

2018 Eastern Crop and Pest Management School

Dry Bean Production Issues

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Worst production problem reported by Northharvest bean growers, 2014-17

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

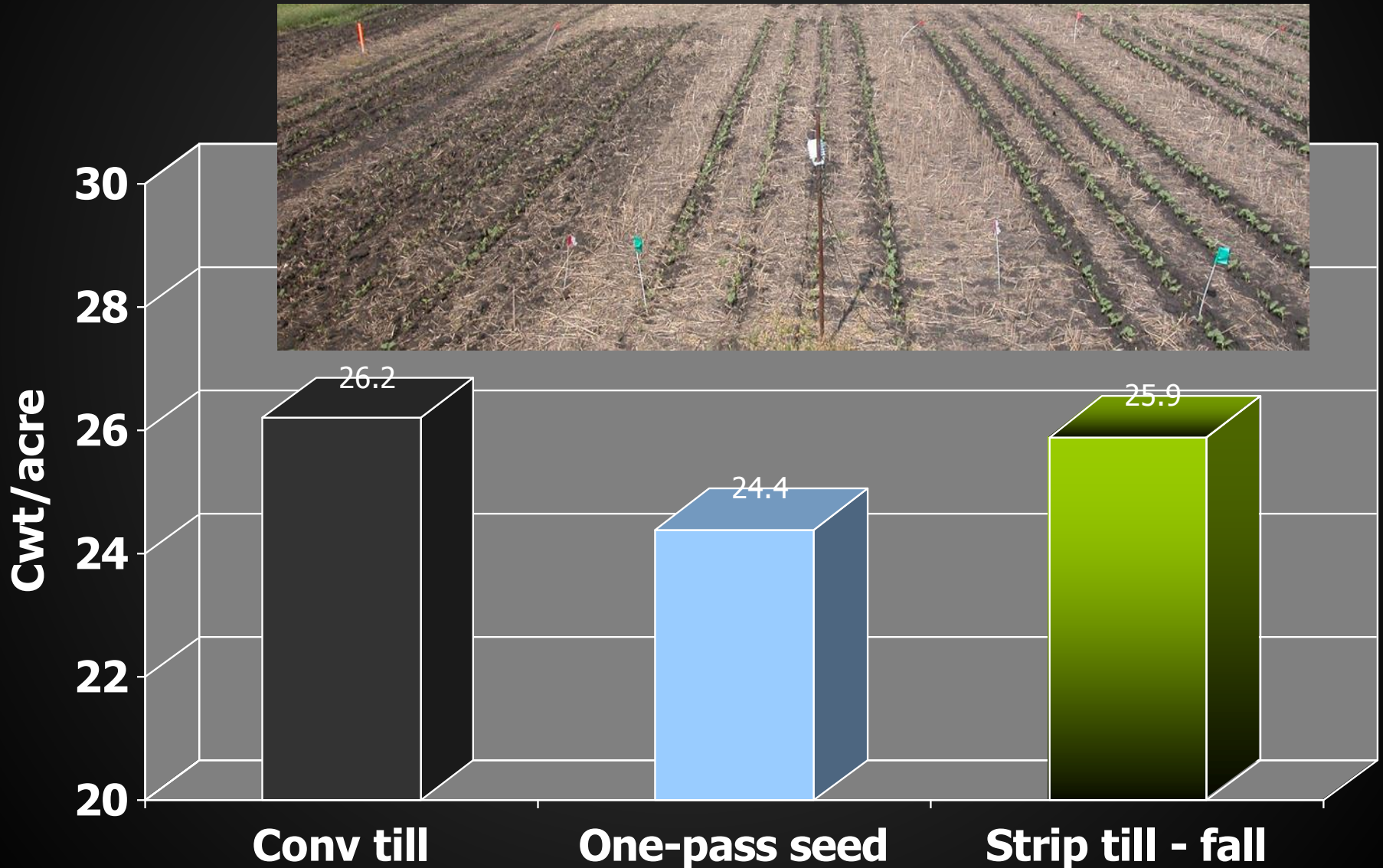
Rank	Factors			
	2014	2015	2016	2017
1	excess water		hail	drought
2	disease		weeds	none
3	delayed planting	drought	water damage (harvest)	hail
4	weeds		harvest	disease
5	emergence /stand	hail	disease	weeds
6	hail	emergence/stand	wind	water damage
7	drought	wind	water damage (beans not harvested)	emergence/stand

