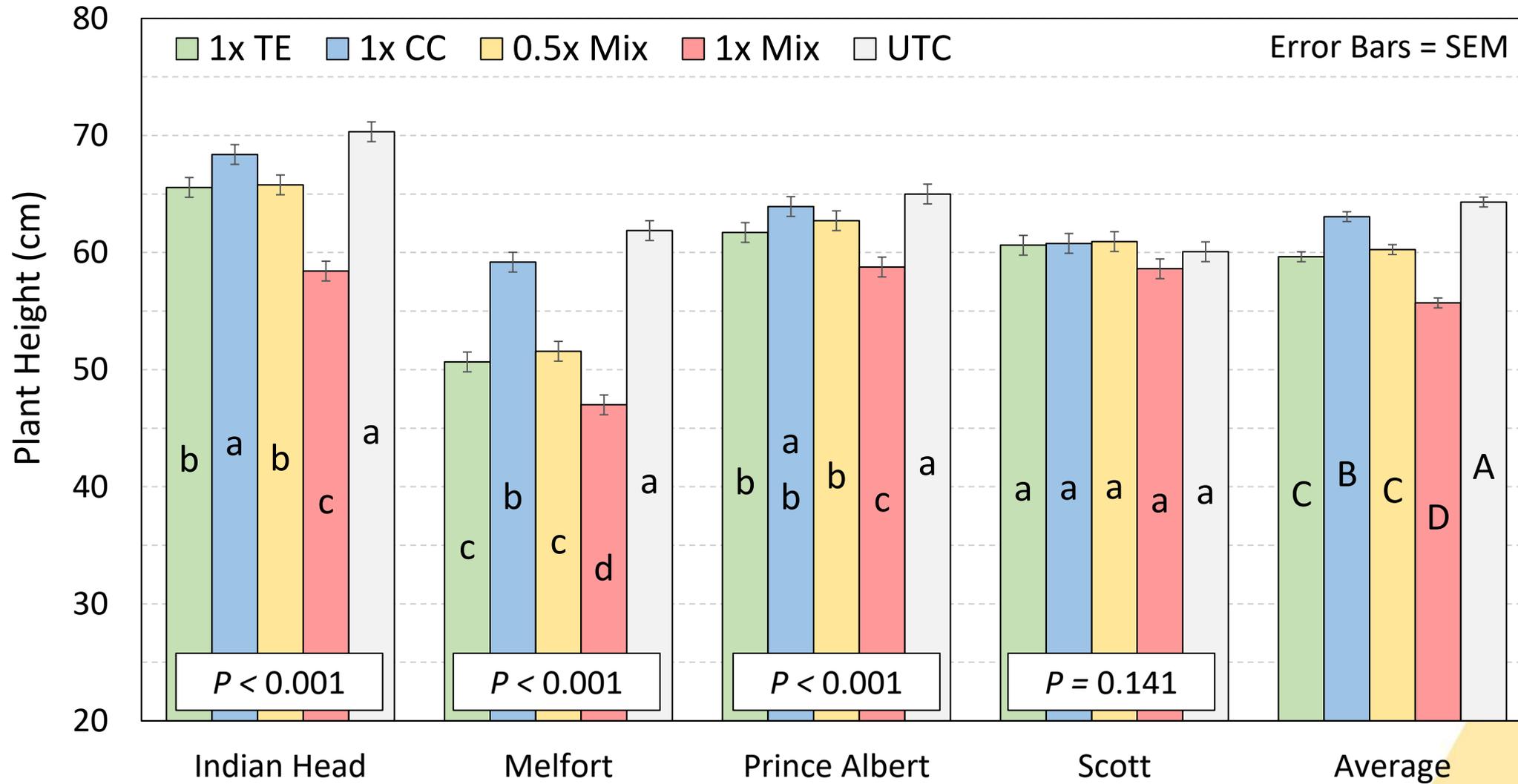
NOTE: Similar trial conducted in 2024 with 7 PGR trts x 3 varieties

Data Collection

- 1) Emergence (UTC only)
- 2) Phytotoxicity Rating
- 3) Plant Height
- 4) Lodging
- 5) Grain Yield
- 6) Test Weight
- 7) TKW
- 8) Plump Kernels
- 9) Protein



Site x PGR Effects on Barley Height (2025)

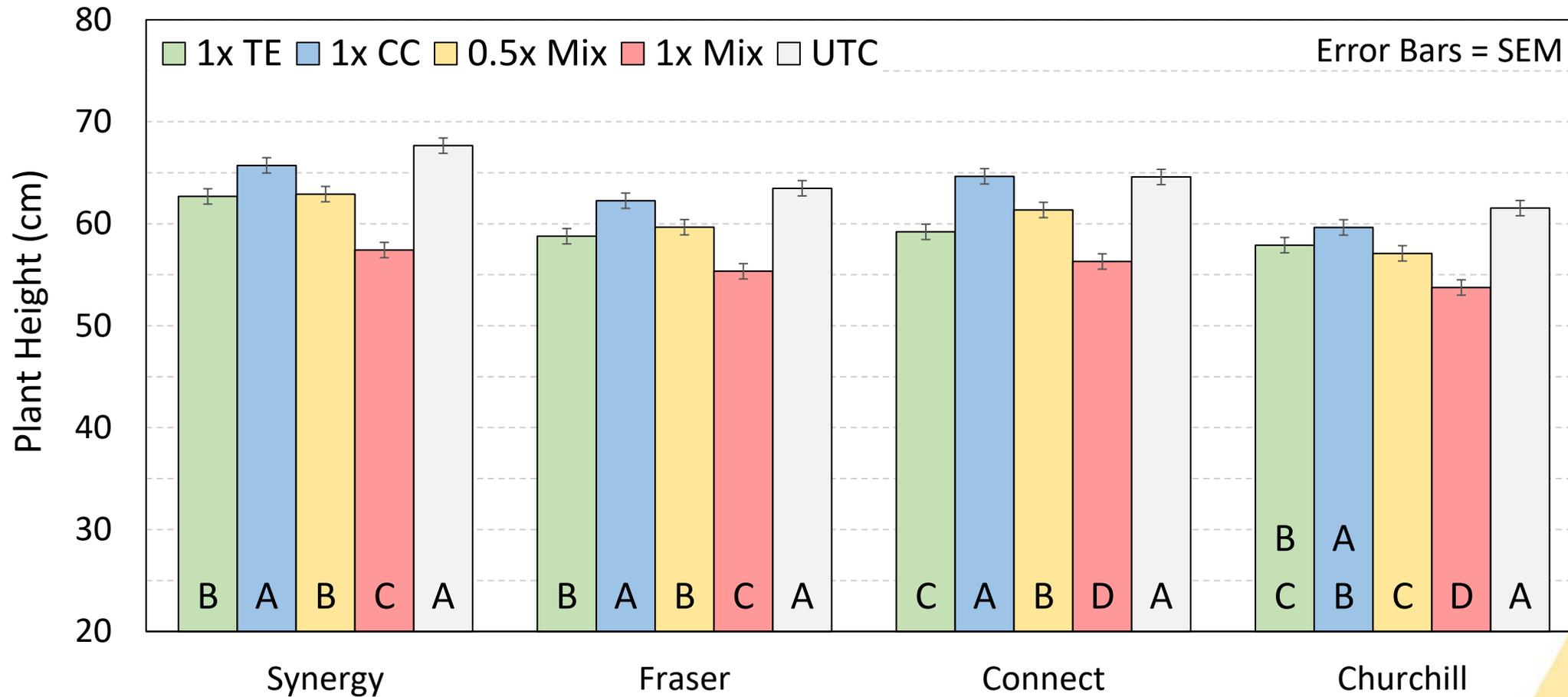


Effect	Pr > F
Site (S)	<0.001
Var (V)	<0.001
S x V	<0.001
PGR (P)	<0.001
S x P	<0.001
V x P	0.438
S x V x P	0.322



PGR x Variety Effects on Barley Height (2025)

Four Location Average (interaction not significant)

