

NDSU Carrington Res Ext Center: **Weed Management update**

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Presentation content

1. Two weed control studies

a) Kochia control in wheat

b) Impact of ground rolling on herbicide efficacy in dry bean

2. Herbicide Site-of-Action quiz

Kochia control with Huskie FX in spring wheat, Carrington, 2023



Kochia control – visual evaluation on July 26, 2023 (55/42 days after treatments)

First application June 1 to 0.5 to 2” kochia and 1 to 4 leaf wheat. Second treatment applied June 14 to <2” kochia. Spray volume 10 gpa; XR nozzles.

Treatments	Rate	Control (%)
Huskie FX	15.5 fl oz/A	60
Huskie FX	18 fl oz/A	74
WideARmatch + MCPA ester	14 + 8 fl oz/A	57
Talinor + CoAct	13.7 + 2.75 fl oz/A	60
Bromac	16 fl oz/A	47
Huskie FX fb Starane NXT	18 fb 21 fl oz/A	98
C.V. (%)		19.3
LSD (0.10)		19

Starane Ultra
8.2 fl oz/A

Dry bean ground rolling

9 51 5 36 %

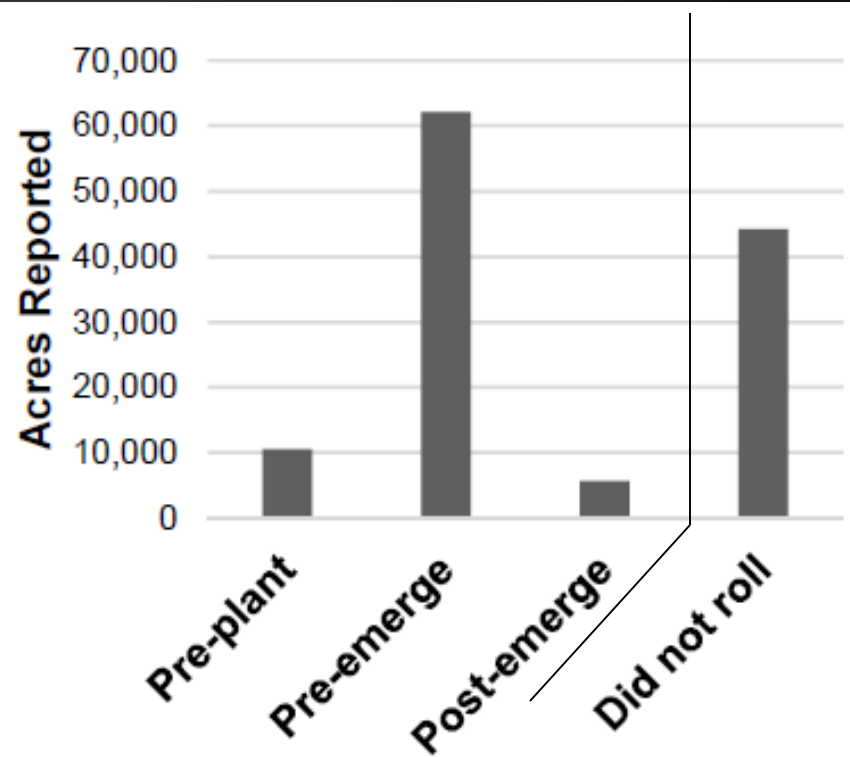



Figure 8. Northharvest ground rolling on dry bean fields in 2021.

Table 2: Plant and Soil Response as Measured in the Dry Bean Field Rolling Trial, Arborg, MB 1999

Treatment ^w	Yield (lbs/acre)	Plants /m ² (#)	Damaged Plants/m ² (#)
No Rolling	3040	63	0
Rolling prior to emergence	3000	63	0
Rolling 7 days after emerg.	3100	63	2.4
Mean	3047	63	1
C.V. (%) ^w	11.53	12.9	134.16
LSD (0.05) ^w	ns	ns	1.5

^w The rolling was conducted using a 12.2 metre wide Begelman Industries field roller.