Dry bean **tillage system** reported by Northarvest growers, 2017

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

Tillage system	Acres (%)
Conventional	73
Minimum	12
Strip-till	6
No-till	6

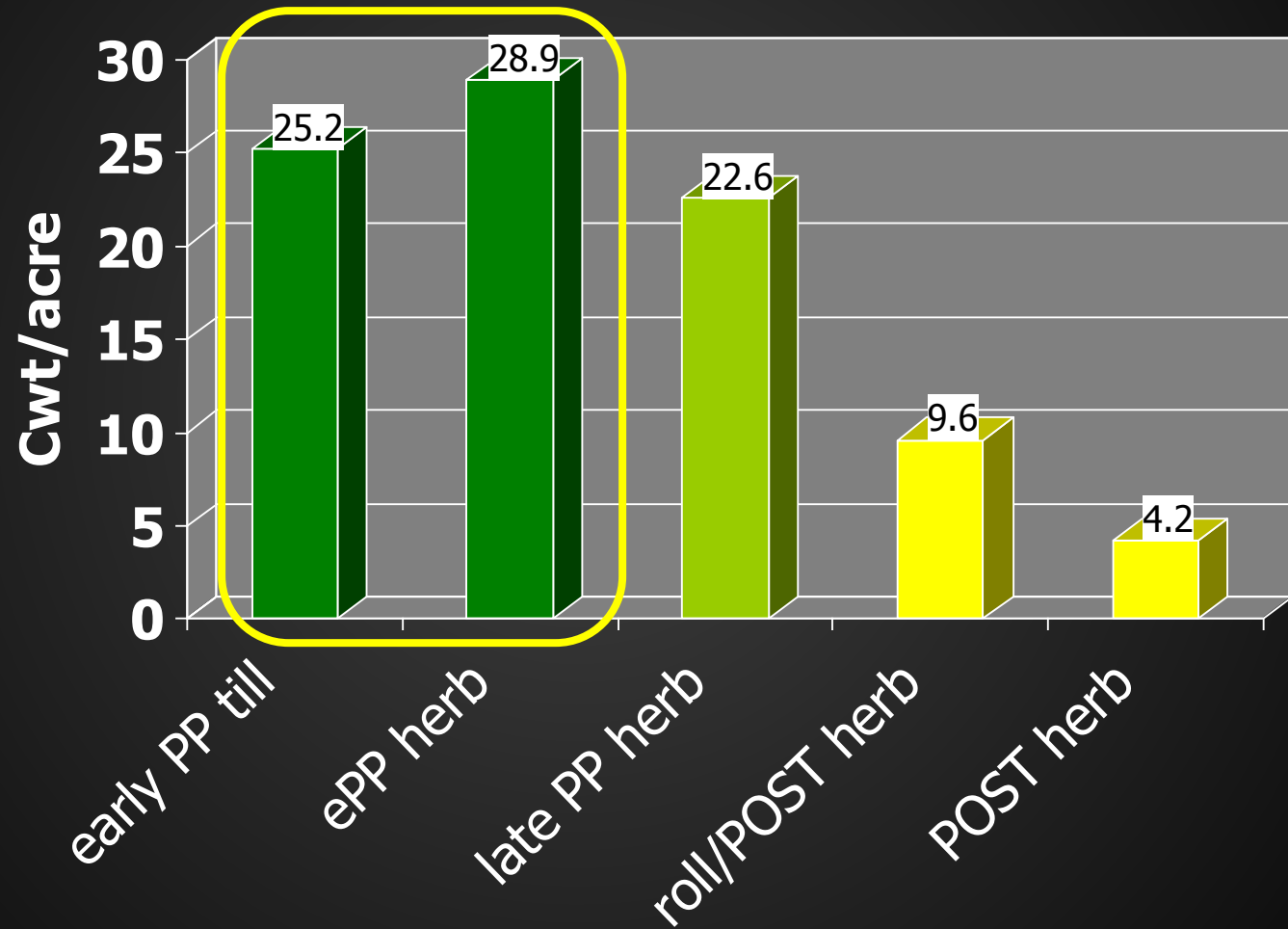
Pinto bean yield among tillage systems, Carrington, 2007 and 2009-12 (5 site-yr)



