

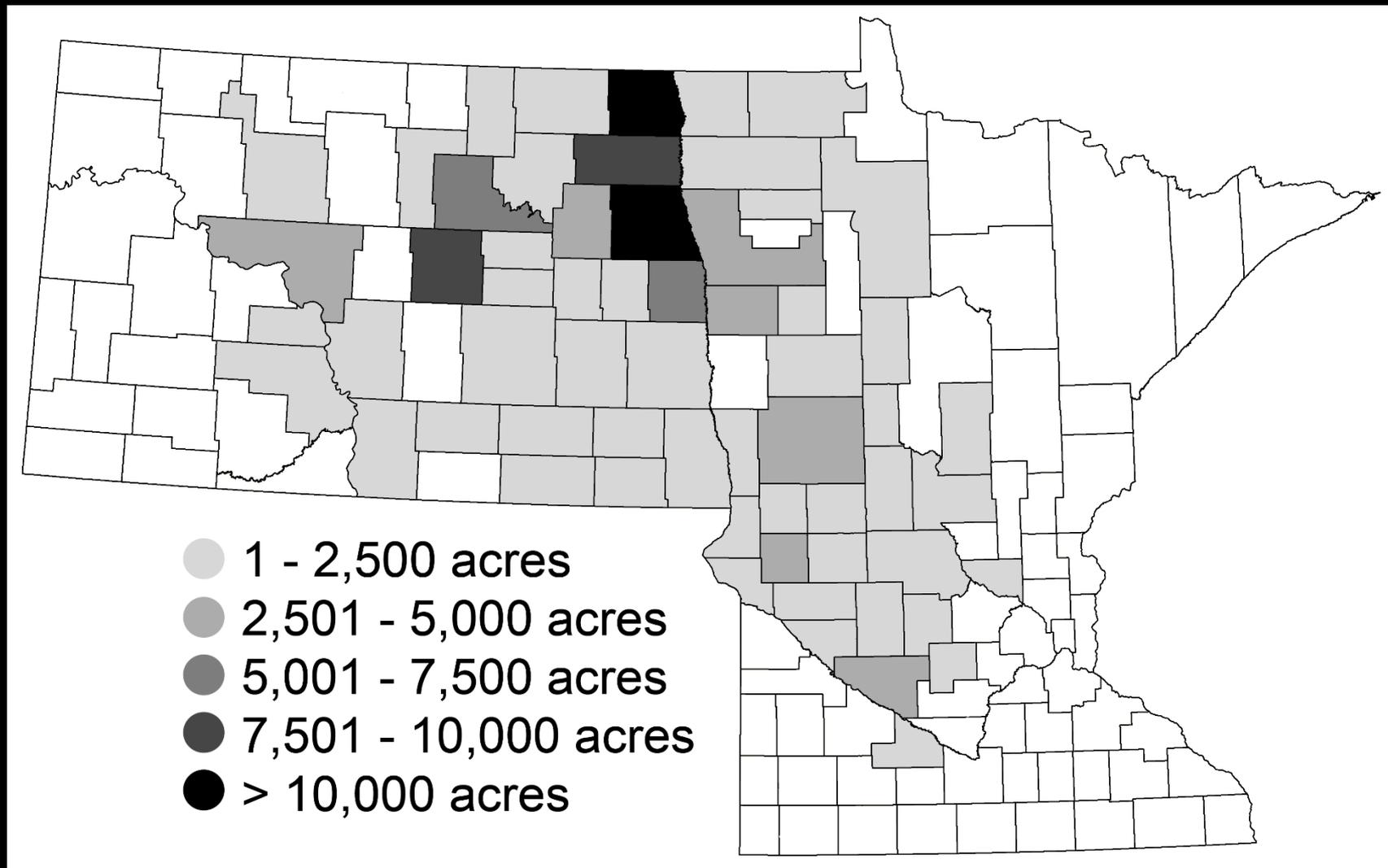
2019 Eastern Crop and Pest Management School

Dry Bean Production Issues

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NDSU Carrington Research Extension Center

Northharvest Dry Bean Production by County, North Dakota and Minnesota, 2018



Worst production problem reported by Northarvest bean growers, 2014-18

(Dry Bean Grower Survey, NDSU Extension and Northarvest Dry Bean Growers Association)