Timing of ground rolling on PRE and POST herbicide weed efficacy in pinto bean, eastern ND, 2023

- Joe Ikley, NDSU Extension weed specialist; supported by Northarvest BGA 
- Ground roll before or after pre-emergence and post-emergence applied herbicides
 - 3 sites; 10 treatments
 - Impact on weed control and dry bean?

Trial Locations – Weed Species

- Fargo (no-till)
 - **Waterhemp**
- Amenia (conventional till)
 - **Yellow foxtail, Powell amaranth**
 - Wild proso millet, Common lambsquarters, common ragweed, Venice mallow, hairy nightshade
- Carrington (conventional till)
 - **Green foxtail**
 - Common lambsquarters, common purslane, kochia, redroot pigweed, prostrate pigweed

Carrington



Pictures taken June 26 (Carrington) – 19 days after bean planting and PRE herbicide app (June 7)

No herbicide



no roll

PRE herbicide (Spartan Elite)

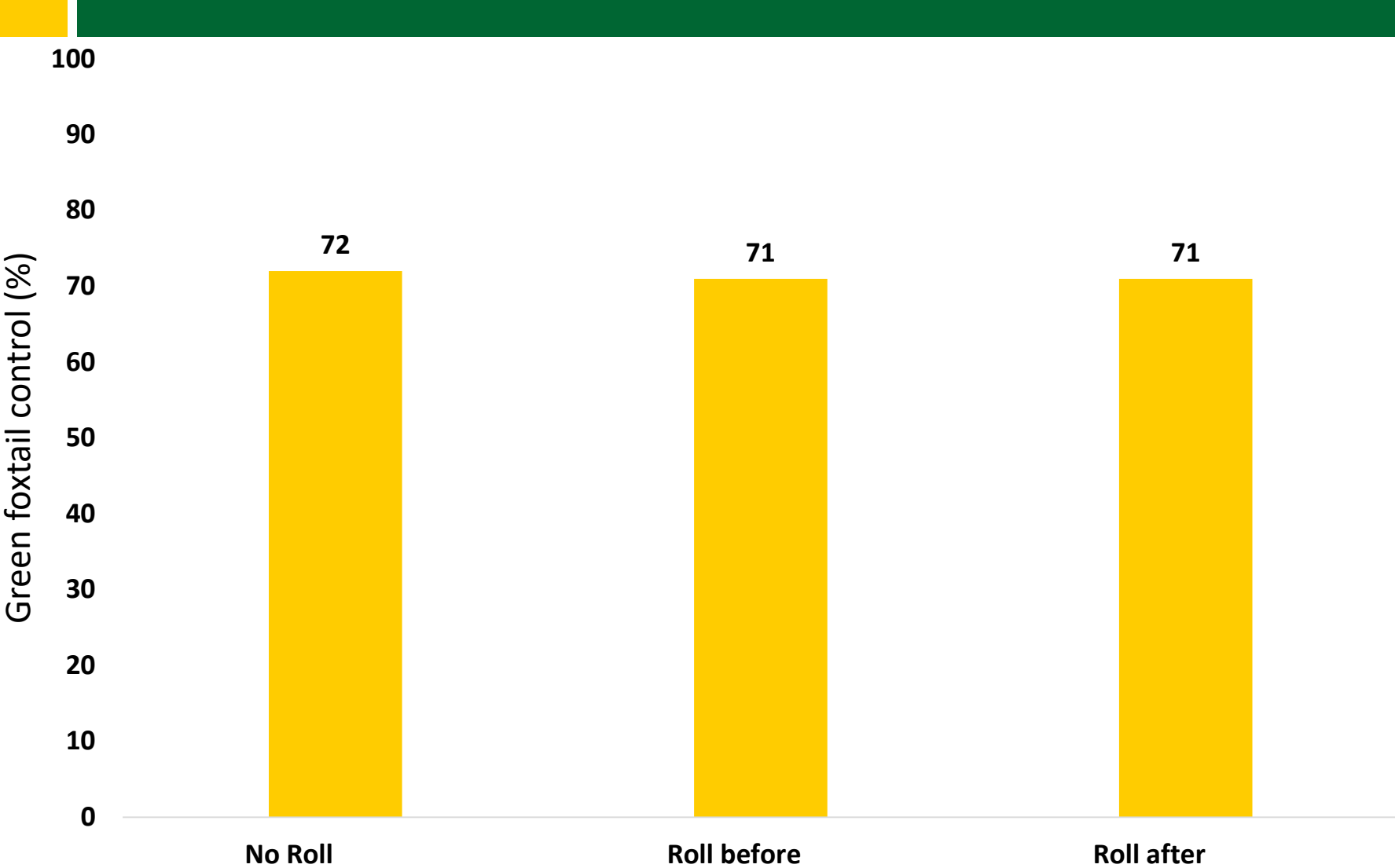


roll

Roll after app

Roll before app

Green foxtail control (19 DAA) following Spartan Elite and roll timing, Carrington, 2023



LSD (0.05) – NS

Timing of ground rolling on PRE and POST herbicide weed efficacy in pinto bean, Carrington, 2023

