

Wheat Production Update

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NC

**COOPERATIVE
EXTENSION**

Maturity by Planting Date by Management

- Plant early varieties late in the planting window
- Plant later varieties early in the planting window
- When is the latest I can plant wheat in North Carolina??

Methodology

- Three varieties of wheat were planted using a Model 606N Great Plains grain drill on three different planting dates.
 - October 28th, 2021 131 lb/A seeding rate
 - November 15th, 2021 144 lb/A seeding rate
 - December 2nd, 2021 158 lb/A seeding rate
- After planting, plots were divided for normal management practices verses intense management practices.
- Treatments were replicated four times per planting date for each variety in a Randomized complete block design.

Products Used

- Agrimaxx 503, Early maturing variety
- Agrimaxx 505, Medium maturing variety
- Agrimaxx 516, Late maturing variety
- Gramoxone at 3 pints/A
- Anthem Flex at 4 ounces/A
- Fitness at 4 ounces/A
- Quelex at 0.75 ounces/A
- Warrior II at 1.9 ounces/A
- Sphaerex at 7.3 ounces/A

Treatments and Timings

Normal management Practices

Gramoxone preplant at each planting

250 lbs. 21-0-2-24 1/28/2022

200 lbs. 0-0-60 1/28/2022

100 lbs. 34-0-0-11 3/7/2022

100 lbs. 21-0-0-24 3/7/2022

Quelex 3/7/2022

Fiitness 4/4/2022

Warrior II 4/15/2022

Sphaerex 4/15/2022

Intense Management Practices

Gramoxone preplant at each planting

300 lbs. 10-0-30 preplant at each planting

Anthem Flex applied at Spike Stage for each planting Date 11/15, 12/2, and 12/29

200 lbs. 21-0-2-24 1/28/2022

50 lbs. 0-0-60 1/28/2022

100 lbs. 34-0-0-11 3/7/2022

100 lbs. 21-0-0-24 3/7/2022

100 lbs. Kmag 3/7/2022

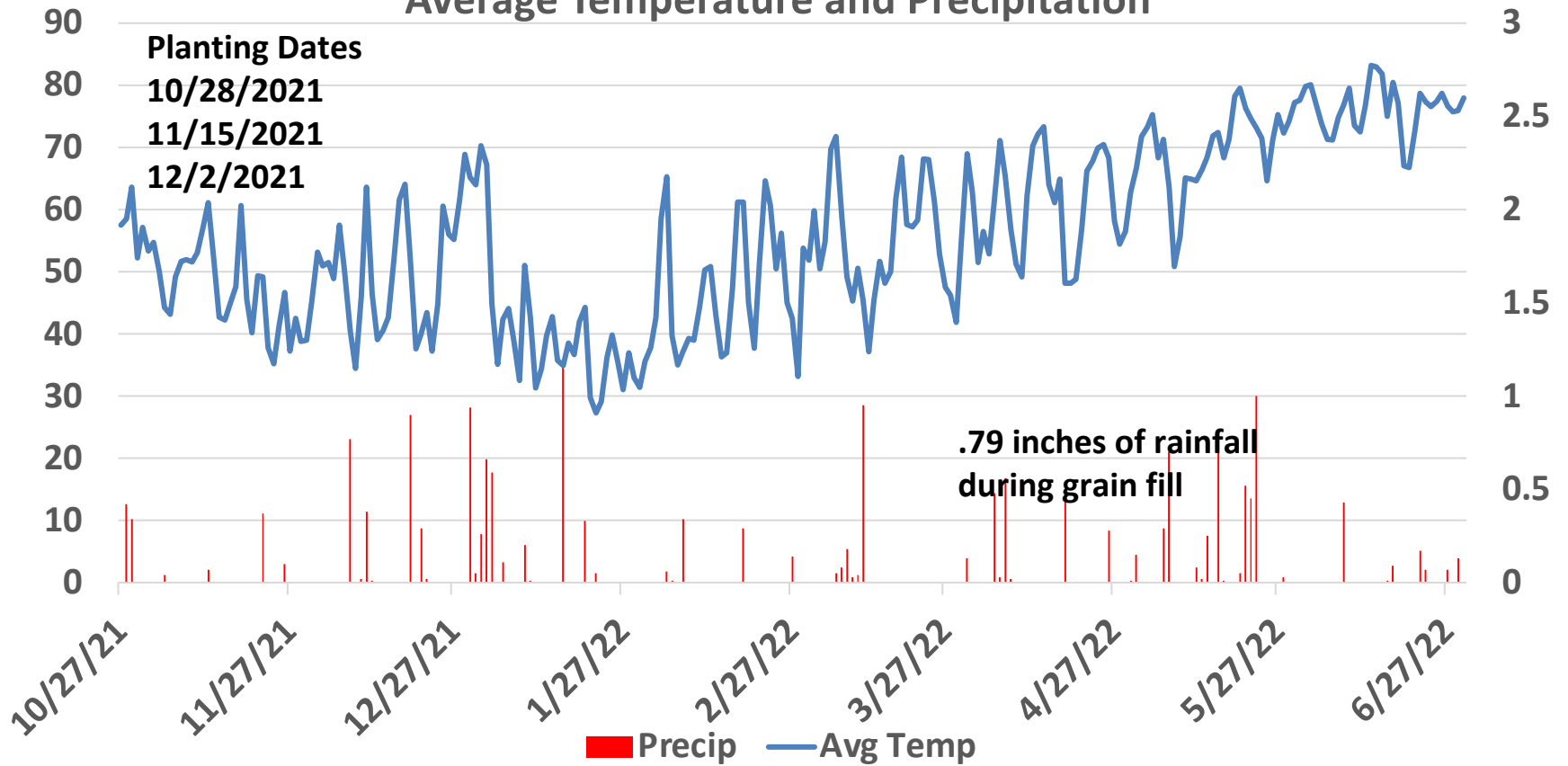
Quelex 3/7/2022

Fiitness 4/4/2022

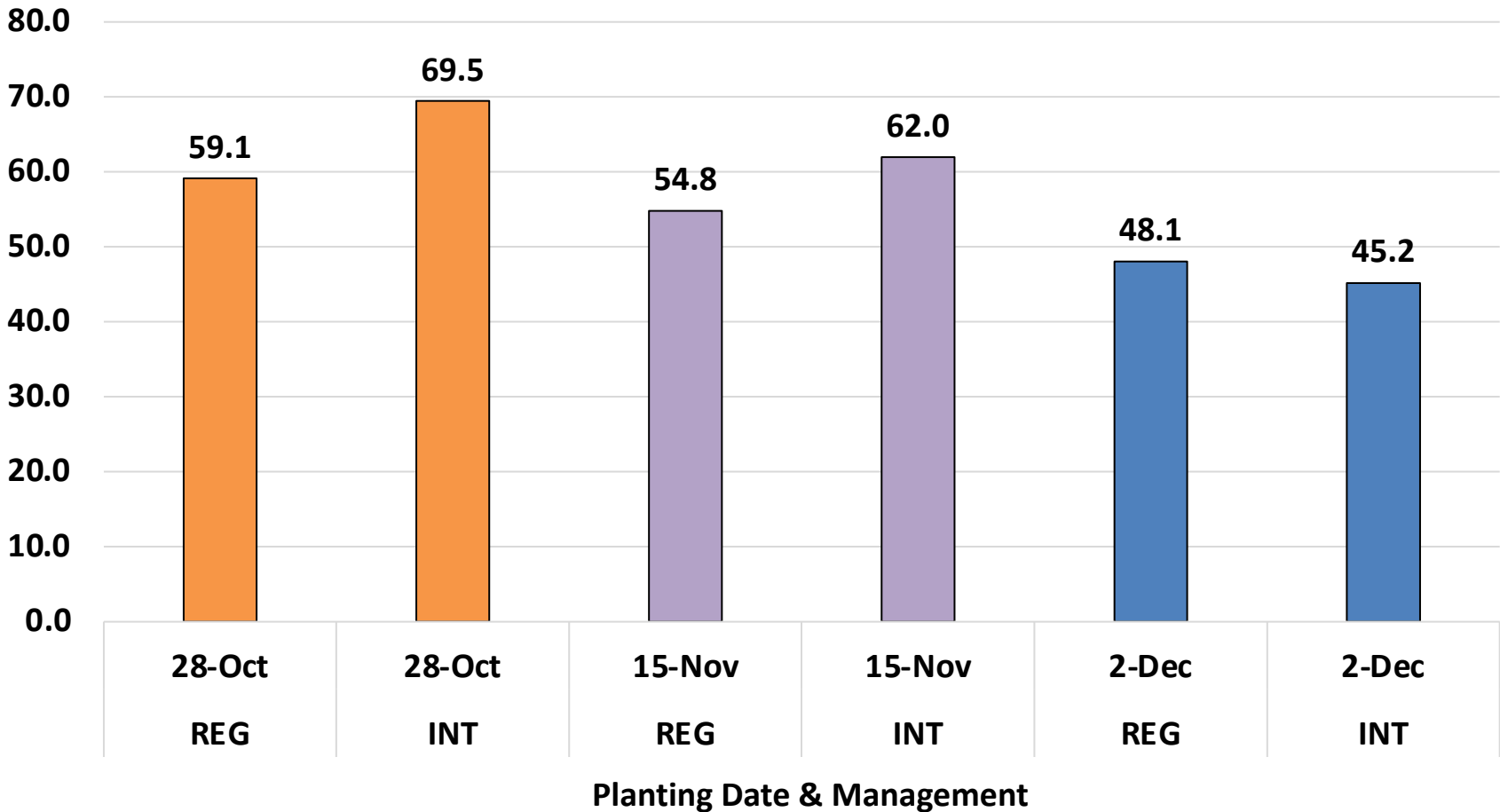
Warrior II 4/15/2022

Sphaerex 4/15/2022

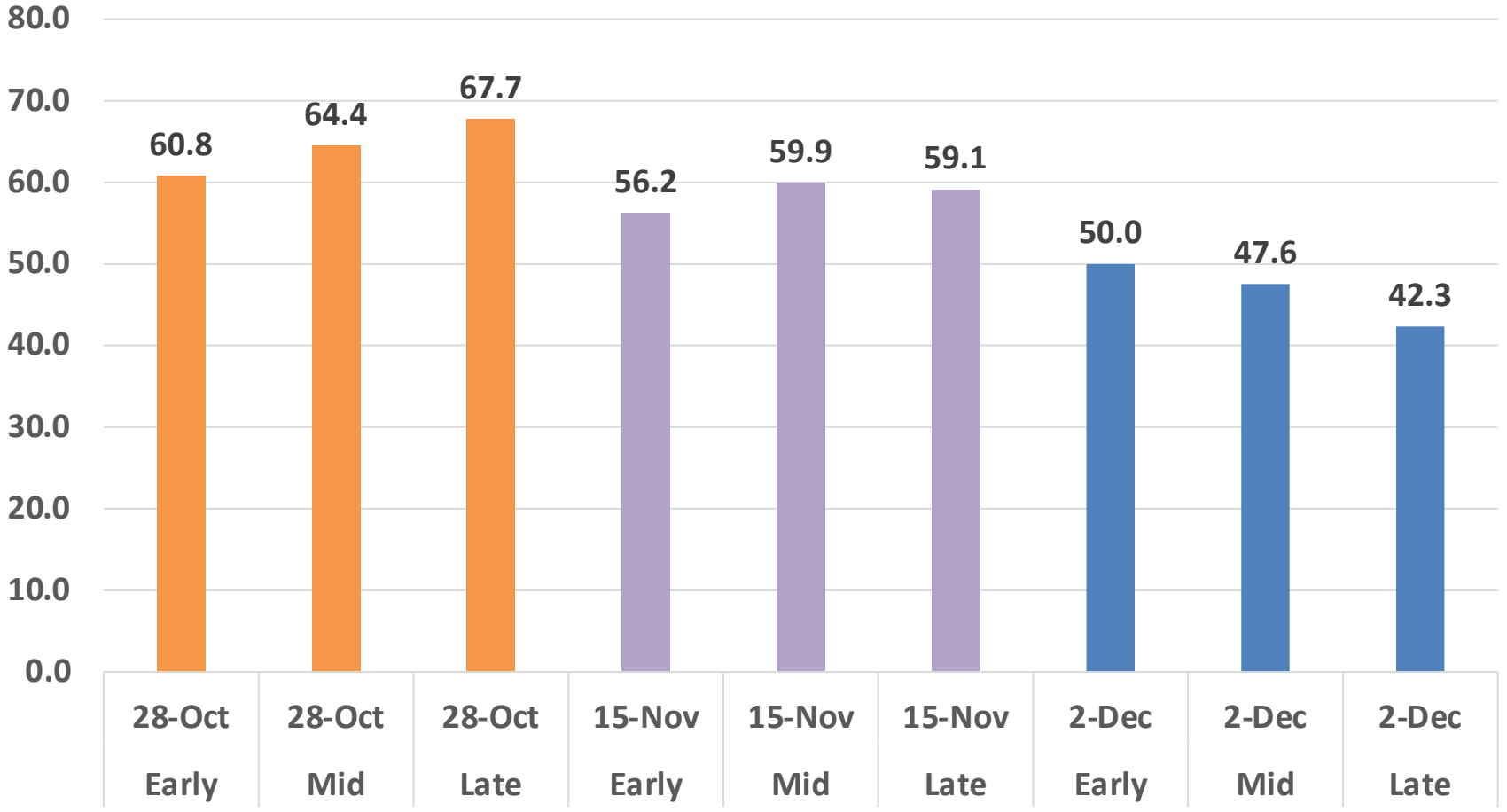
Intense Wheat Management Trial Average Temperature and Precipitation