Rank	Factors				
	2014	2015	2016	2017	2018
1	excess water		hail	drought	
2	disease		weeds	none	
3	delayed planting	drought	water damage (harvest)	hail	disease
4	weeds		harvest	disease	harvest
5	emerge /stand	hail	disease	weeds	hail
6	hail	emerge/stand	wind	water damage	weeds
7	drought	wind	water damage (beans not harvested)	emerge/stand	water damage

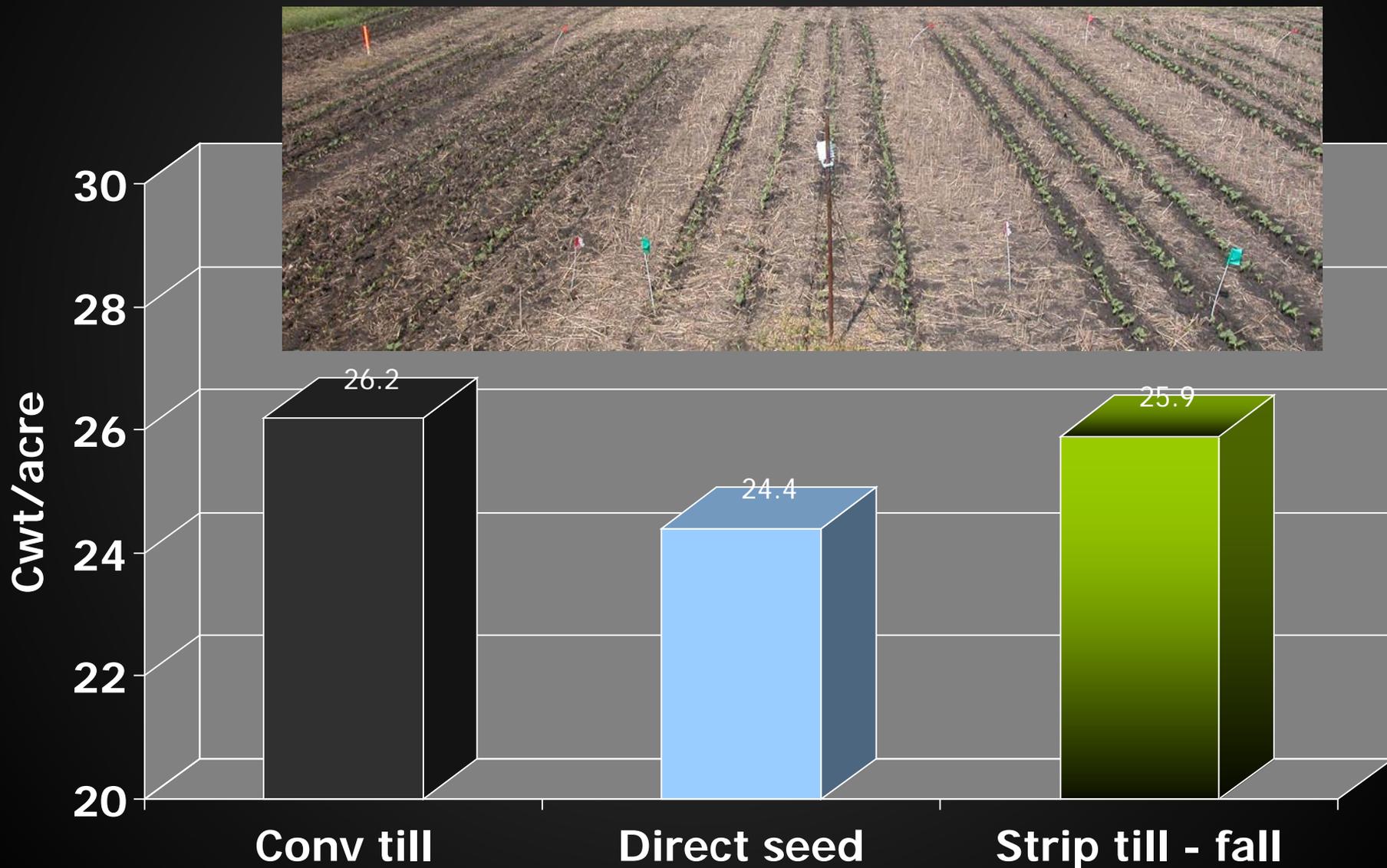
Dry bean **tillage system** reported by Northarvest growers, 2018

(Dry Bean Grower Survey, NDSU Extension Service and Northarvest Dry Bean Growers Association)