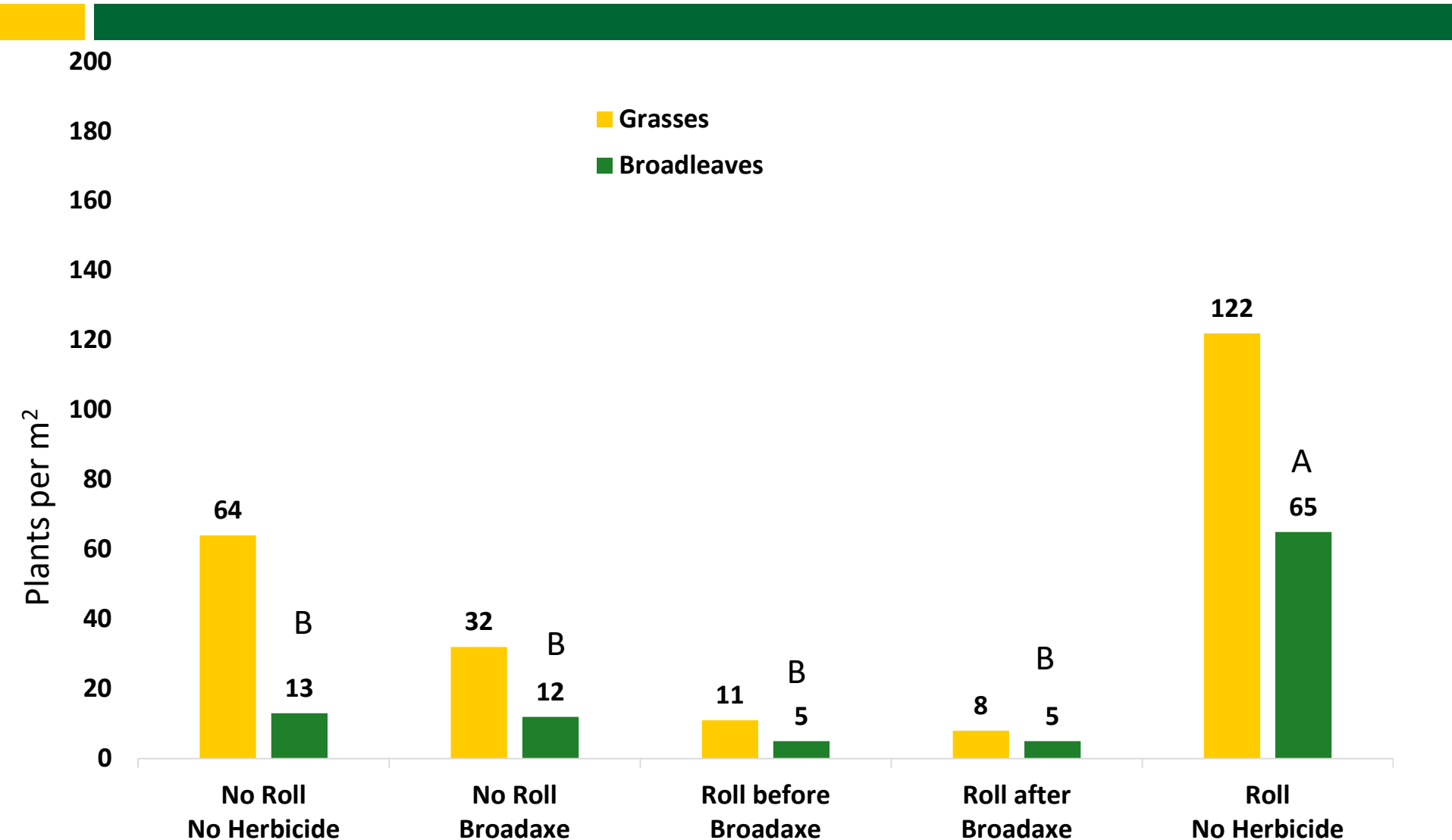
○ Weeds

- Plant populations generally similar – roll vs. no roll
- Green foxtail control – **similar with roll before or after PRE or POST (Varisto+Reflex+Trizenta+adjuvants) herbicide application**