Winter rye as a cover/companion crop with dry bean



Pinto bean yield among rye termination timings, Carrington, 2017



- Winter rye with pinto bean
 - Pinto bean can yield well with rye as a cover crop
 - With marginal early season soil moisture, terminate rye before bean planting
 - Rye appears effective as a substitute for PRE herbicide

PP1820

Dry Edible Bean Disease Diagnostic Series

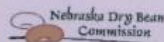
Samuel Markell, Extension Plant Pathologist,
North Dakota State University

Robert Harveson, Extension Plant Pathologist,
University of Nebraska

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

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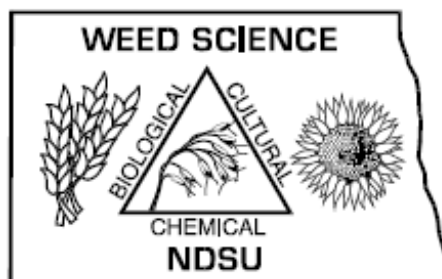


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2018 NORTH DAKOTA WEED CONTROL GUIDE



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

www.ndsu.edu/weeds/

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2018 ND Weed Control Guide:

Dry bean (pp. 32-33)

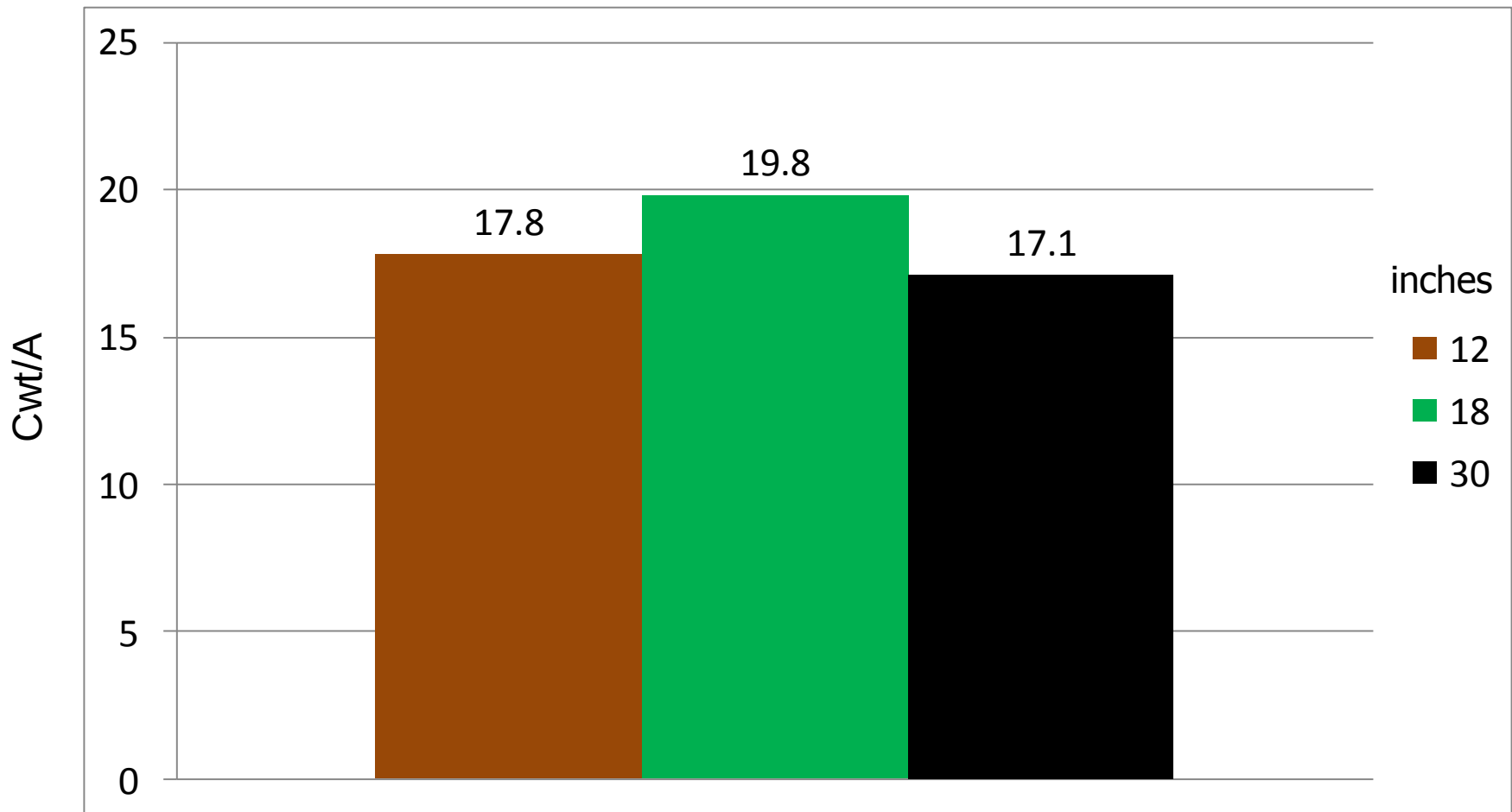
- Soil-applied herbicides – broadleaf weed control (10)
 - biennial wormwood: Spartan Charge/Elite (G)
 - kochia: Spartan C/E (F-E)
 - nightshade: Pursuit (E), Spartan C/E (E)
 - lambsquarters: DNAs (F-G), Permit (G-E), Spartan C/E (G-E)
 - redroot pigweed: DNAs (;E), Outlook (G-E), Pursuit (E), Spartan C/E (F-E)
 - waterhemp: DNAs (E), Spartan C/E (F-E), Outlook (G)
 - ragweed: Permit (E)
- POST herbicides (8)
 - Broadleaf: Basagran (biww, cora), Raptor (nightshade, repw), Reflex (kochia, ebns, rrpw, wahe), Varisto (nightshade, repw, biww)
- Preharvest herbicides (5)
 - glyphosate, Aim, paraquat, Sharpen and Valor