Tillage system	Acres (%)
Conventional	77
Minimum	14
Strip-till	4
No-till	5



Pinto bean yield among tillage systems, Carrington, 2007 and 2009-12 (5 site-yr)



2018 Dry bean grower survey (Northarvest region): Cover crop use

- 20% respondents used cover crops on dry bean fields

✓ Reasons for cover crop use

1. Soil conservation (96%)
2. Weed control (11%)



Northarvest	Number	%
Cereal grass species only (barley, oats, rye)	34	72.3
Broadleaf species only (clover, pea, radish, turnip)	1	2.1
Cereal grass + broadleaf species	12	25.5



Study questions:

- 1) **Can pinto bean be productive with rye?**
 - a) What is the best time to terminate rye?
- 2) **Is rye effective as a weed management tool?**



PP1820

Dry Edible Bean Disease Diagnostic Series

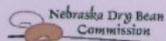
Samuel Markell, Extension Plant Pathologist,
North Dakota State University

Robert Harveson, Extension Plant Pathologist,
University of Nebraska

Julie Pasche, Dry Bean and Pulse Crop
Pathologist, North Dakota State University

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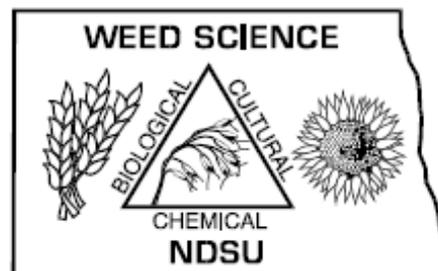
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Lincoln





Dry edible bean:
pp. 32-33

2019 NORTH DAKOTA WEED CONTROL GUIDE



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THIS PUBLICATION SUPERCEDES ALL PREVIOUS ISSUES OF W-253 SUBJECT TO CONDITIONS UNDER "WEED GUIDE INFORMATION"