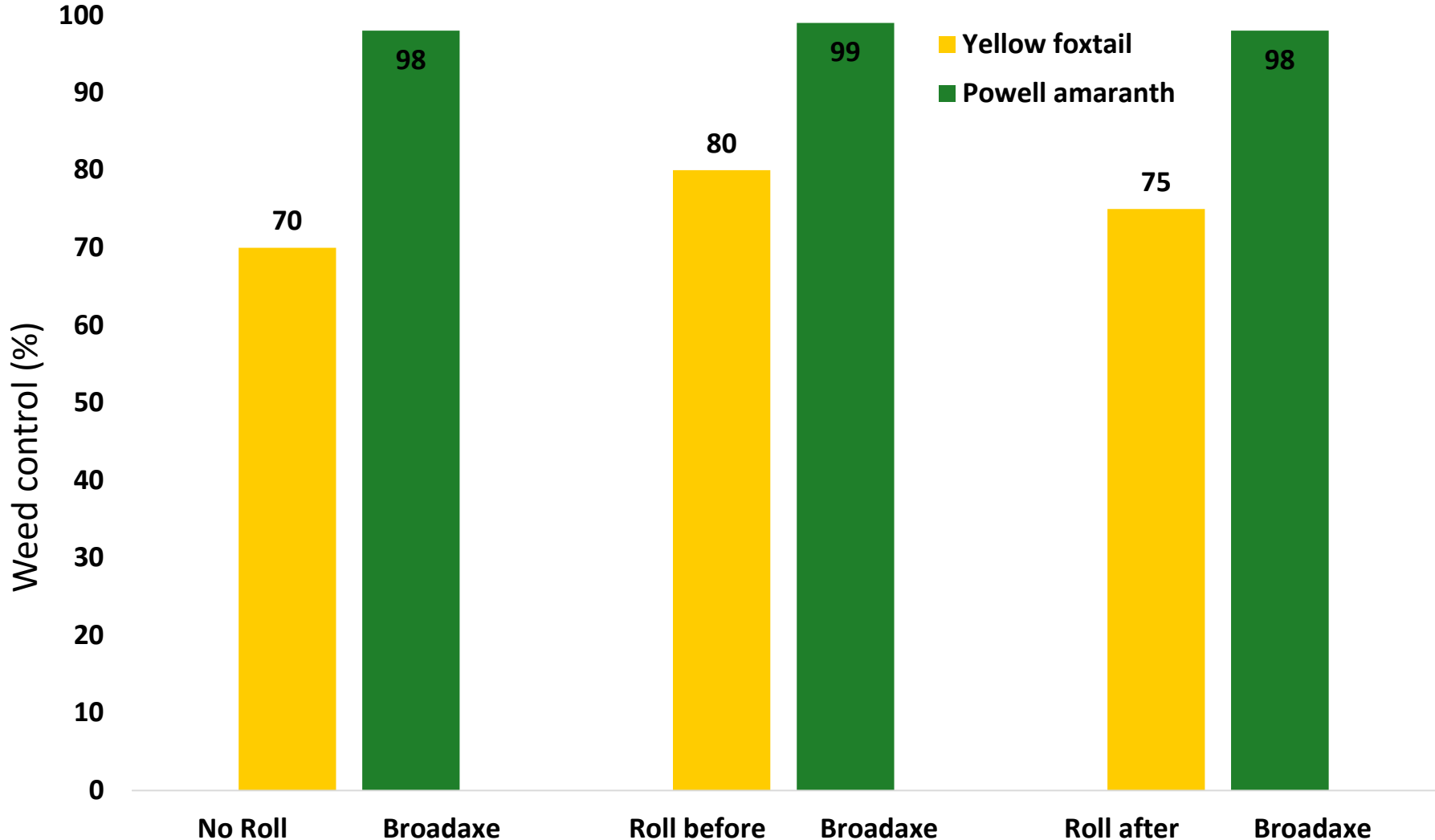
○ Pinto bean

- Yield greatest with PRE/POST herbicide trts (17.5-23.8 cwt/A; trial ave.=15.6 cwt/A)
 - Primarily with PRE herbicide
- Plant stand (trial ave. = 40,000/A) – no difference among treatments
- Plant injury
 - Roll at PRE herbicide application - none
 - Roll at POST herbicide application (V2) – mechanical damage ranging from 19-34% incidence