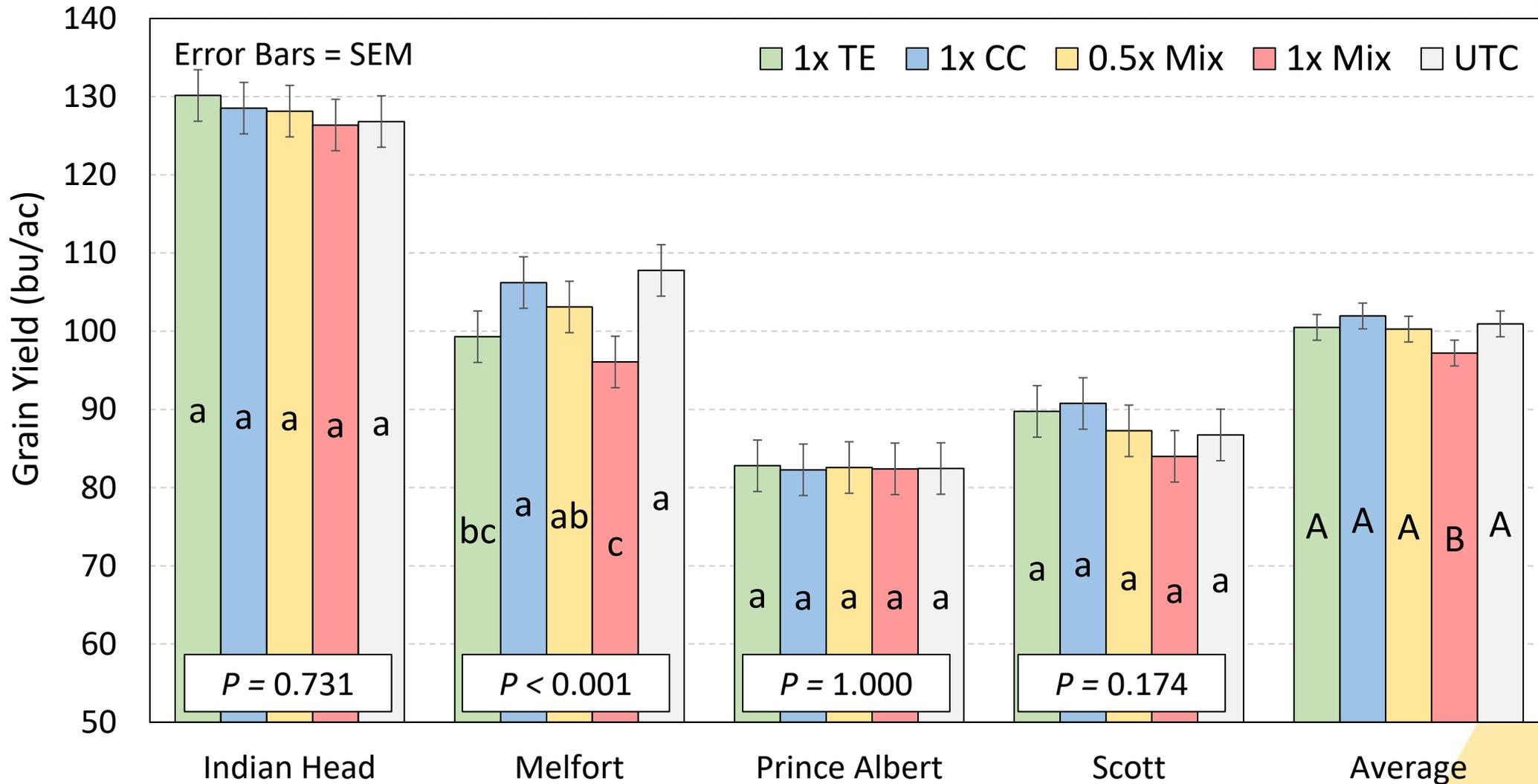


Effect	Pr > F
Site (S)	<0.001
Var (V)	<0.001
S x V	<0.001
PGR (P)	<0.001
S x P	<0.001
V x P	0.438
S x V x P	0.322

NOTE: Treatments only compared within varieties (i.e., letter groupings do not apply across varieties)



Site x PGR Effects on Barley Grain Yield (2025)

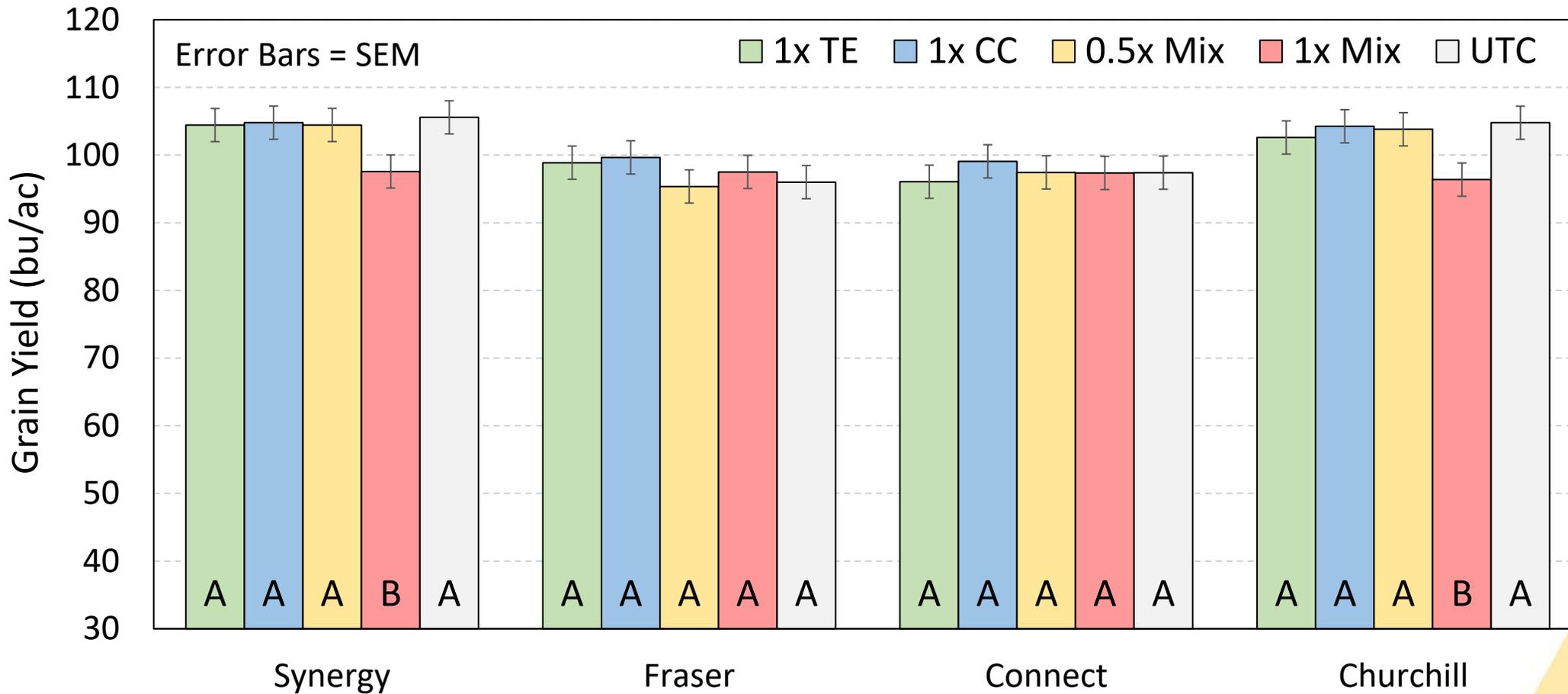


Effect	Pr > F
Site (S)	<0.001
Var (V)	<0.001
S x V	<0.001
PGR (P)	0.024
S x P	0.117
V x P	0.373
S x V x P	0.304



PGR x Variety Effects on Barley Grain Yield (2025)

Four Location Average (interaction not significant)