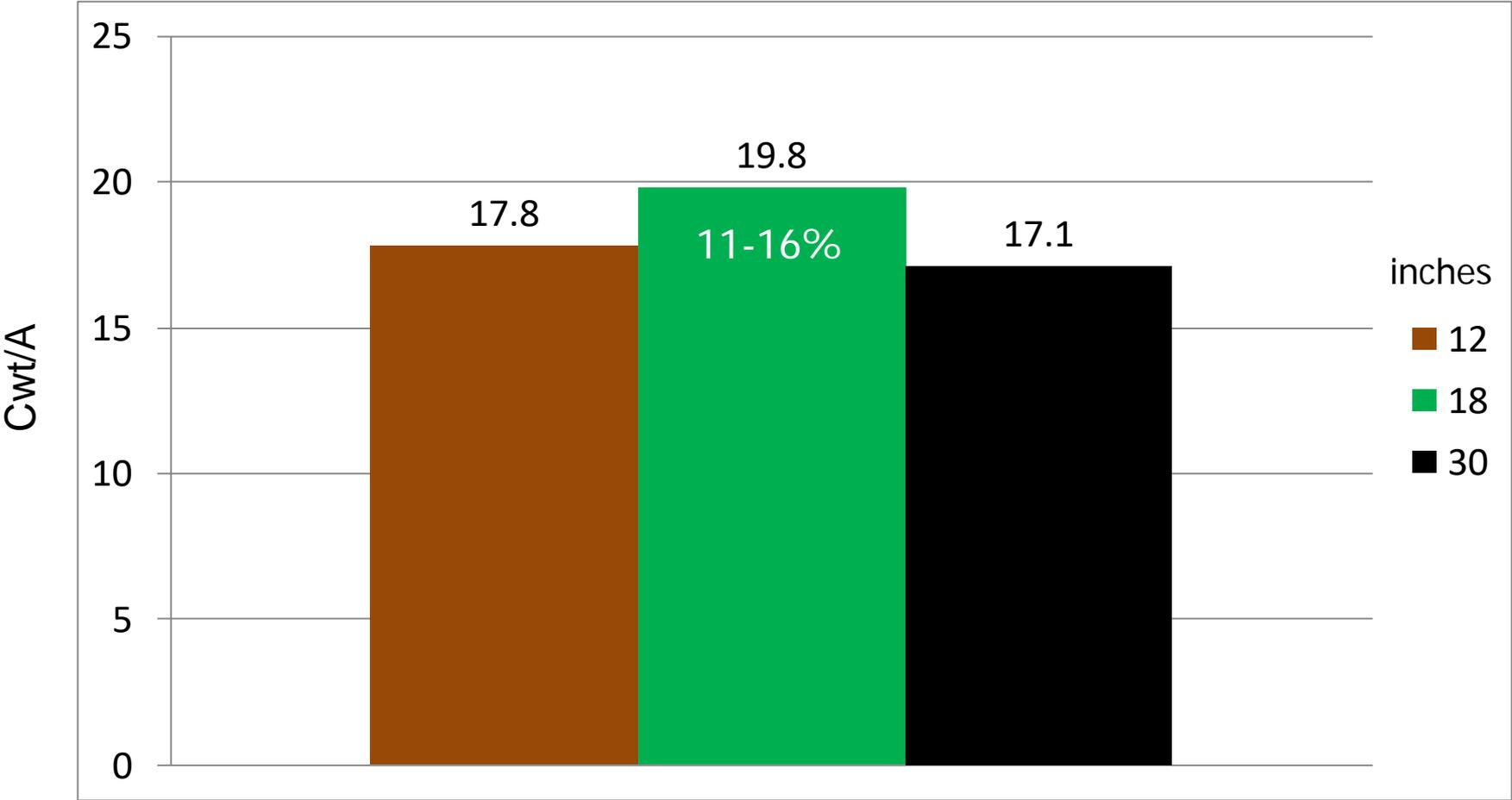
www.ndsu.edu/weeds/



Pinto bean **row spacings** reported by Northarvest