Amenia 2023 – 20 DAP

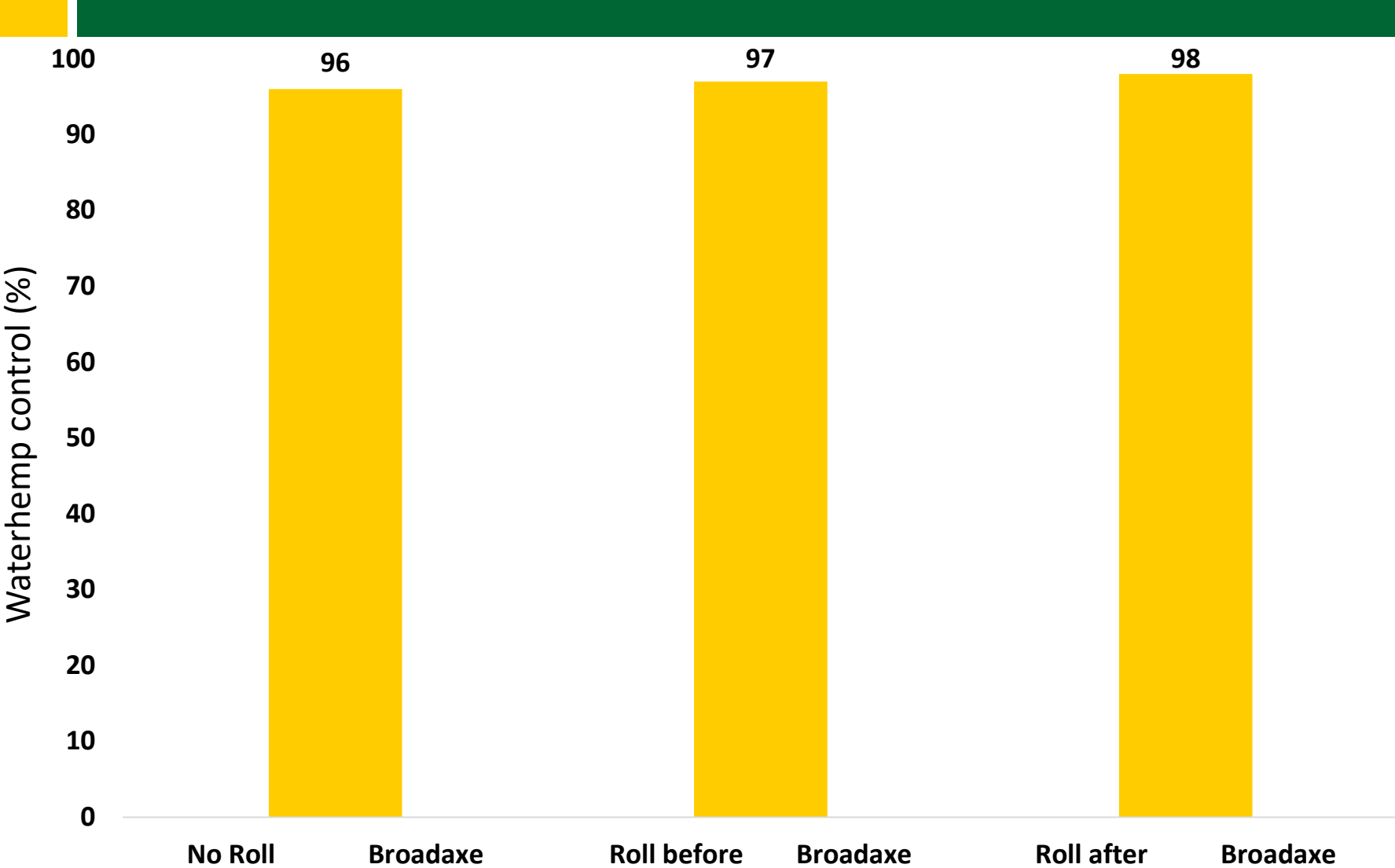


Amenia 2023 – 20 DAP



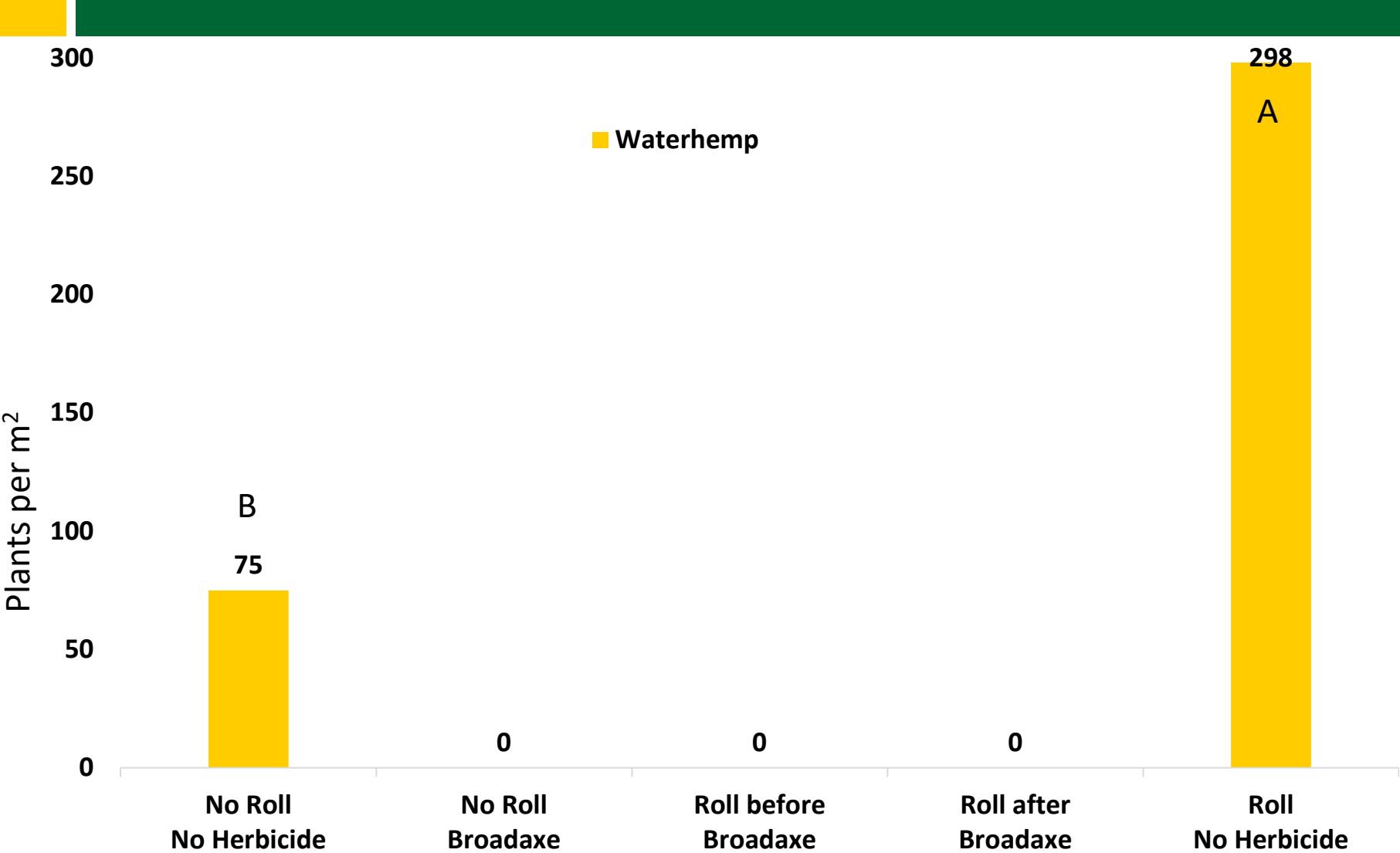
LSD (0.05) – NS

Fargo 2023 – 20 DAP



LSD (0.05) – NS

Fargo 2023 – 63 DAP



Other Results

- POST waterhemp control impacted by rolling (without PRE)
 - Rolling – 76% control
 - No rolling – 85% control
- POST rolling did not impact POST herbicide efficacy
- PRE rolling did not impact pinto bean stand
- POST rolling caused injury (~5%), but no stand loss