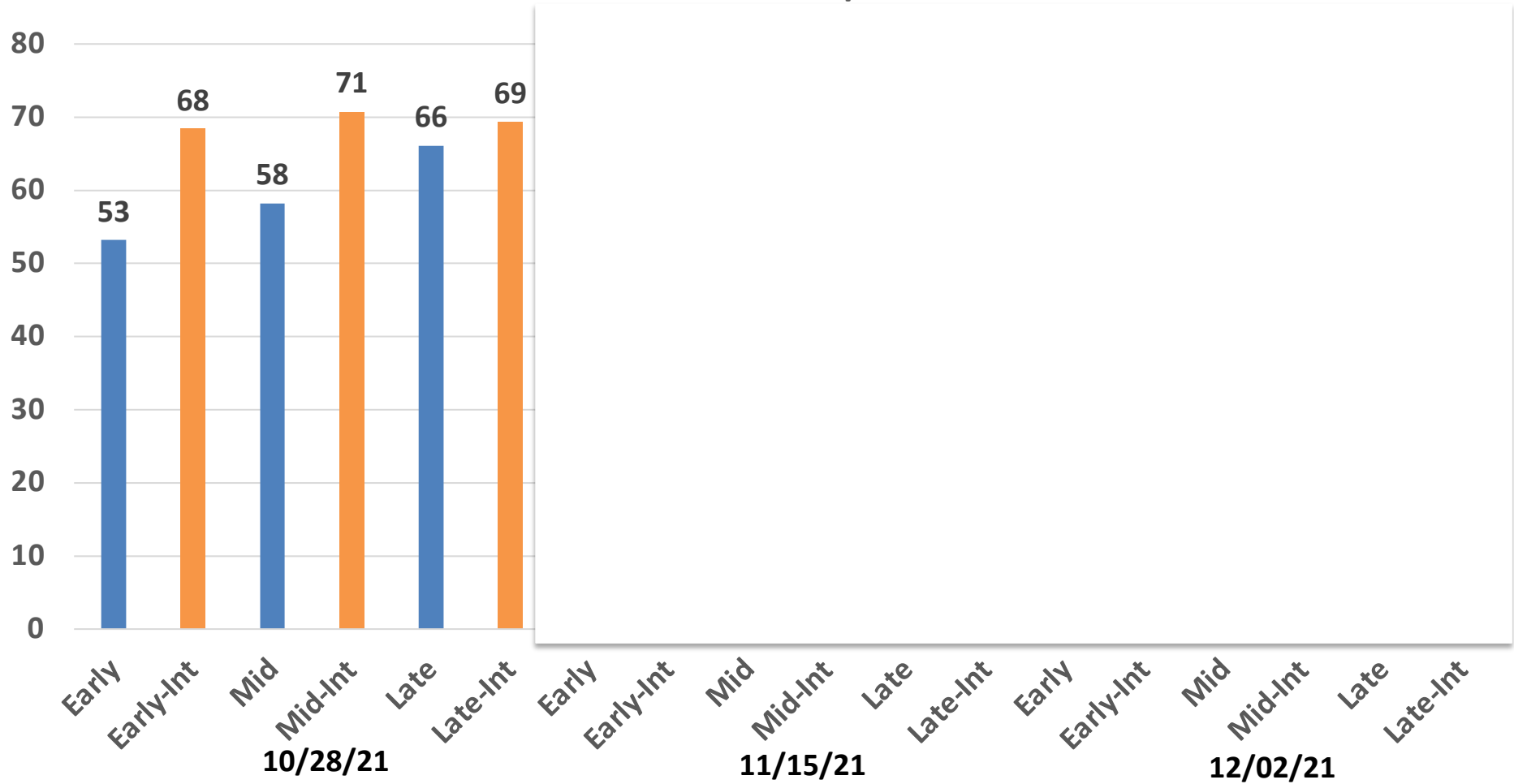
**Yield Response to Planting Date and Fertility Management by
Planting Date and Management
Yield bushels/A**



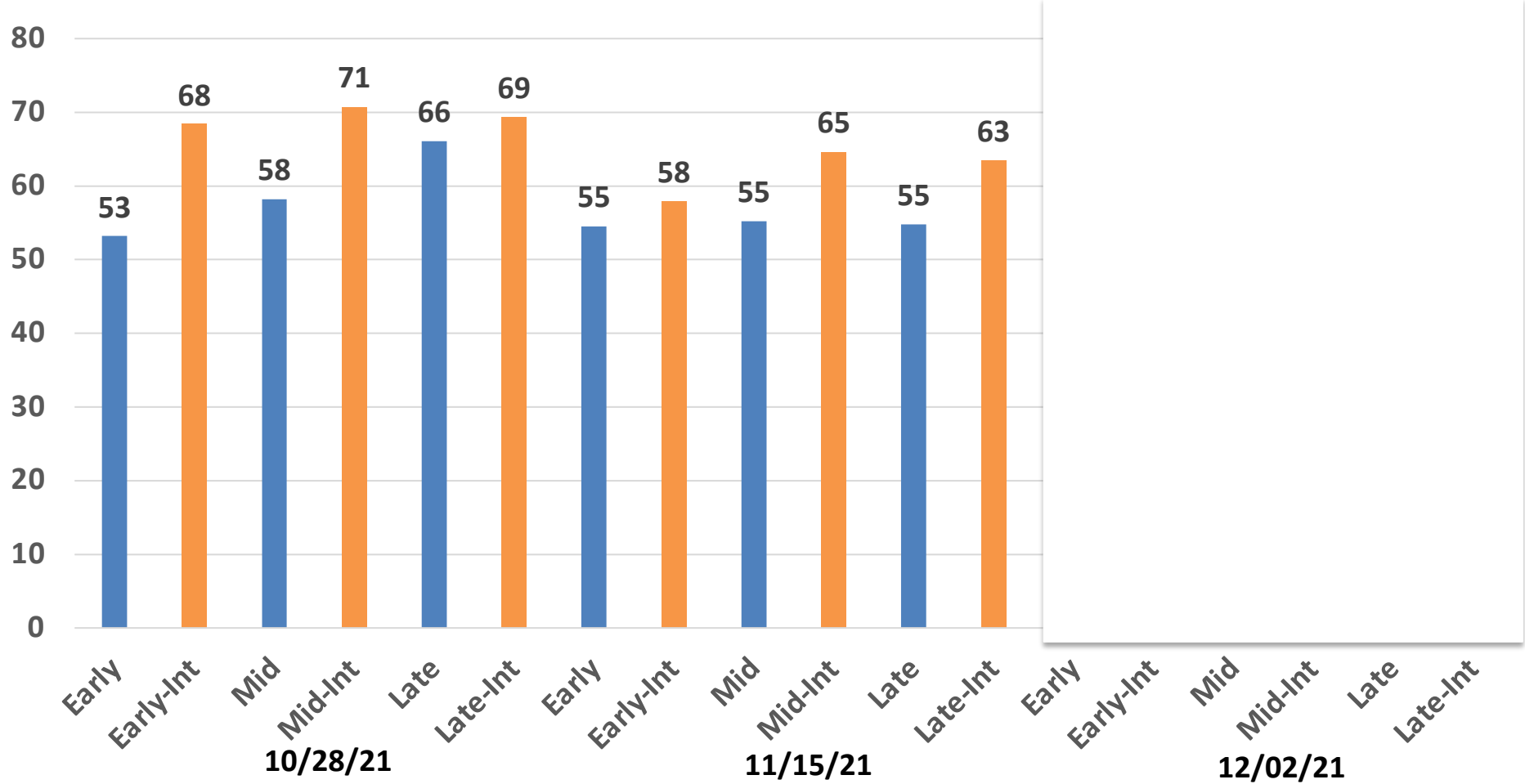
Yield Response to Planting Date and Fertility Management by Maturity yield bushels/A