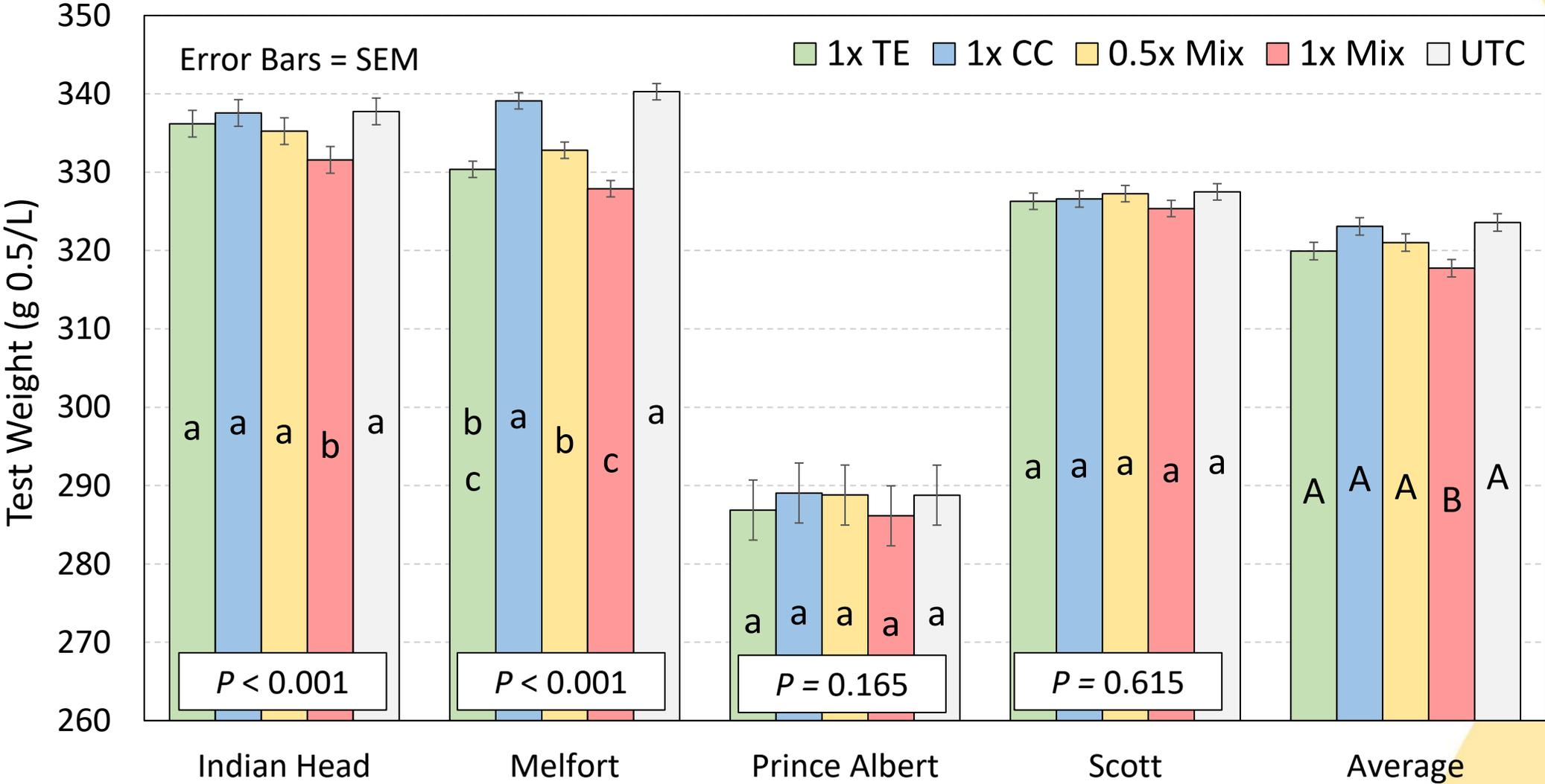


Effect	Pr > F
Site (S)	<0.001
Var (V)	<0.001
S x V	<0.001
PGR (P)	0.024
S x P	0.117
V x P	0.373
S x V x P	0.304



NOTE: Treatments only compared within varieties (i.e., letter groupings do not apply across varieties)

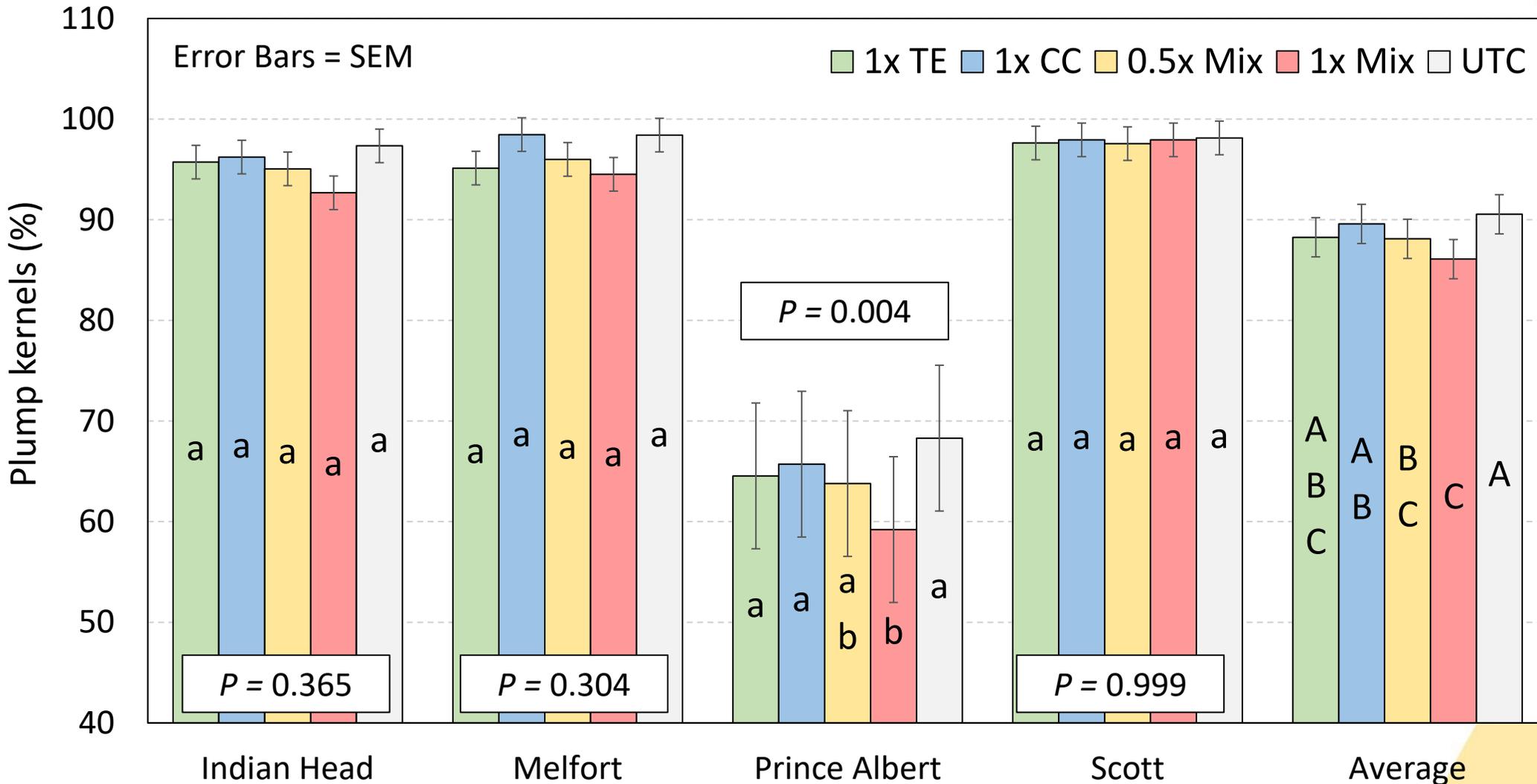
Site x PGR Effects on Barley Test Weight (2025)



Effect	Pr > F
Site (S)	<0.001
Var (V)	<0.001
S x V	<0.001
PGR (P)	<0.001
S x P	<0.001
V x P	0.711
S x V x P	0.369



Site x PGR Effects on Plump Barley Kernels (2025)