Dry bean **row spacings** reported by Northarvest growers, 2017

Market type	%		
	11-20"	21-25"	26-30"
Pinto	10.4	31.3	55.7
Black	6.6	57.8	38.5
Navy	15.7	56.9	27.5

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



*averaged across varieties, N levels and harvest methods

Kandel, Osorno et al.

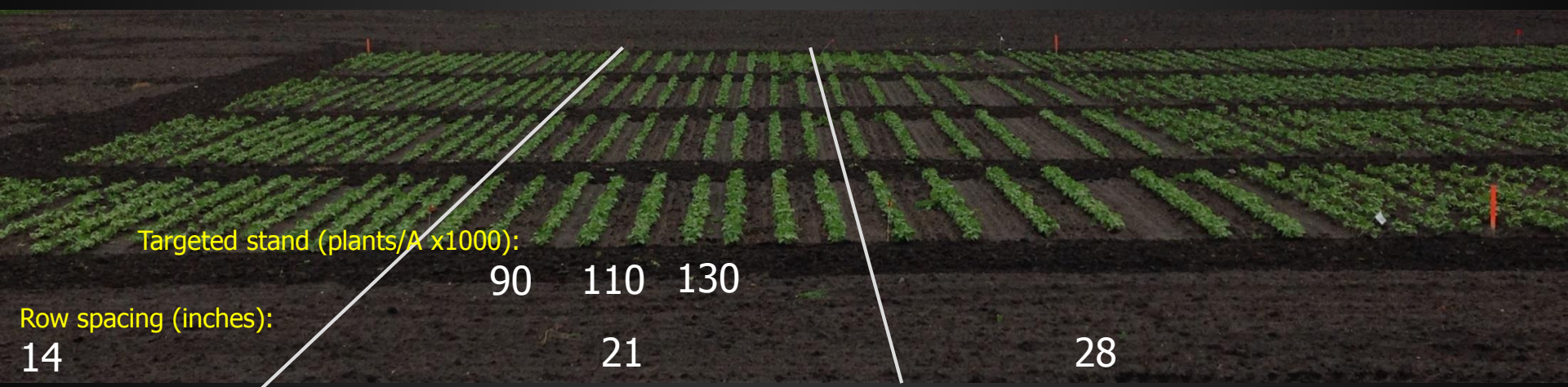
Pinto bean **planting rates (%)** reported by Northarvest growers, 2017

Market type	NDSU recommended stand [plts (x1000)/A]	Planting rate [seeds (x1000)/A]			
		<70	70-89	90-99	≥100
pinto	70	15.0	73.7	7.3	5.4