growers, 2018

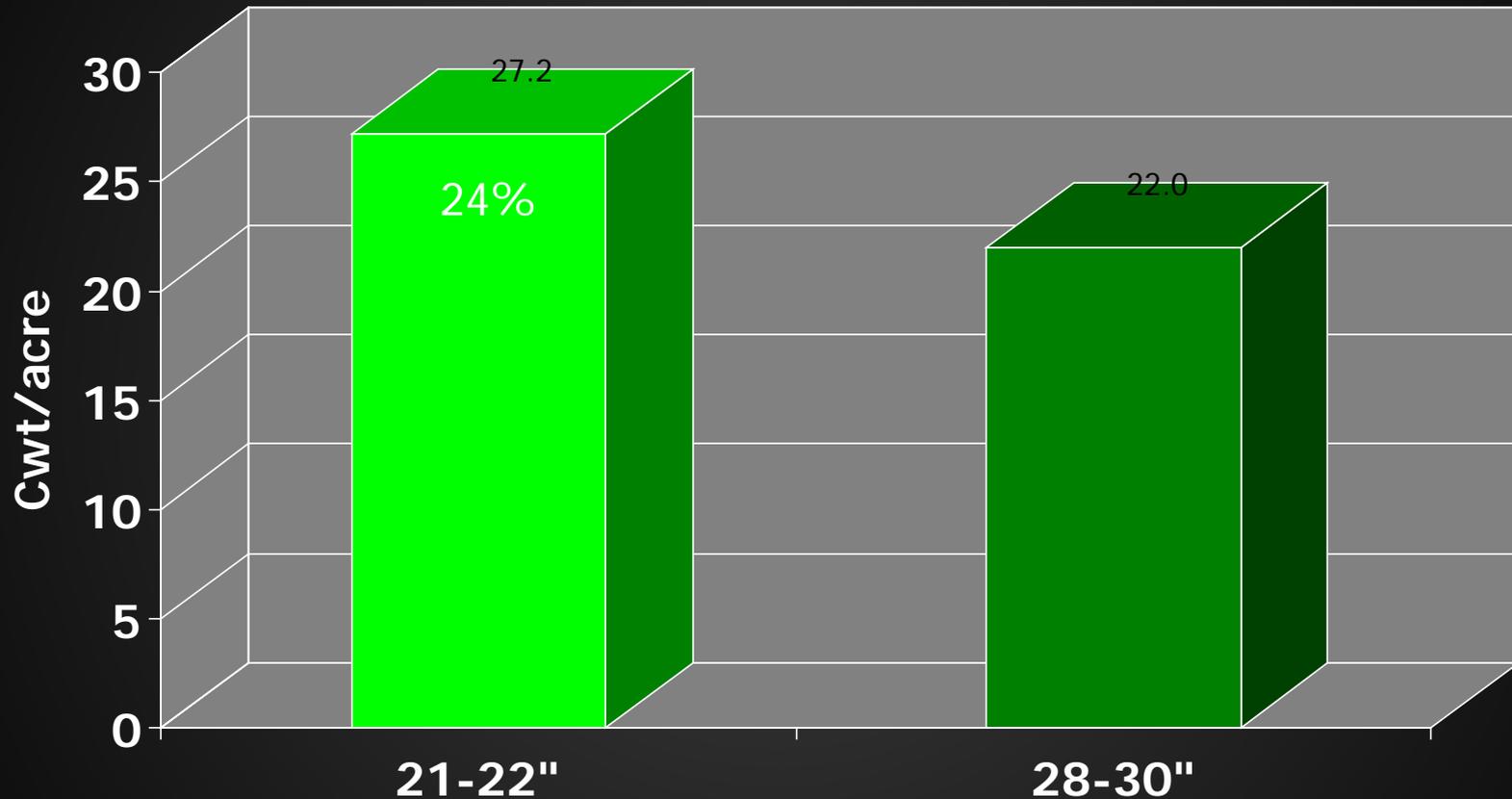
Market type	%		
	11-20"	21-25"	26-30"
Pinto	16	38	44