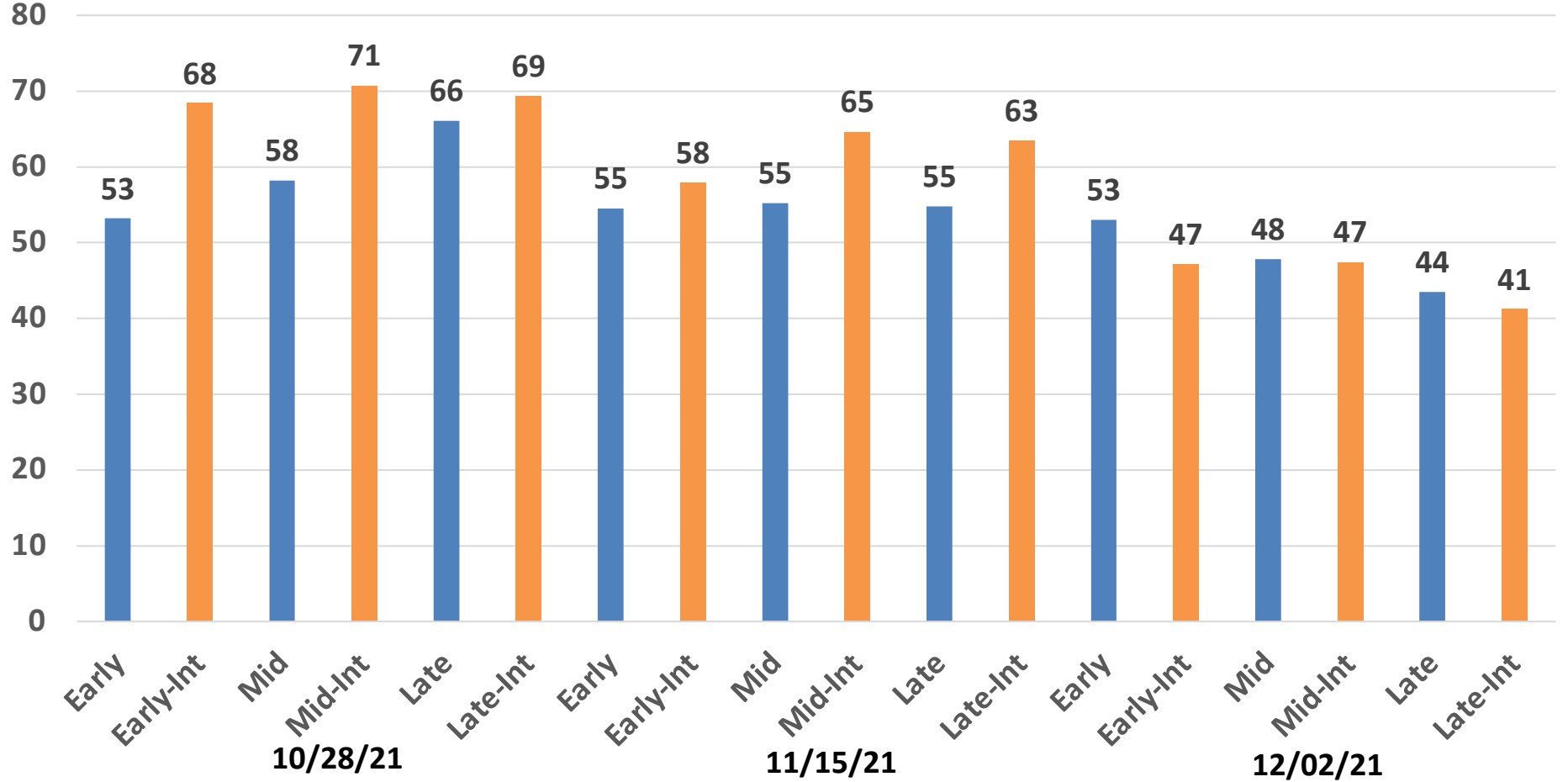
Yield Response to Planting Date and Fertility Management by Planting Date and Management
Yield bushels/A



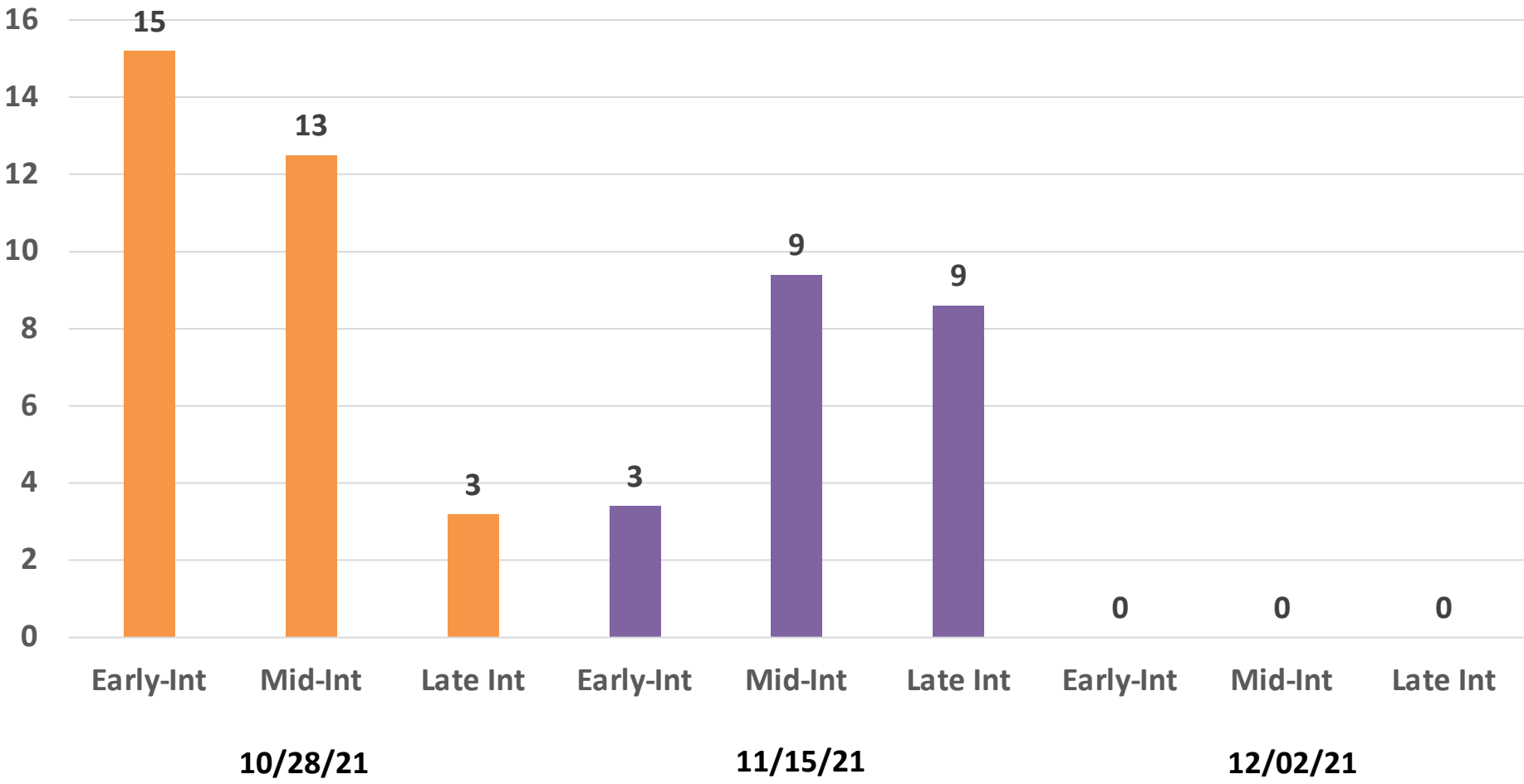
Yield Response to Planting Date and Fertility Management by Planting Date and Management
Yield bushels/A



Yield Response to Planting Date and Fertility Management by Planting Date and Management
Yield bushels/A



Yield Response to Planting Date and Fertility Management Bushel/A Increase



Treatment 10/28/2021	Cost/A (\$)	Bu/A	Gross Profit \$8.47/ bu	Net Profit	Break Even Price	Break Even Yield
Regular 503	362	53	451	89	6.80	43
Intense 503	446	68	579	133	6.52	53
Regular 505	362	58	493	131	6.21	43
Intense 505	446	71	599	153	6.31	53
Regular 516	362	66	560	198	5.47	43
Intense 516	446	69	587	141	6.44	53

Treatment 11/15/2021	Cost/A (\$)	Bu/A	Gross Profit \$8.47/ bu	Net Profit	Break Even Price	Break Even Yield
Regular 503	367	55	462	94	6.74	43
Intense 503	452	58	490	38	7.81	53
Regular 505	367	55	468	100	6.65	43
Intense 505	452	65	547	95	7.00	53
Regular 516	367	55	464	97	6.70	43
Intense 516	452	63	537	85	7.13	53

Treatment 12/02/2021	Cost/A (\$)	Bu/A	Gross Profit \$8.47/ bu	Net Profit	Break Even Price	Break Even Yield
Regular 503	373	53	449	75	7.05	44
Intense 503	458	47	399	-59	9.73	54
Regular 505	373	48	405	31	7.81	44
Intense 505	458	47	401	-57	9.66	54
Regular 516	373	44	368	-5	8.58	44
Intense 516	458	41	349	-109	11.12	54

Questions?

Managing Wheat with Plant Growth Regulators

Angela R. Post, Ph. D.