Herbicide Site-of-Action demo, Carrington REC



SOA Group 1, 2, 4, 5, 6, 9, 10, 22, 27

corn



barley



1: clethodim/Select

SOA Group **1**, 2, 4, 5, 6, 9, 10, 22, 27

wheat



soybean (RR)



9: glyphosate/RU PowerMax

SOA Group **1**, 2, 4, 5, 6, **9**, 10, 22, 27

Pinto bean



Soybean (XF)



4: 2,4-D/Enlist One

SOA Group **1**, 2, **4**, 5, 6, **9**, 10, 22, 27

corn



soybean



2: imazamox/Raptor

thien carbazon/Varro

SOA Group **1, 2, 4, 5, 6, 9, 10, 22, 27**

soybean



2 DAT



Liberty

22: paraquat/Gramoxone Inteon

SOA Group **1, 2, 4, 5, 6, 9, 10, 22, 27**

soybean (RR2X)



flax



10: glufosinate/Liberty 280

SOA Group **1, 2, 4, 5, 6, 9, 10, 22, 27**

HRSW and wild buckwheat



5: atrazine

SOA Group **1, 2, 4, 5, 6, 9, 10, 22, 27**

Redroot pigweed



6: bentazon/Basagran

SOA Group **1, 2, 4, 5, 6, 9, 10, 22, 27**

Soybean (RRX)



Pinto
bean



27: tembotrione/Laudis

topramezone/Armezon

Comments or questions?

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