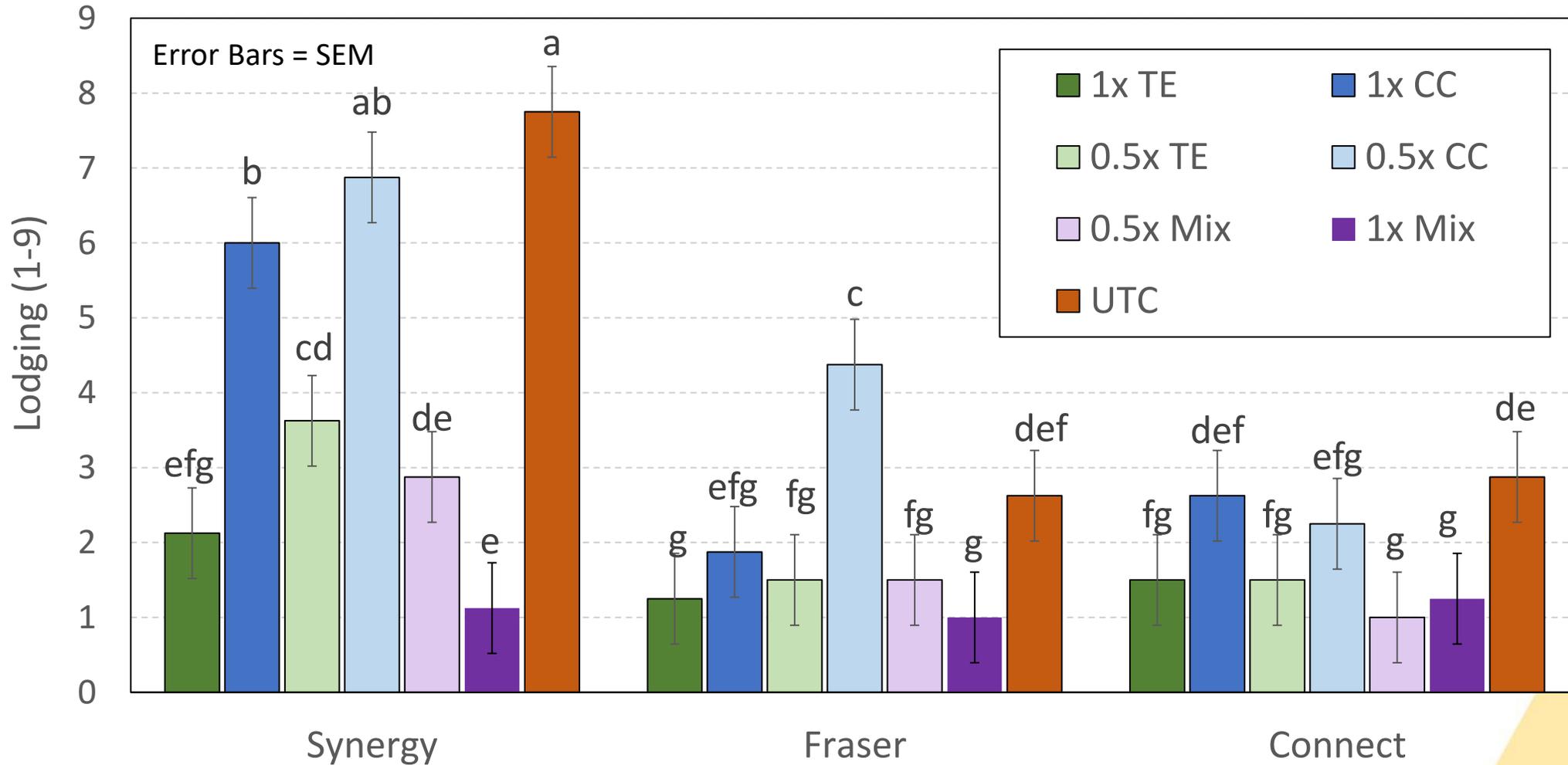


Effect	Pr > F
Site (S)	0.003
Var (V)	0.009
S x V	<0.001
PGR (P)	0.003
S x P	0.720
V x P	0.493
S x V x P	0.368



Variety × PGR Effects on Barley Lodging

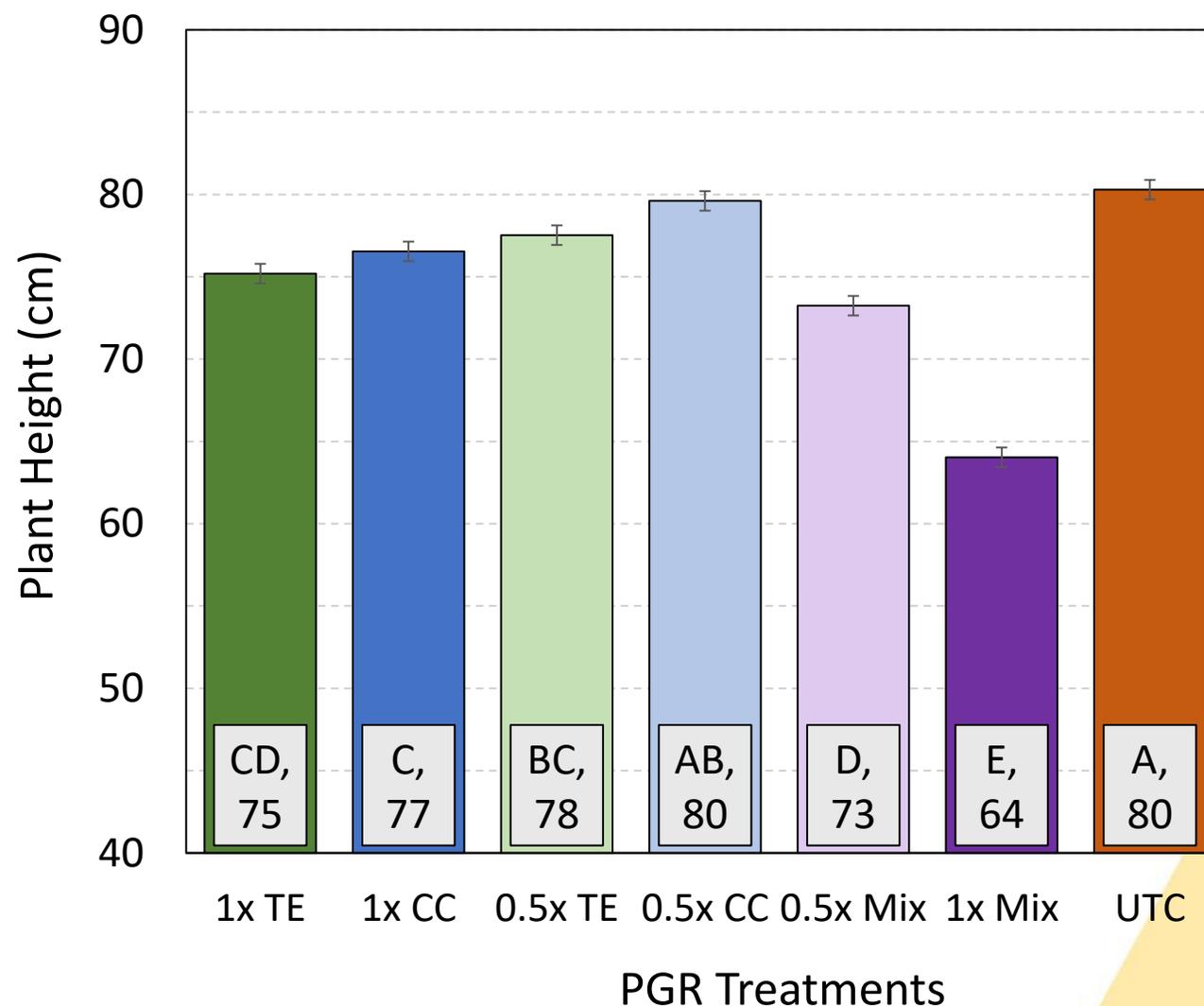
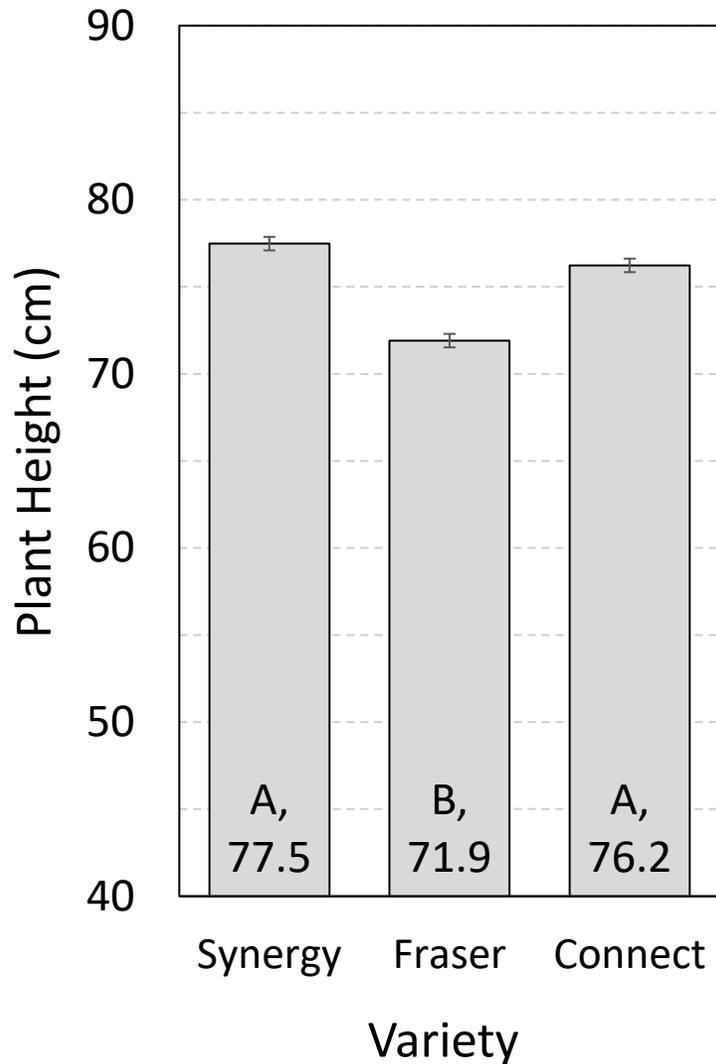
Indian Head 2024