Pinto bean yield response to row spacing, eastern ND, 2008-09 (4 site-years)*



*Carrington, Hatton and Prosper. Means averaged across varieties, N levels and harvest methods.

Pinto bean seed yield between row spacings, Carrington, 2011-13 and 2018 (4 site-years)*

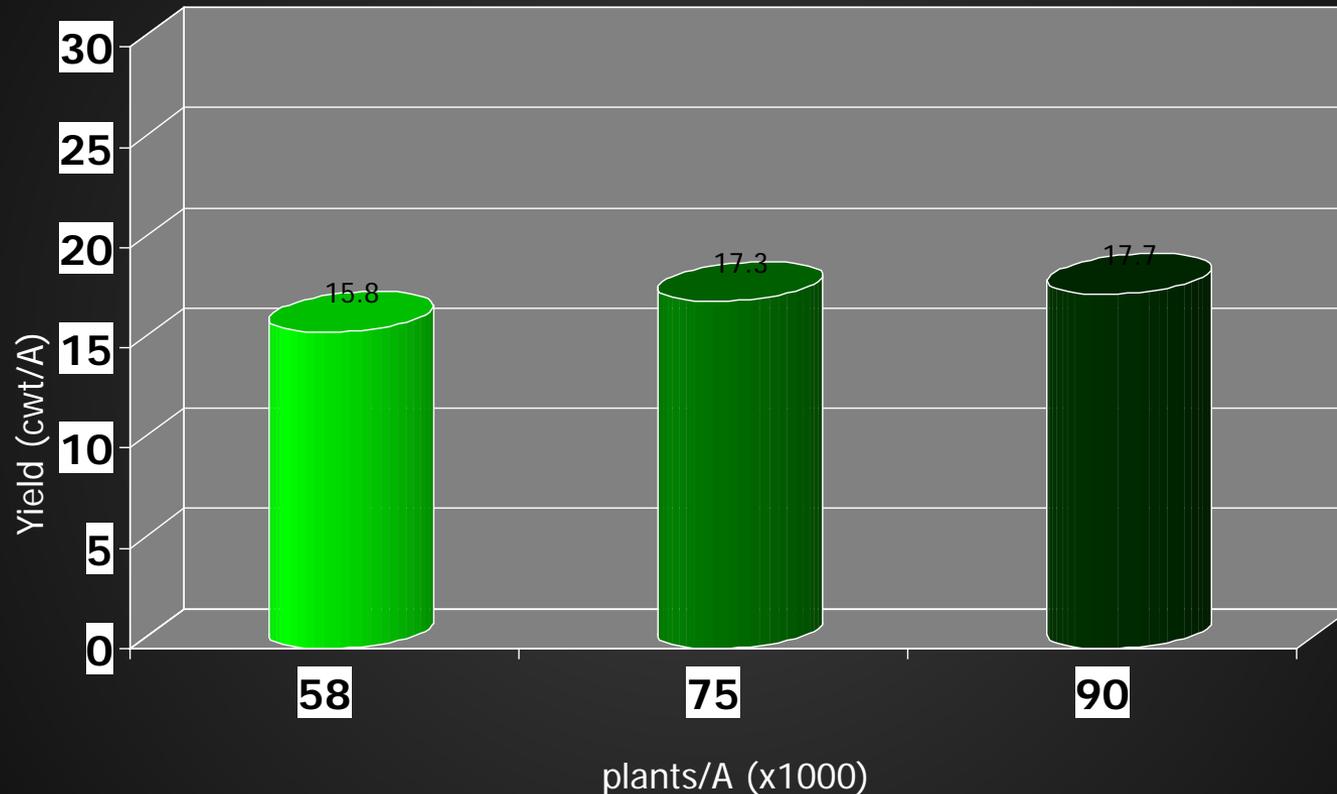


*'Lariat': 2011-13; 'ND Palomino': 2018. Averaged across tillage systems and fertilizer treatments (2011-13) and plant populations (2018). LSD (0.05): significant each year.

Pinto bean **planting rates (%)** reported by Northarvest growers, 2018

Market type	NDSU recommended stand [plants (x1000)/A]	Planting rate [seeds (x1000)/A]			
		<70	70-89	90-99	≥100
pinto	70	7	82	7	4

Pinto bean seed yield among plant populations, Carrington, 2013 and 2018 (2 site-years)*