NC

**COOPERATIVE
EXTENSION**



N.C. A&T
STATE UNIVERSITY

NC STATE
UNIVERSITY

Background

- Intensively managed wheat can average 125+ bushels per acre in North Carolina



Background

- Growers pushing for these yields utilize high rates of nitrogen which can increase the height of wheat and increase the chances of lodging during spring storms



Background

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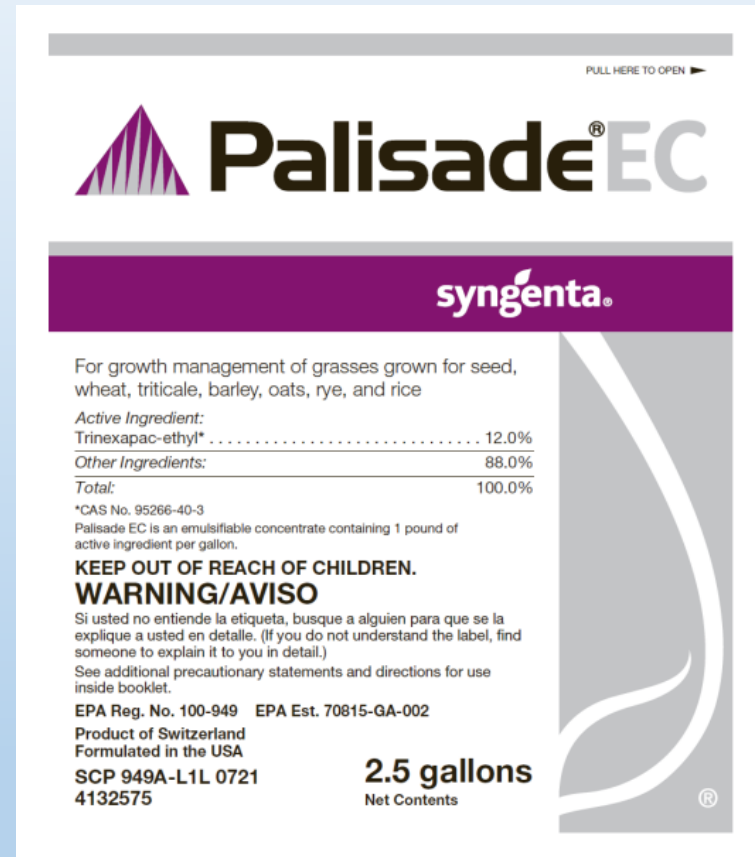
Background

- Plant growth regulators can be used to manage growth and increase standability



Background

- Palisade (trinexapac-ethyl) is the only PGR labeled for this use in wheat in North Carolina
- It is used at growth stage 25-37 or Feekes 4-8 at rates between 10.5 and 14.4 ounces per acre



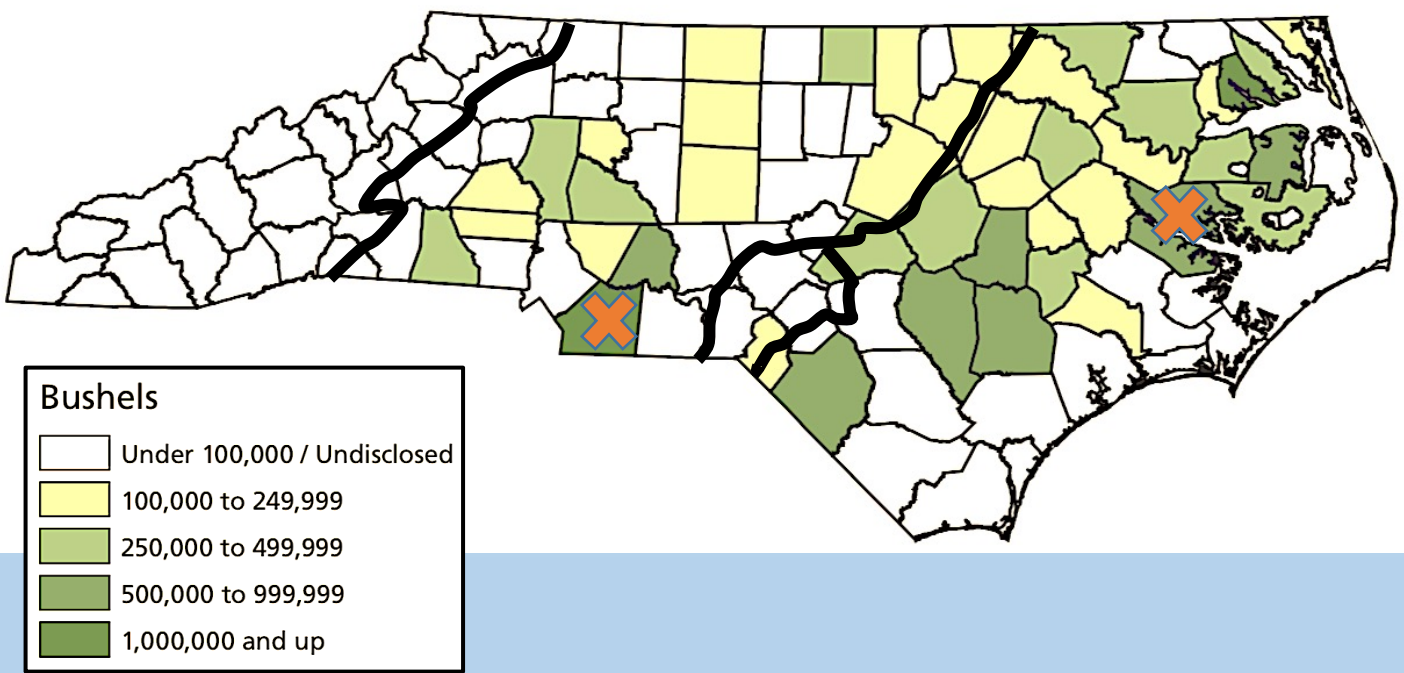
Objective

- Evaluate the impact of plant growth regulator use on the growth of early and late maturing wheat lines with varying genetic potential for height

Methods

- Four wheat varieties were selected for the following qualities: tall early maturing, tall late maturing, short early maturing, and short late maturing.
- Trials were established at two locations in 2020, Union and Beaufort Counties

Wheat Production in North Carolina



UniSouth Genetics 3118

- Early Maturing
- 2110 GDUs
- Short Variety 31 in
- Average 87 bu/A
- Averaged 11% lodging

USG 3118

STRENGTHS		PRODUCERS	
<ul style="list-style-type: none"> • Early line = Plant last • Great disease package • Test weight! • Hessian fly resistant 		<p>GERARD SEED CO. WASHINGTON, NC (252) 948-8122</p> <p>CHERRY FARMS SEED CO., INC. COLUMBIA, NC (252) 786-1141</p> <p>DOGWOOD FARMS ALBEMARLE, NC (704) 982-8148</p> <p>EURE SEED FARMS, INC. HERTFORD, NC (252) 244-1316</p> <p>MOORE FARM, INC. MOUNT ULLA, NC (704) 278-9531</p> <p>WHITE HAT SEED FARMS, INC. HERTFORD, NC (252) 244-2427</p>	
AGRONOMIC TRAITS			
Winter Hardiness	4		
Standability	2		
Tillering	3		
Seed/Lb.	12,000		
FIELD RATINGS			
Maturity	Early		
Heading	Early		
Height	Short		
Head Type	Awnletted		
Test Weight	1		

USG Seed is also available through many local Ag Retailers and Farm Supply Stores

DISEASE CHARACTERISTICS

BYDV	3
Stripe Rust	2
Leaf Rust	2
Glume Blotch	2
Powdery Mildew	2
Scab	5
Septoria Leaf Blotch	2

RATING SCALE: 1 - 9, 1 = BEST

3205-C Highway 46 South
Dickson, TN 37055
800.505.3133 phone
931.996.4080 fax

usgseed.com | like us on | follow us on

Southern Harvest 7200

- Early Maturing
- 2100 GDUs
- Tall Variety 34 in
- Average 81.25 bu/A
- Lodging 19.6%



The graphic features a dark green header with a sun and wheat icon. Below the header, the text 'SH 7200' is on the left and 'EARLY MATURITY' is on the right. A list of three bullet points describes the variety's benefits. A table titled 'CHARACTERISTICS' lists various traits and their scores. To the right of the table is a logo for 'SOUTHERN HARVEST' with the tagline 'Southern Genetics for Southern Growers' and an image of wheat stalks.