Black and navy bean **planting rates (%)** reported by Northarvest growers, 2017

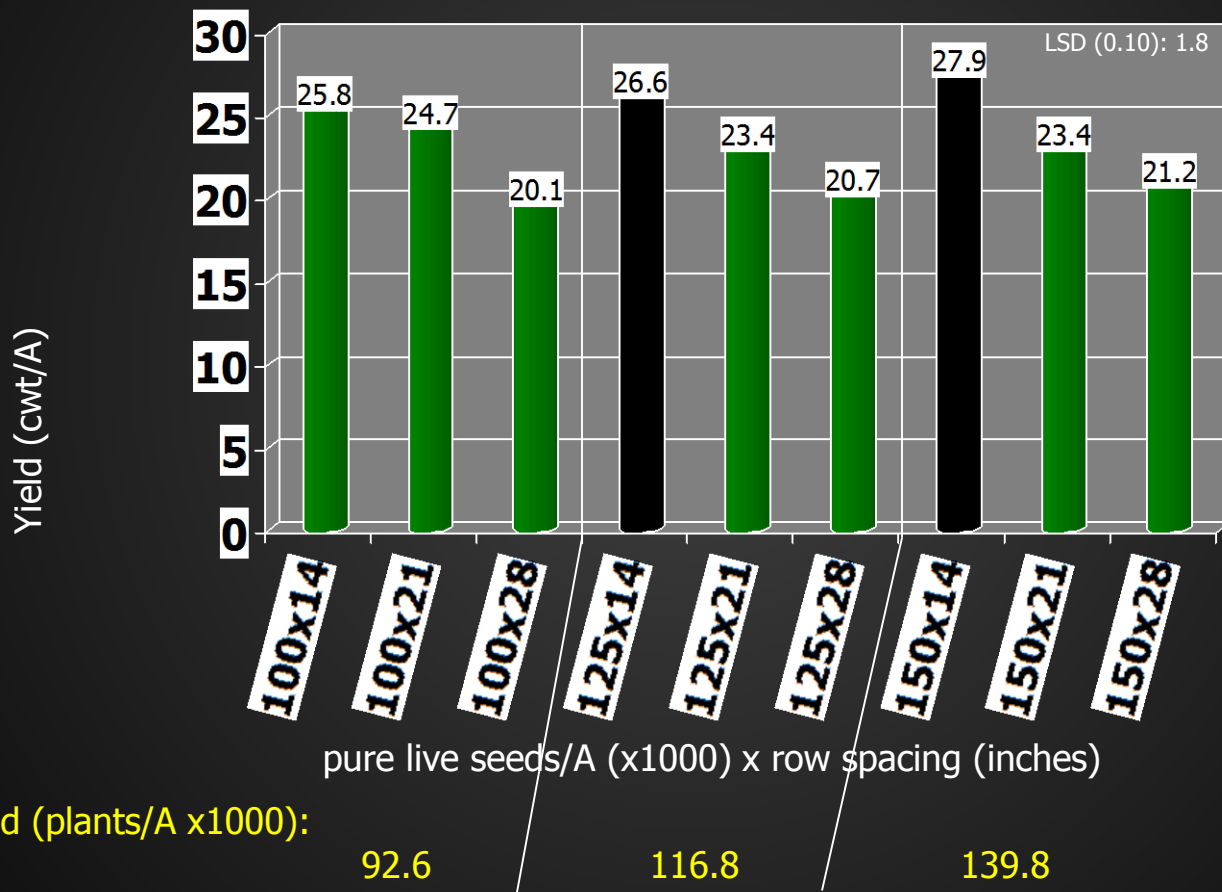
Market type	NDSU recommended stand [plts (x1000)/A]	Planting rate [seeds (x1000)/A]					
		<89	90-99	100-109	110-119	120-129	>129
black	90	7.5	7.5	27.5	35.0	20.0	2.5
navy		4.5	9.1	22.7	27.3	31.8	4.5

Black and navy bean response to **row spacing** **by plant population**, Carrington, 2014-17



Black and navy bean response to **plant population**, Park River, 2014 and Prosper, 2014-16 (H. Kandel)

'Avalanche' navy bean yield with 3 planting rates and 3 plant populations, Carrington, 2014 and 2016-17 (3 site-years)



Best combination with black and navy bean
among 3 row spacings and 3 plant populations

- Navy = 14 and 110-125,000 plants/acre
- Black = 14 or 21-inch and 110-130,000 plants/acre*

Questions?