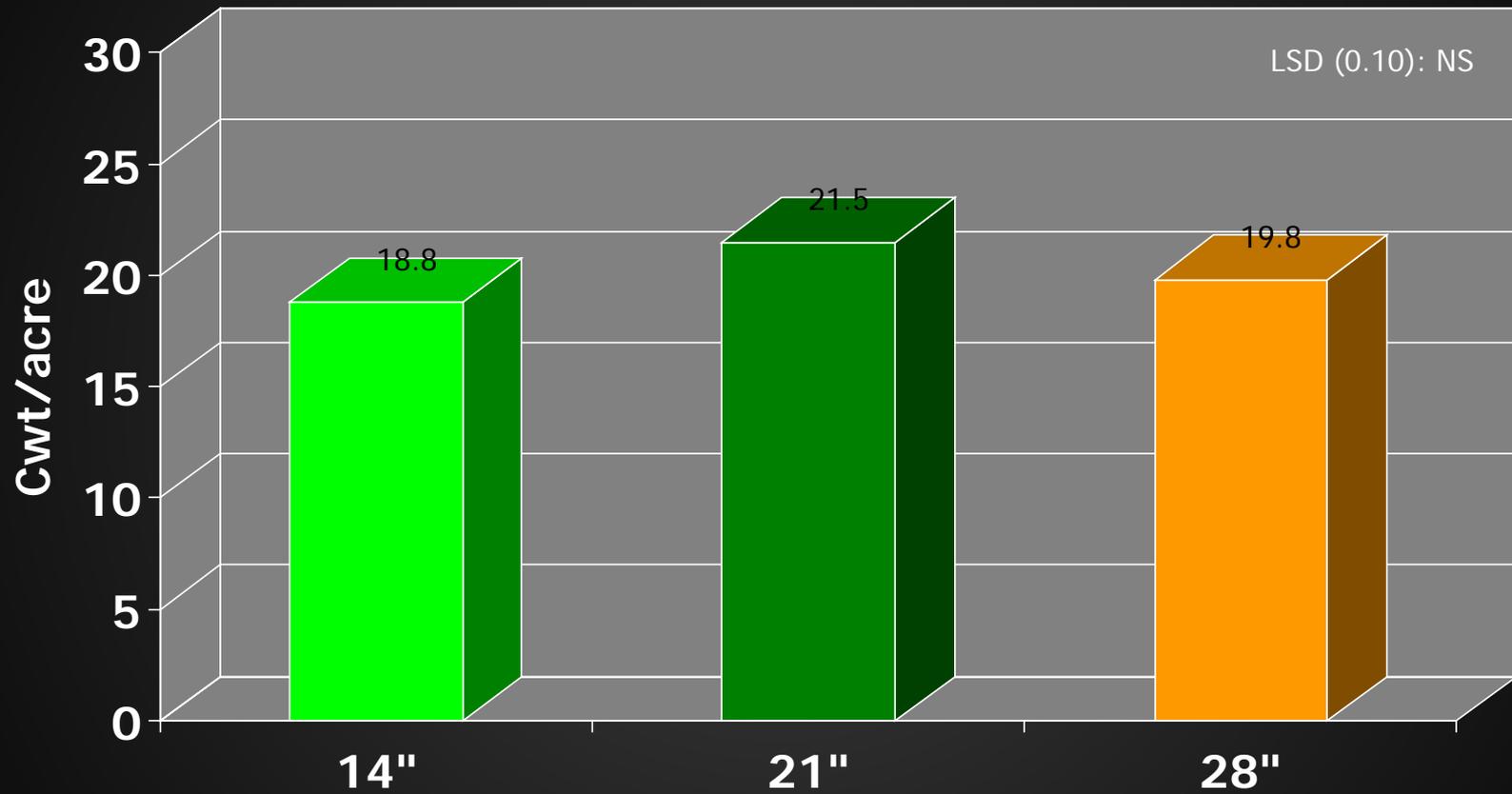


*2013: 'Lariat'; 2018: 'ND Palomino'. Averaged across planting dates (2013) and row spacings (2018).
LSD (0.05): 2013 = NS; 2018 = *.

Dry bean **row spacings** reported by Northarvest growers, 2018

Market type	%		
	11-20"	21-25"	26-30"
Pinto	16	38	44
Black	18	53	28
Navy	13	60	27

Black bean seed yield among row spacings, Carrington, 2014 and 2016-18 (4 site-years)*

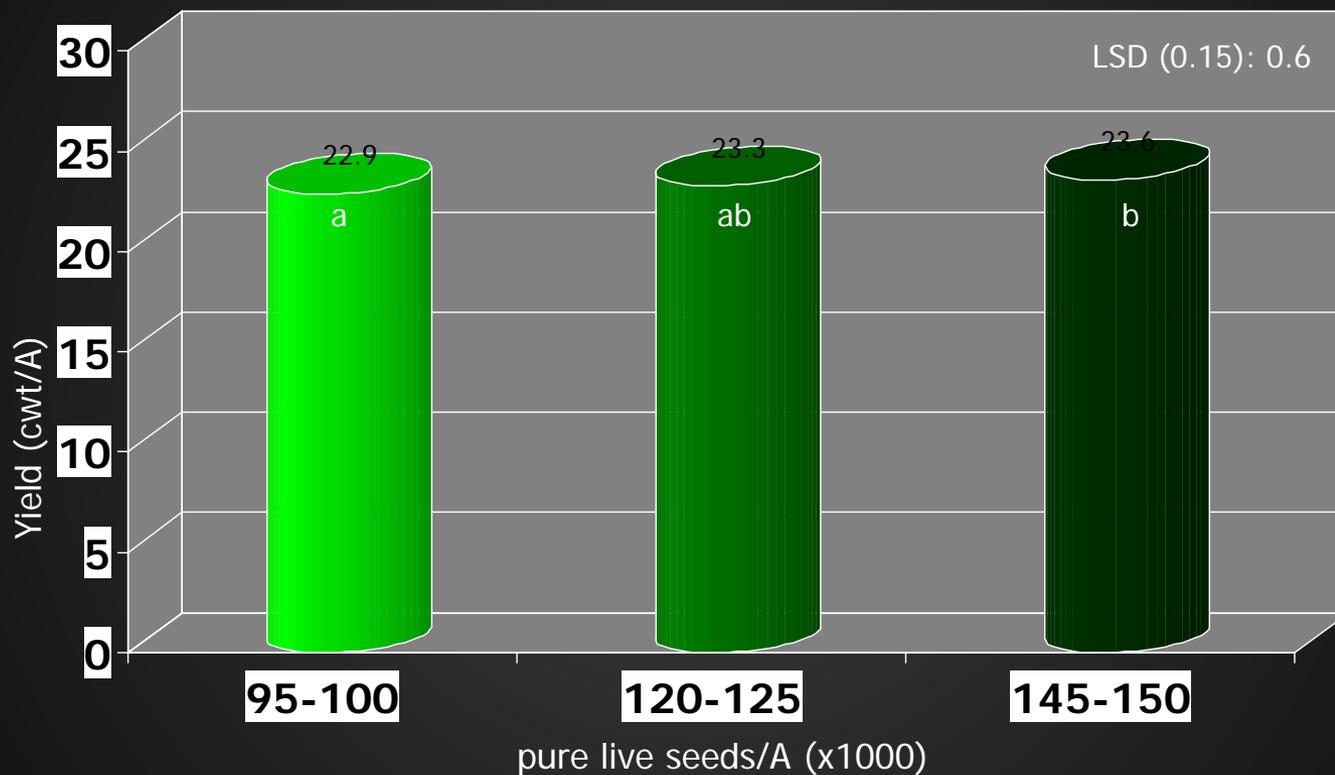


*'Eclipse'. Averaged across three plant populations.