SH 7200 EARLY MATURITY

- Early maturity with excellent resistance to hessian fly
- Excellent yield potential and test weight
- Top performer across the South/Southeast

CHARACTERISTICS	
Head Type	Awned
Plant Height	32
Yield Potential	9
Test Weight	9
Lodging	8
Powdery Mildew	8
Leaf Rust	9
Stem Rust	-
Stripe Rust	7
Septoria Glume Blotch	-
Septoria Leaf Blotch	9
Scab	5
Soil-Borne Mosaic Virus	5
Barley Yellow Dwarf Virus	8
*Hessian Fly	B,C,L,O

SOUTHERN HARVEST
*Southern Genetics
for Southern Growers*

DYNAGRO 9701

- Late Maturing
- 2330 GDUs
- Short “er” Variety 35.2 in
- Average 84 bu/A
- Lodging 77.5%

WHEAT


9701

DYNAGRO
SEED

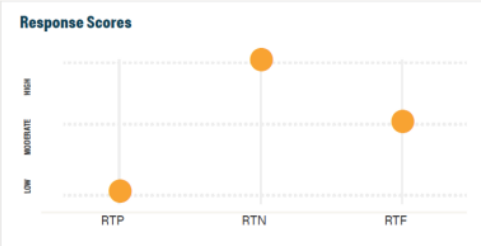
Medium-Early	Soft Red Winter
Relative Maturity	
Agronomics	
<ul style="list-style-type: none"> • A popular variety adapted to a large geographic area that combines good stress tolerance and yield potential • Fhb1 type II Fusarium head scab resistance marker • Replaces our old 9171 with improved plant health and head scab ratings • Attractive plant height for farmers that like Medium-tall varieties • Very good overall foliar health including stripe rust 	
Agronomic Traits	
Maturity.....	Medium-Early
Grain Color.....	Red
Plant Height.....	Medium-Tall
Head Type.....	Awned
Hessian Fly.....	9
Leaf Rust.....	8
Stripe Rust.....	8
Powdery Mildew.....	7
Septoria Leaf Blotch.....	8
Straw Strength.....	Excellent
Test Weight.....	Very Good
Winter Hardness.....	Very Good
Metribuzin Tolerance.....	6
Disease Ratings	
Stagnospora Glume Blotch.....	7
Fusarium Head Scab.....	8
Yellow Mosaic (WSSM).....	n/a
Soil Borne Mosaic Virus.....	8
Barley Yellow Dwarf Virus.....	7
Seeding Rate / Million Seeds per Acre	
1.4 to 1.7	
<ul style="list-style-type: none"> • Excellent for areas with Hessian Fly pressure • Widely adapted to many soil types and management systems 	
Soil Adaptability	
Sand to Sandy Loams.....	HR
Silt Loam to Loams.....	HR
Clay Loam to Clays.....	HR
Poorly Drained.....	R
Fertility & Fungicide Response	
Average Nitrogen.....	HR
High-Intensive Nitrogen.....	R
Foliar Fungicides.....	R
Fungicides for Head Scab.....	R
Plant with These Varieties:	
9811 9172 9120 9002	
Agronomic Ratings	
STRAW STRENGTH	9
TEST WEIGHT	8
WINTER	8
POWDERY MILDEW	7
LEAF RUST	8
SEPTORIA LEAF BLOTCH	8
STAGNOSPORA GLUME BLOTCH	7
FUSARIUM HEAD SCAB	8
STRIPE RUST	8

CROPLAN 8550

- Late Maturing
- 2400 GDUs
- Tall Variety 42 in
- Average 94 bu/A
- Lodging 23.6%


CP8550

Response Scores



The chart shows three data points: RTP is at the Low level, RTN is at the High level, and RTF is at the Moderate level. The y-axis is labeled HIGH, MODERATE, and LOW. The x-axis is labeled RTP, RTN, and RTF.

Characteristics

	Not Recommended	Excellent
STANDABILITY	5 bars	2
FUSARIUM HEAD BLIGHT	5 bars	1
FHB	5 bars	1
TEST WEIGHT	5 bars	1
WINTERHARDINESS	5 bars	2

Description

- State-of-the-art fusarium head blight resistance
- Excellent yield potential; responds to lower populations and higher nitrogen
- Outstanding test weight and stripe rust tolerance
- Tall variety has good straw yield potential, but is awned

Characteristics

REGION OF ADAPTATION	L, 2, 3, 4
DAYS TO MATURITY	N/A
BACTERIAL LEAF STREAK	N/A
BARLEY YELLOW DWARF	2
TAN SPOT	N/A
RESPONSE-TO-POPULATION (RTP)	L
RESPONSE-TO-NITROGEN (RTN)	H
RESPONSE-TO-FUNGICIDE (RTF)	M
HESSIAN FLY RESISTANCE	Biotype L
LEAF RUST RESISTANCE	1
STEM RUST RESISTANCE	N/A
STRIPE RUST RESISTANCE	1
MATURITY	3
POWDERY MILDEW RESISTANCE	3
SEED SIZE RANGE	12,000-14,000
SEPTORIA LEAF RESISTANCE	2
SOLUBLEBLOTCHRESISTANCE	3
AWNS	Y
PLACEMENT ON IRRIGATION	N/A
TRAIT	Soft Red Winter

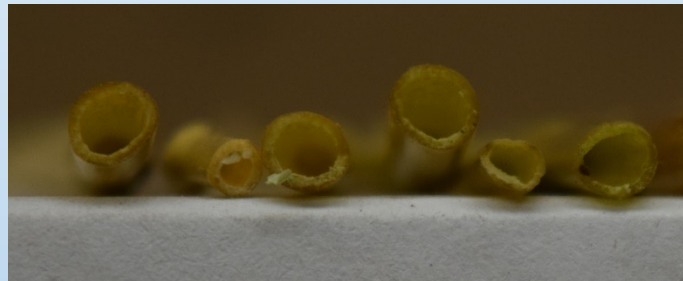
KEY Scale

1 = Excellent
 2 = Strong
 3 = Acceptable
 4 = Manage
 5 = Not Recommended

Product descriptions and ratings are generated from Answer Plot® trials and/or from the genetics supplier and may change as additional data is gathered.