Effect	Pr > F
VAR	<0.001
PGR	<0.001
VAR × PGR	<0.001



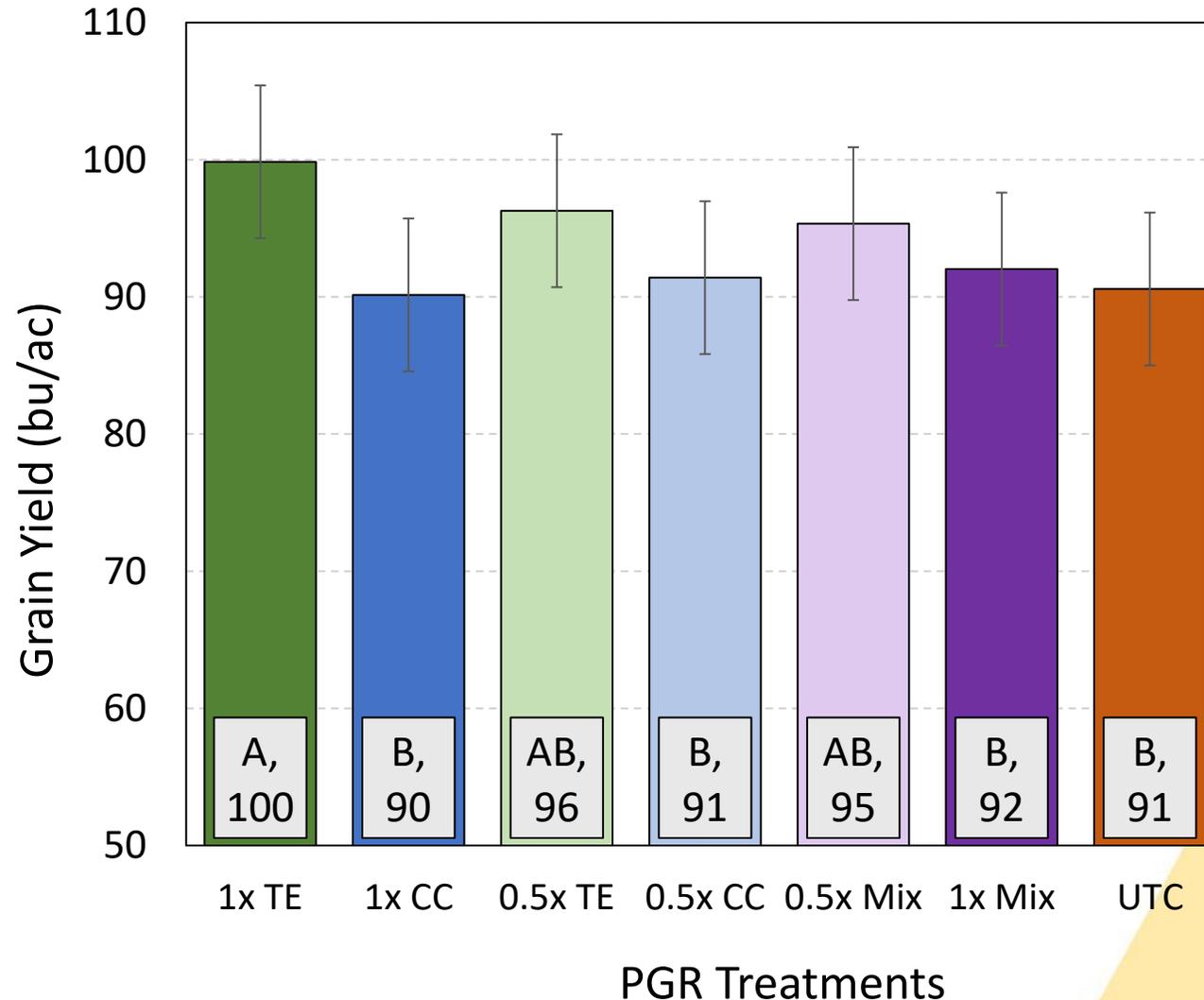
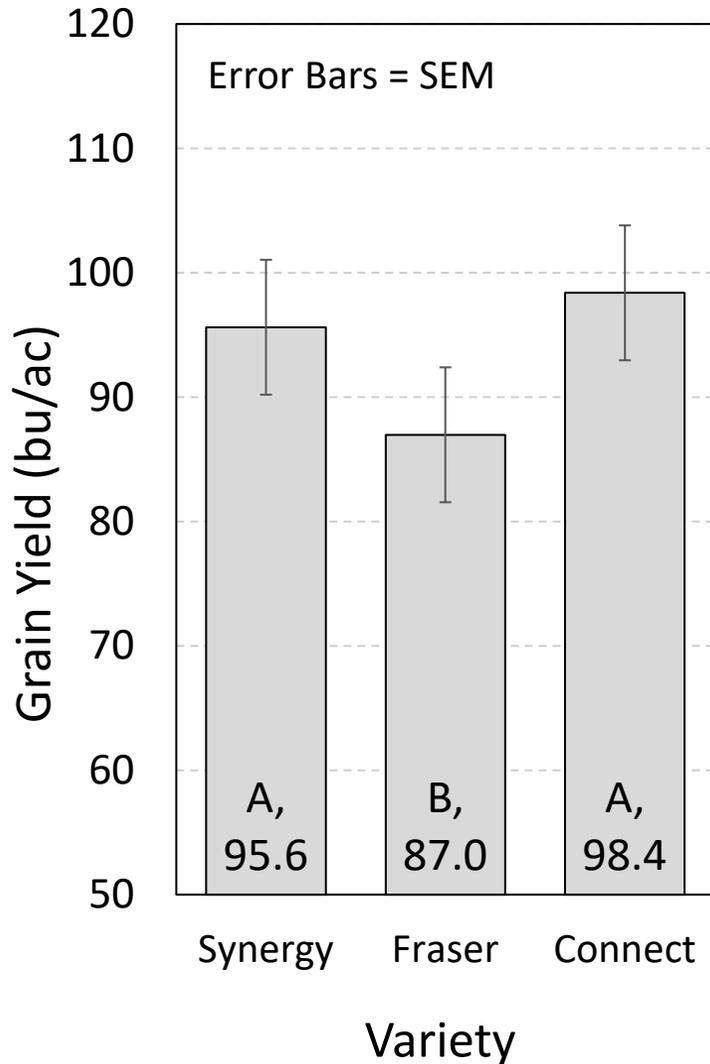
Variety and PGR Effects on Barley Height (IH 2024)