Black and navy bean **planting rates (%)** reported by Northarvest growers, 2018

Market type	NDSU recommended stand [plants (x1000)/A]	Planting rate [seeds (x1000)/A]					
		<89	90-99	100-109	110-119	120-129	>129
black	90	8	14	28	28	17	6
navy		6	9	19	42	17	6

Black bean seed yield among plant populations, Carrington, Park River and Prosper, 2014 and 2016-18 (8 site-years)*



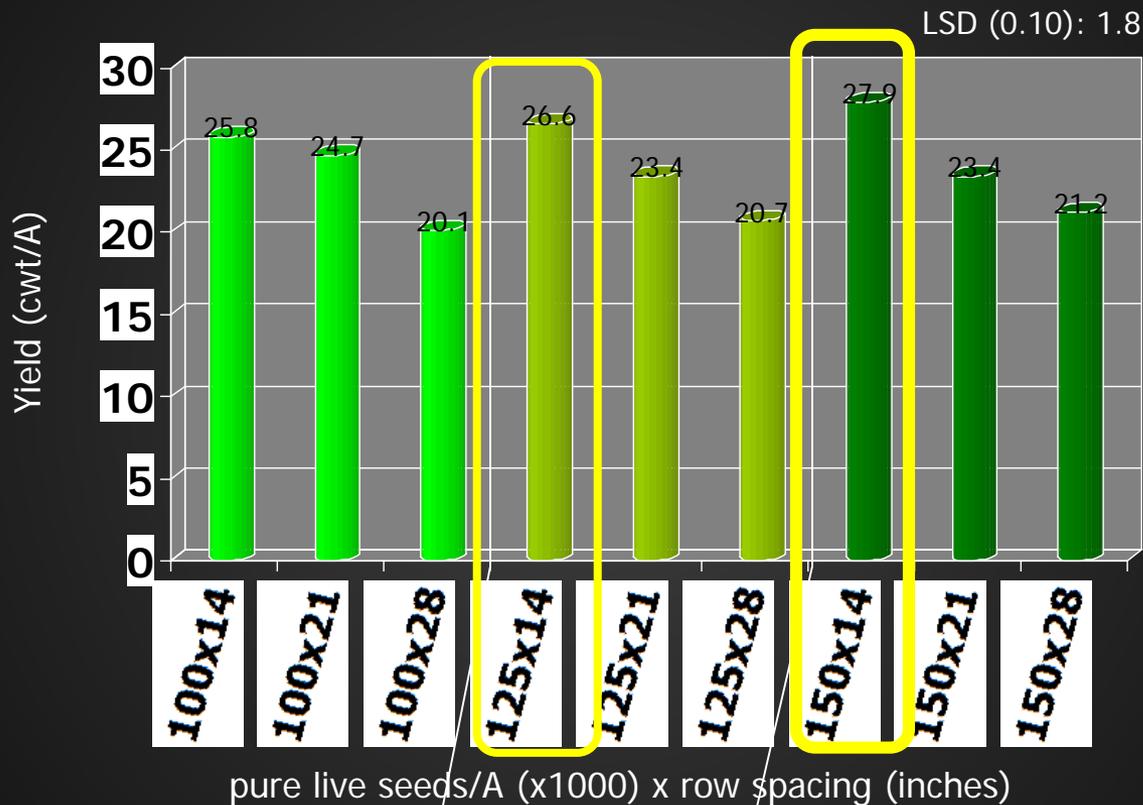
Stand (plants/A x1000):
99.1

118.5

140.7

*'Eclipse'. Averaged across row spacings.

Navy bean seed yield with three row spacings and three plant populations, Carrington, 2014 and 2016-17 (3 site-years)



Stand (plants/A x1000):

92.6

116.8

139.8

Row spacing and plant population summary

- navy = **14-inch rows plus >115,000 plants/acre**
- black = intermediate rows (21-22 inch) and $\geq 120,000$ plants/acre
- pinto = **intermediate rows**
 - ✓ pinto row by pop study will continue in 2019

Questions?