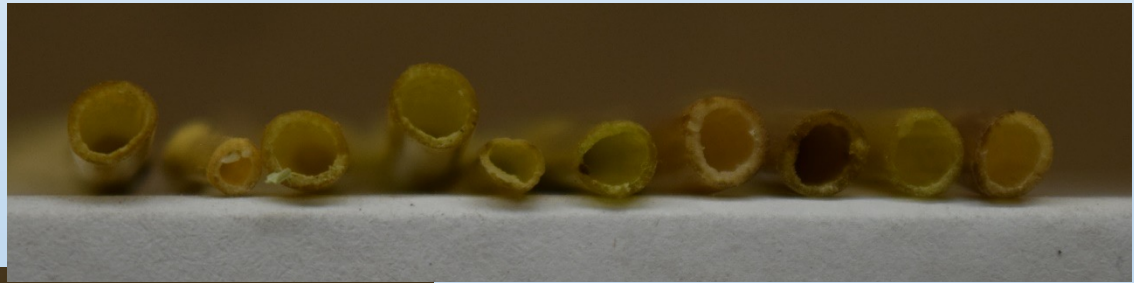
Results

- Stem Diameter
- Final Height
- 1st internode length
- Yield

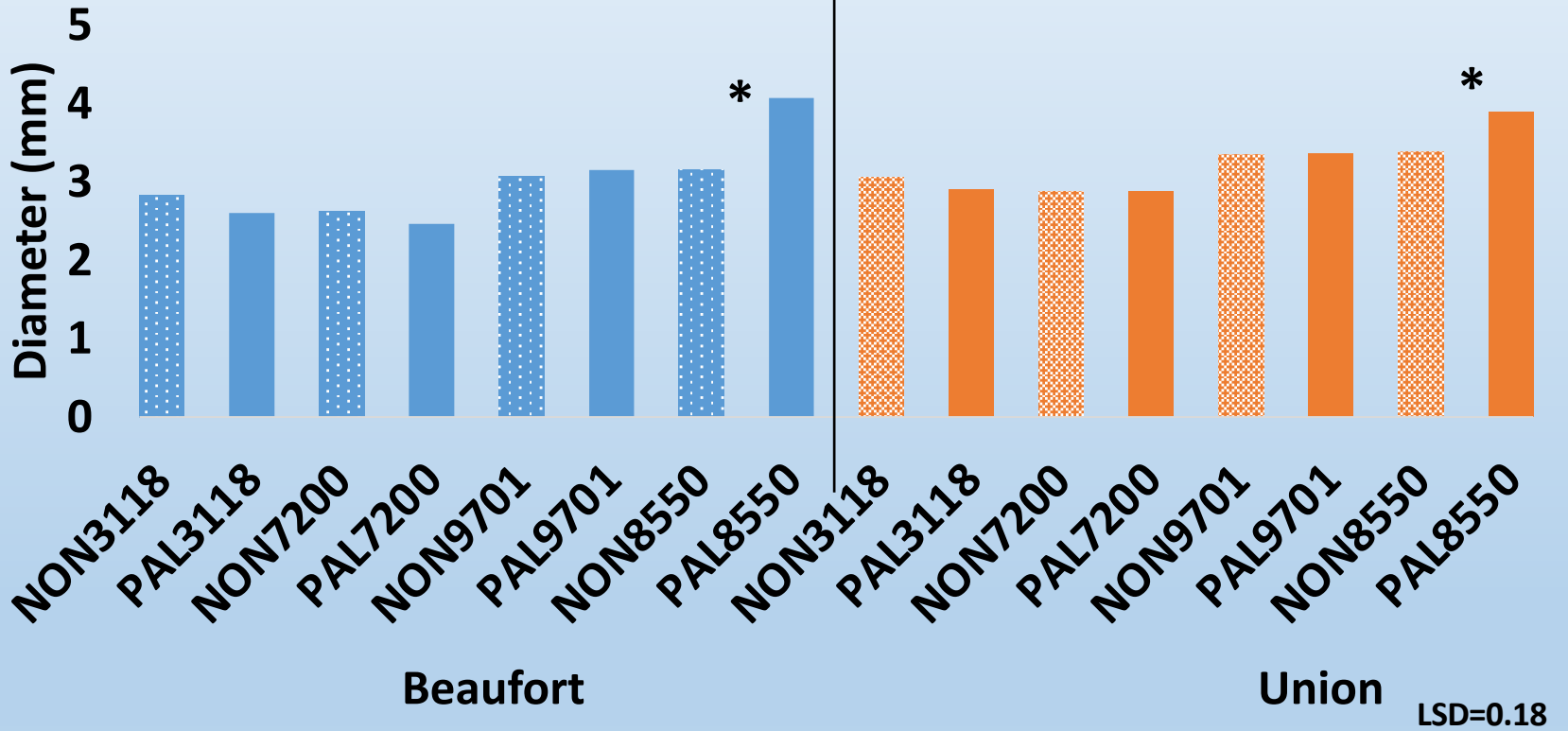


Stem Diameter

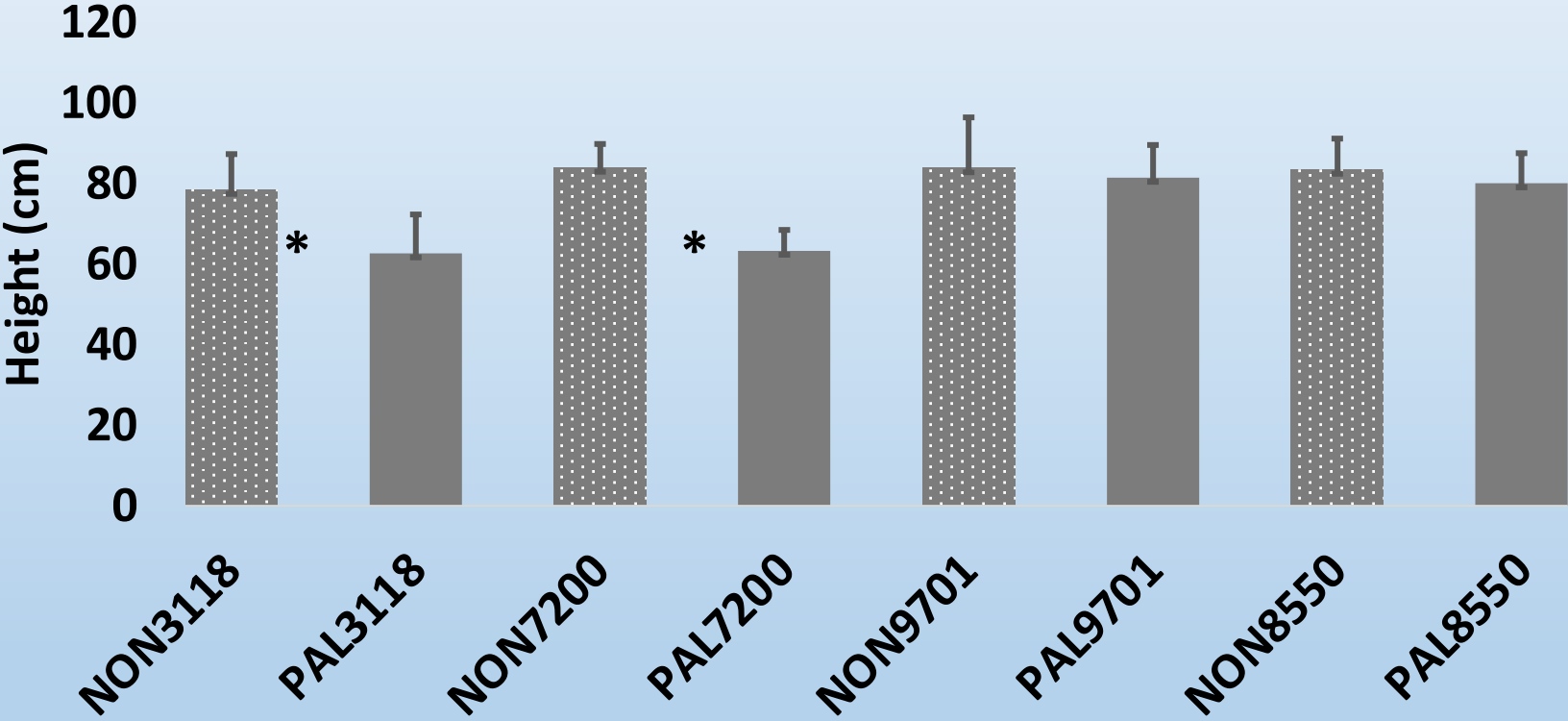
- Difficult to capture accurately due to brittleness of straw near harvest