Effect	Pr > F
VAR	<0.001
PGR	<0.001
VAR × PGR	0.135



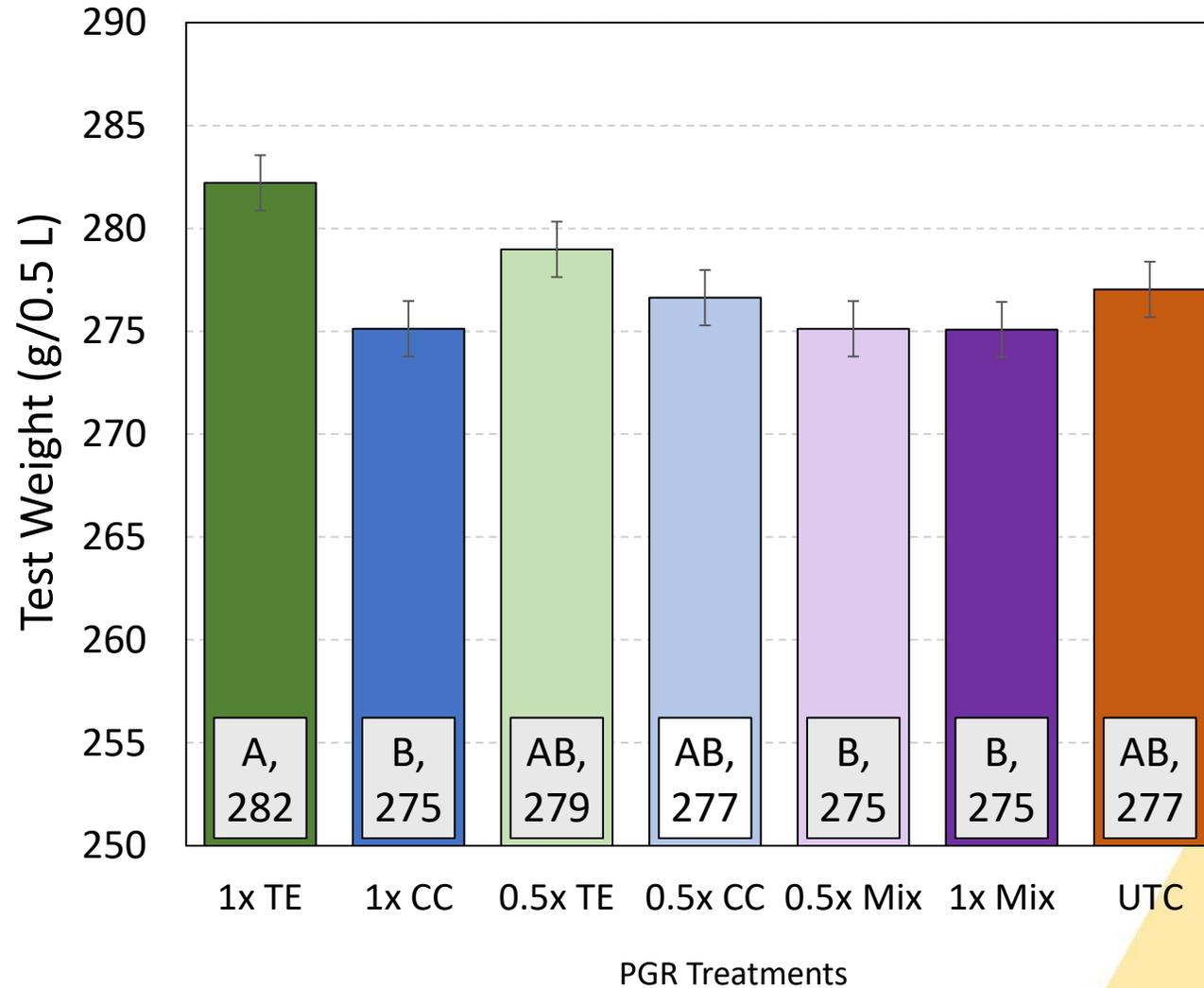
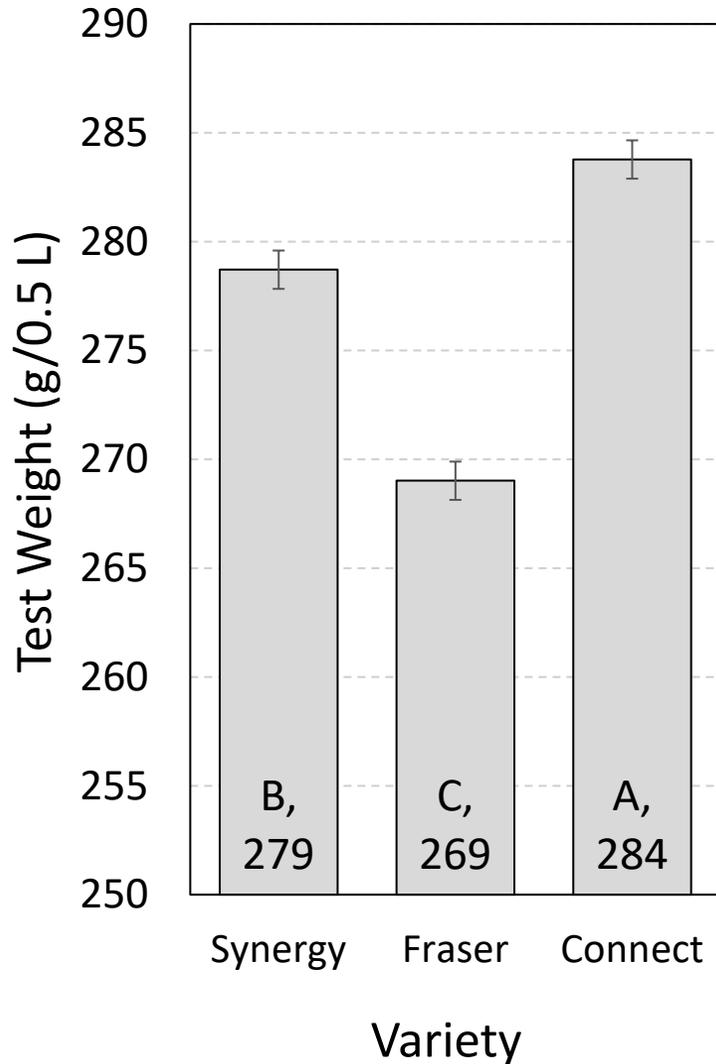
Variety and PGR Effects on Barley Yield (IH 2024)



Effect	Pr > F
VAR	<0.001
PGR	<0.001
VAR × PGR	0.413



Variety and PGR Effects on Barley Weight (IH 2024)



Effect	Pr > F
VAR	<0.001
PGR	0.003
VAR × PGR	0.003



PGR Product Mixes in Barley: Take Home Messages

- **USE CAUTION**: PGR have shown to be quite beneficial on barley when the potential for lodging is high, but the possibility of negative effects on yield and quality under dry or stressful conditions is substantial
- Trinexapac-ethyl has provided more consistent benefits with barley than chlormequat-chloride, but has not been safer regarding the potential for negatively affecting yield or quality
- Tank-mixing TXP and CC at half rates for each product has not shown any consistent nor meaningful benefits for either efficacy or safety
 - Despite providing the greatest reductions in height and lodging, in addition to being expensive, the full rate tank mix has a high likelihood of reducing grain yield & quality
- **Beware of market restrictions for chlormequat chloride – no known concerns with Trinexapac-ethyl**

Preview: Optimal Chickpea Seeding Practices and Cultivar Selection (2025-2026; SaskPulse)



Optimum Chickpea Seeding Practices (SaskPulse)

Objectives: To assess the yield performance and adaptability of three chickpea varieties (CDC Lancer, CDC Pasqua and CDC Orkney) under different combinations of seeding dates and seeding rates

Locations: Yorkton (lead), Indian Head, Melfort, & Swift Current

Treatments (18)

Seeding Date (2)

- 1) 1st week of May
- 2) 3rd week of May

Variety (3)

- 1) CDC Lancer (M)
- 2) CDC Pasqua (L)
- 3) CDC Orkney (ML)

Seed Rates (3)