Stem Diameter by Location and Variety



Final Height Pooled Across Locations 2020



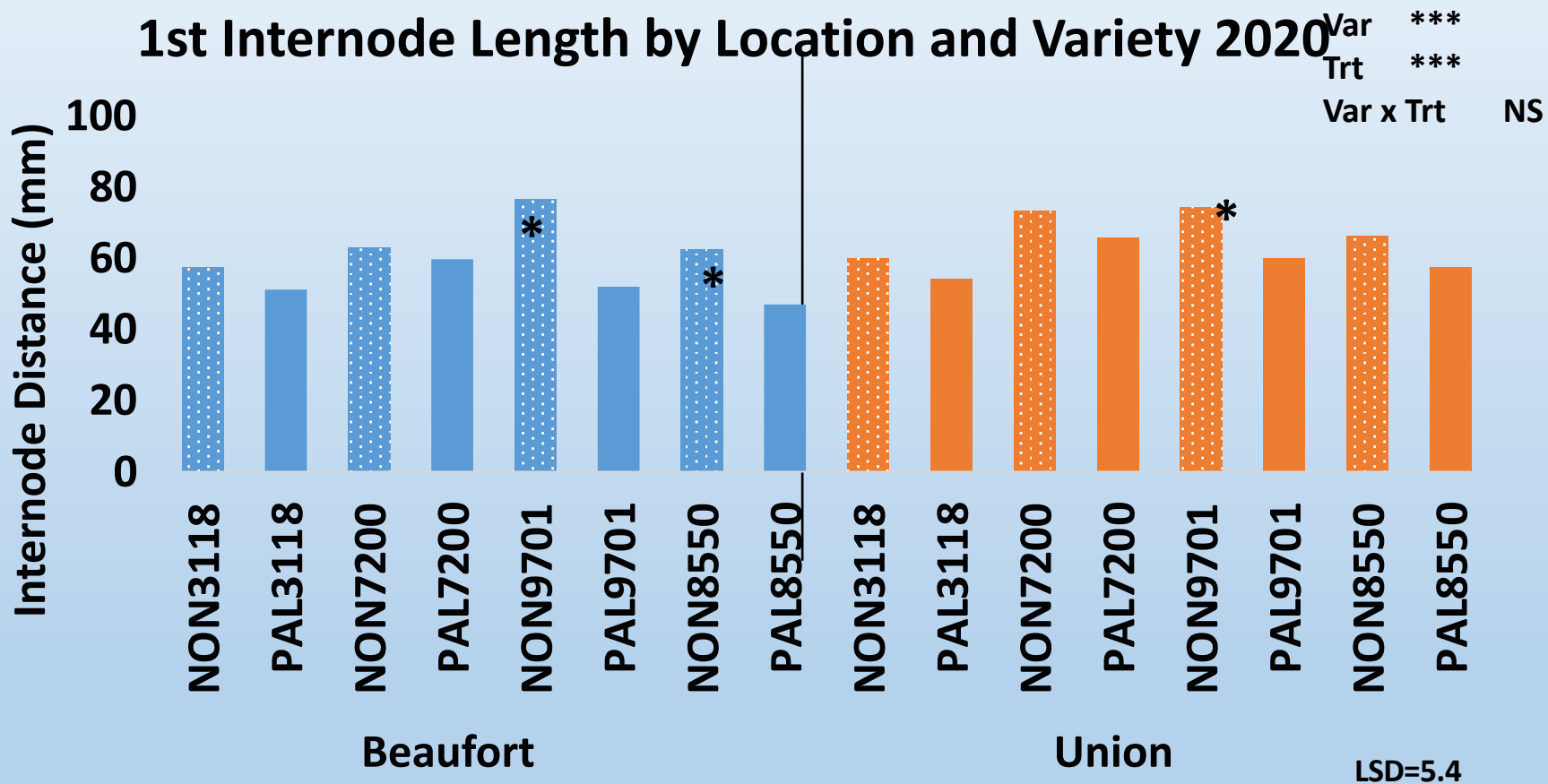
LSD=4.5

Internode Length

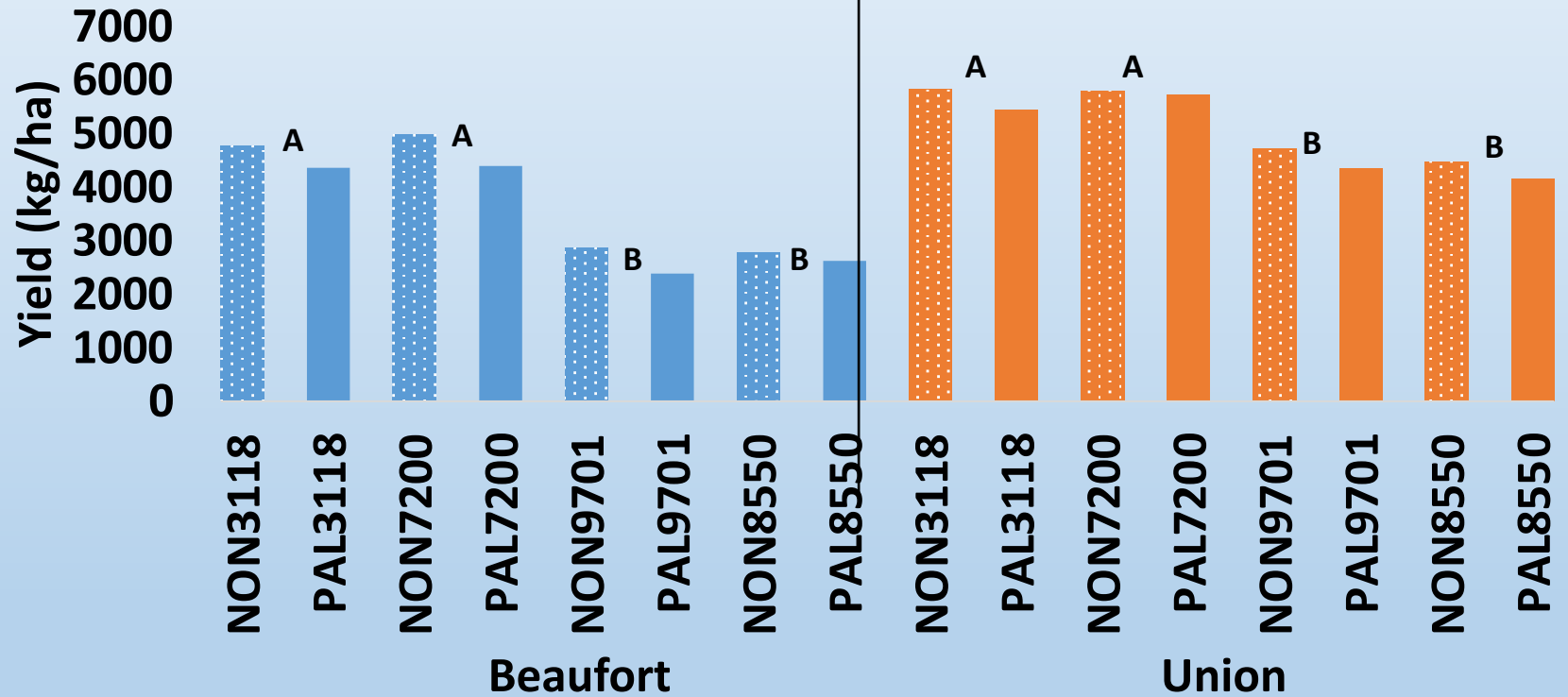
- We measured internode length for the 1st 2nd and 3rd internodes



1st Internode Length by Location and Variety 2020



Yield by Location and Variety



Summary of Results

- Labeled applications of Palisade at 14.4oz/A can effectively reduce 1st internode length and final height but the response is variety specific
- Palisade did not influence final head counts or yield at either location for the varieties tested

Implications

- While we did not experience lodging this season, the physiological changes of reduced height and increased stem diameter should improve wheat standability for those varieties

Questions?

Angela R. Post

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Early Postemergence Herbicide Options

- Quelex- 0.75 oz/A to control broadleaf weeds
- Axial- 16.4 oz/A for ryegrass and other grassy weeds
- Zidua- 1 to 2 oz/A at Spike-3 leaf stage for ryegrass control
- Harmony- 0.45-0.9 oz/A 2 leaf to flag for broadleaf weeds

***Fall Applications are more effective than spring applications

This list is not exhaustive. Consult the NC Ag Chemicals Manual for complete information. Always read and follow label instructions.