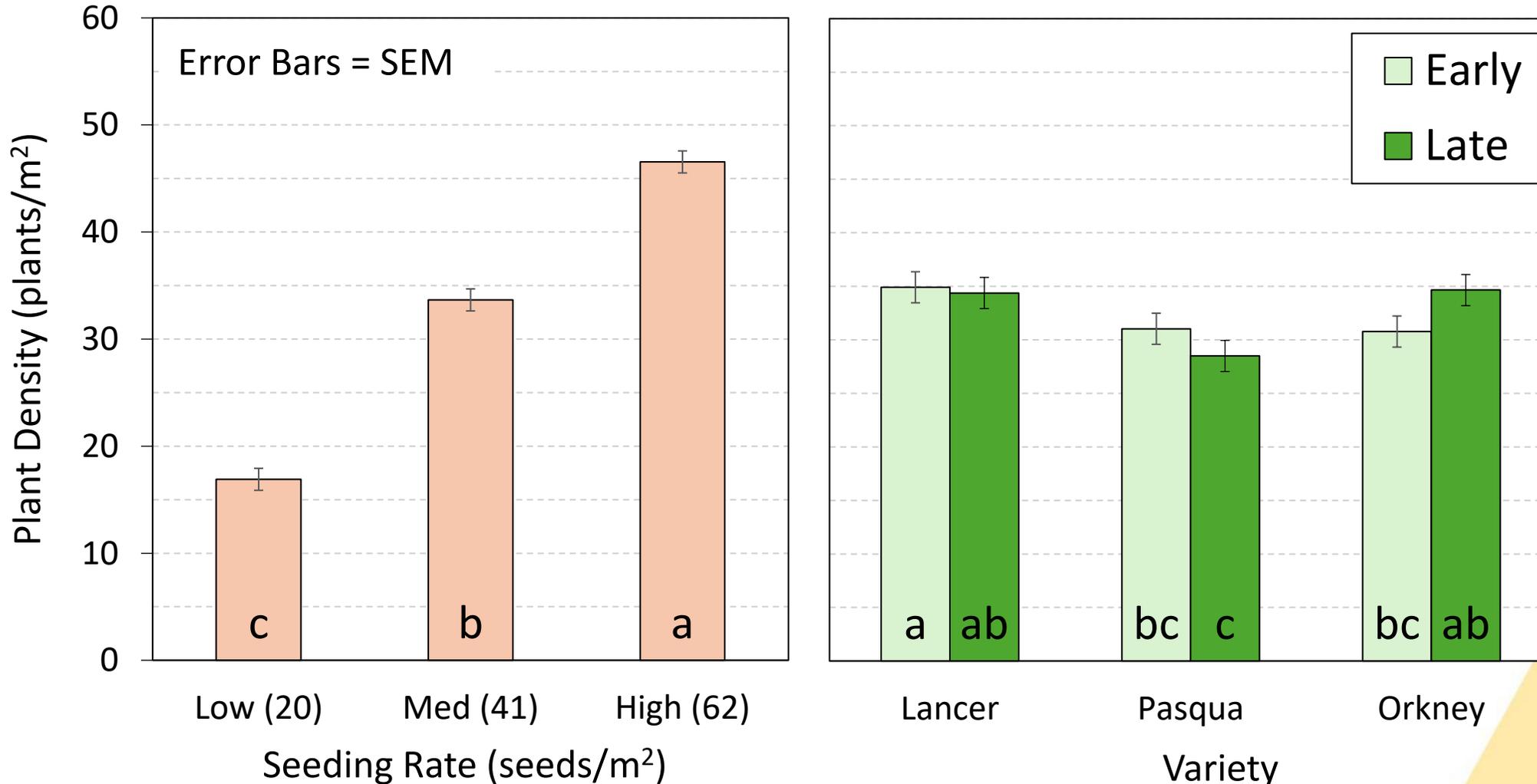
- 1) Low (20 seeds/m²)
- 2) Medium (41 seeds/m²)
- 3) High (62 seeds/m²)

Data Collection

- 1) Plant Density
- 2) Plant Height
- 3) Health Ratings
- 4) Disease Ratings
- 5) Maturity
- 6) Seed Yield
- 7) Seed Size



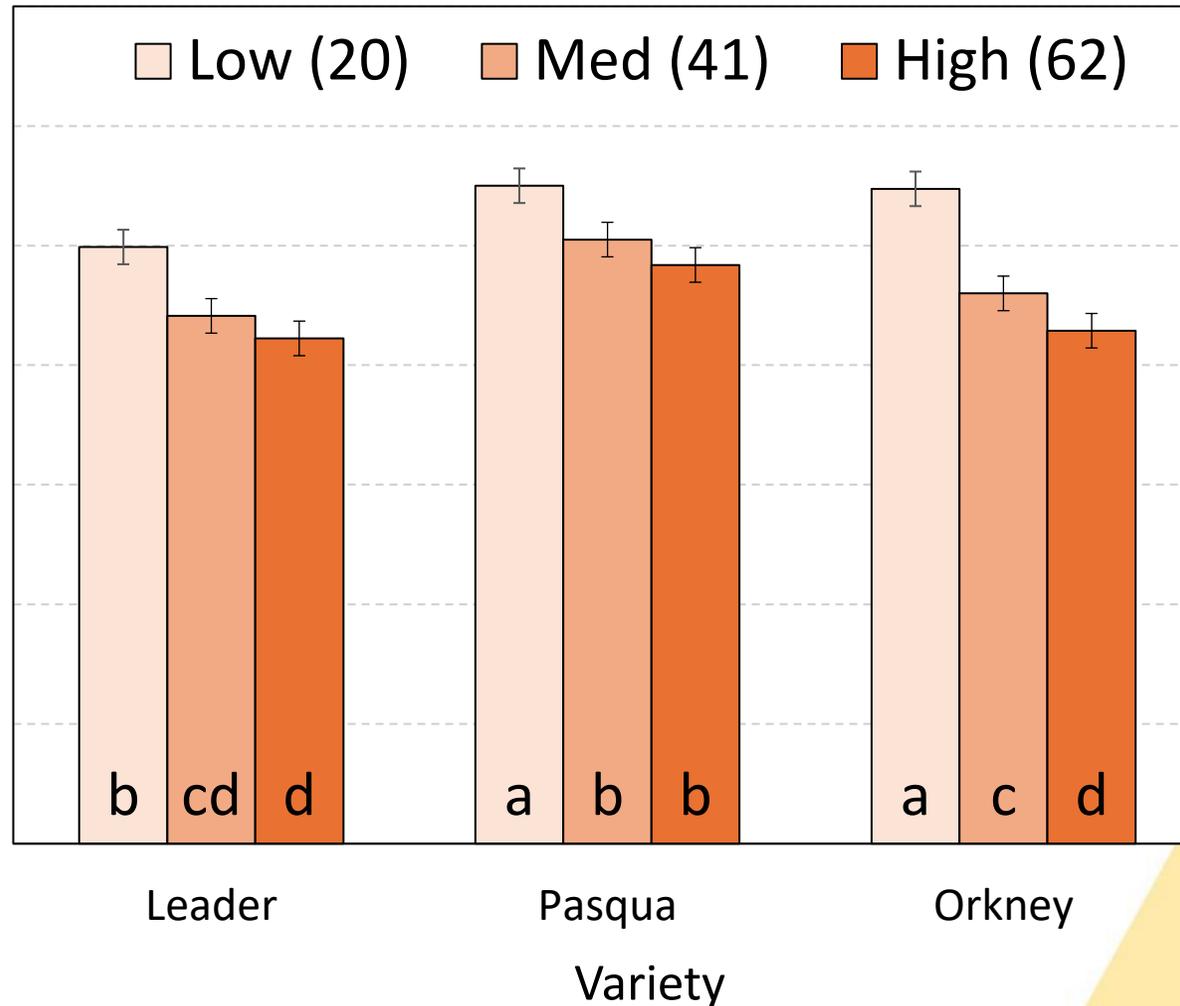
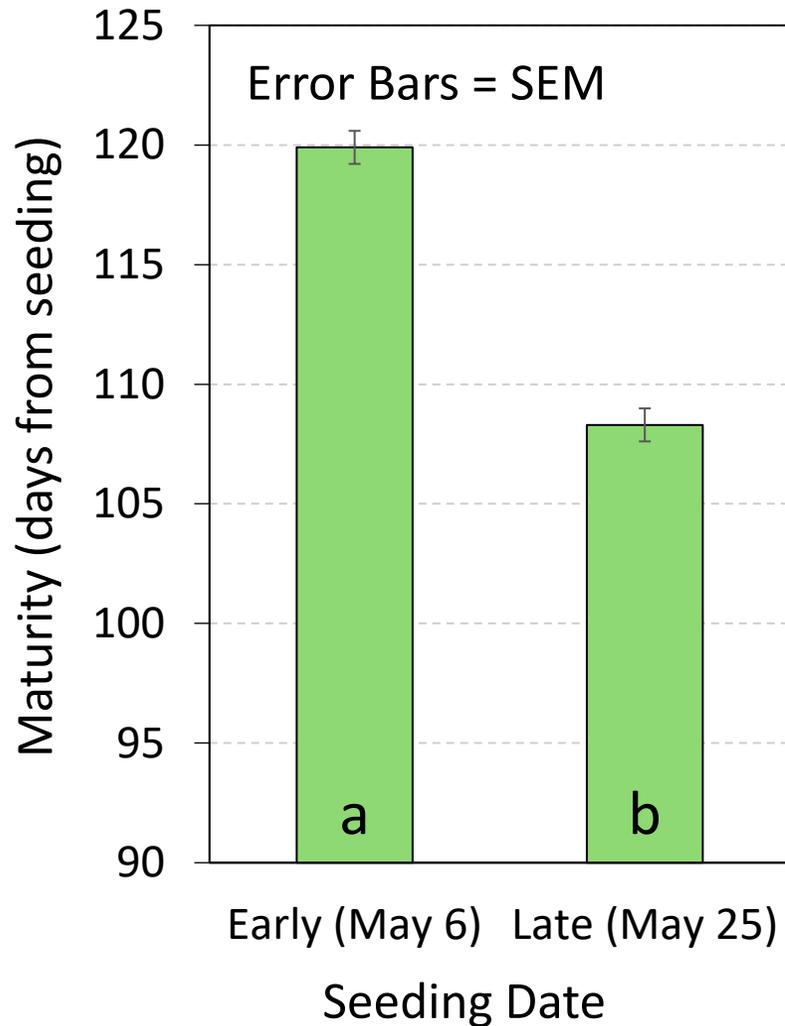
Preliminary Treatment Effects on Chickpea Establishment (Indian Head – 2025)



Effect	Pr > F
DATE (D)	0.865
VAR (V)	0.002
D x V	0.044
RATE (R)	<0.001
D x R	0.255
V x R	0.513
D x V x R	0.429



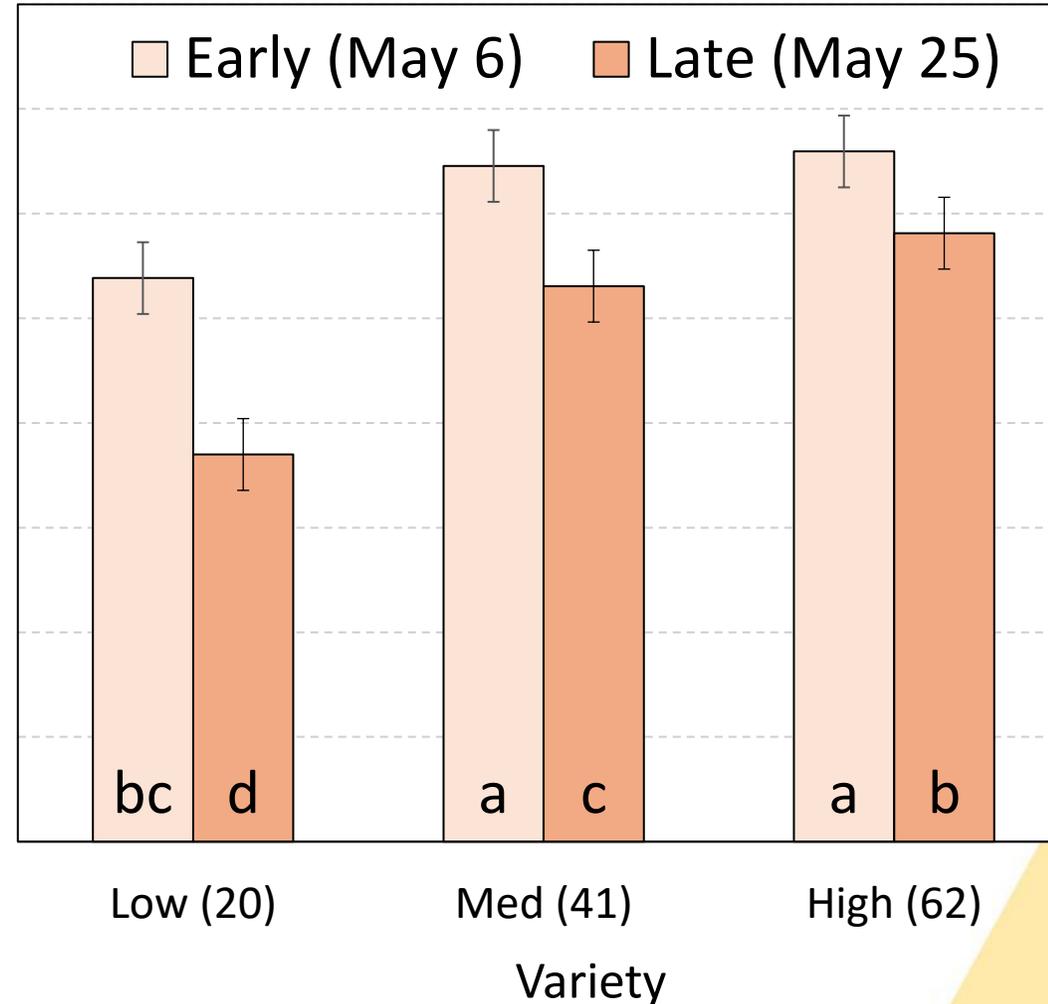
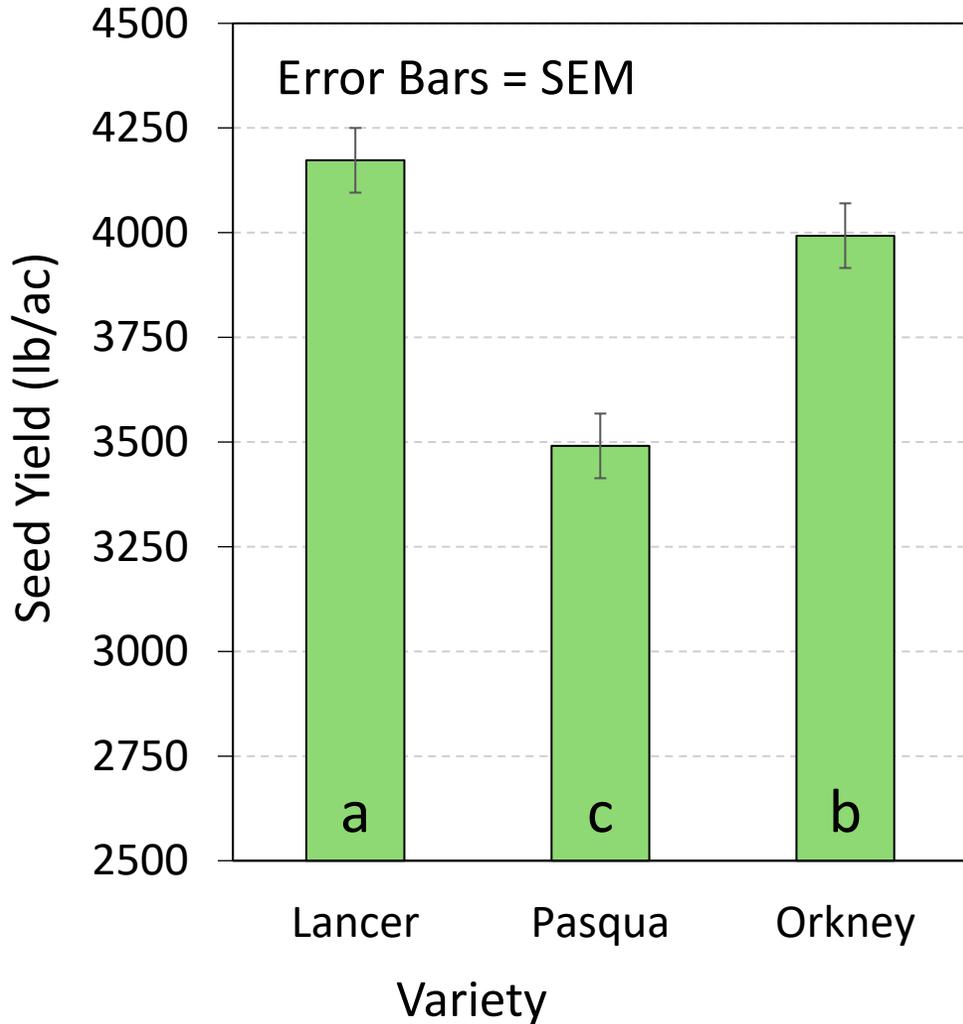
Preliminary Treatment Effects on Chickpea Days to Maturity (Indian Head – 2025)



Effect	Pr > F
DATE (D)	<0.001
VAR (V)	<0.001
D x V	0.427
RATE (R)	<0.001
D x R	0.705
V x R	0.015
D x V x R	0.922



Preliminary Treatment Effects on Chickpea Seed Yield (Indian Head – 2025)



Effect	Pr > F
DATE (D)	0.017
VAR (V)	<0.001
D x V	0.194
RATE (R)	<0.001
D x R	0.008
V x R	0.578
D x V x R	0.172





THANK YOU

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