

A Seven Year Review of Fungicide and Integrated Management Trials in Spring Barley

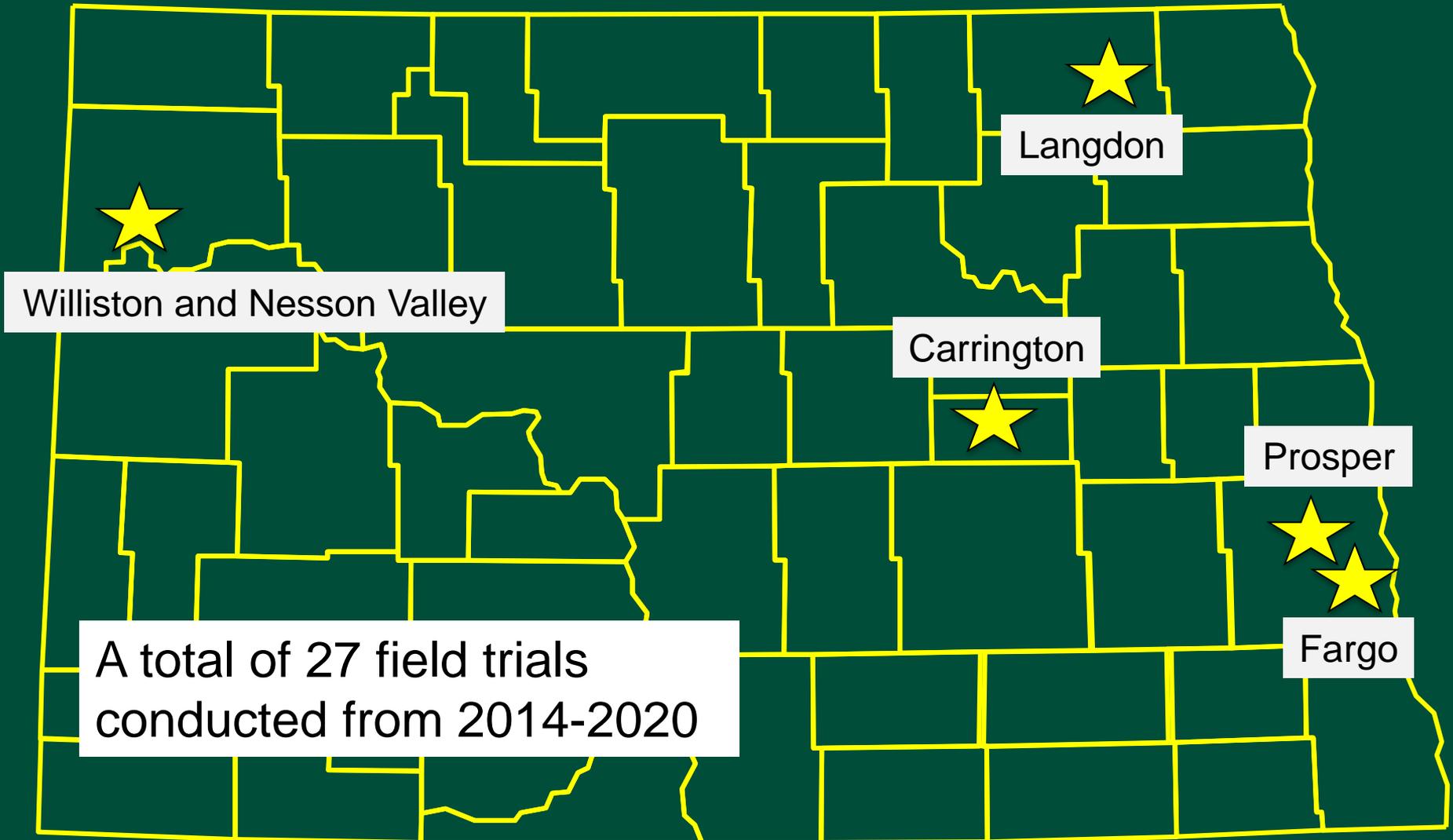


Collaborators





USWBSI Fungicide Trials



Today's Presentation

- Uniform Fungicide Trials (Efficacy and Timing)
 - 2014-2015 (4 field trials)
 - 2018-2019 (2 field trials)
 - 2020 (1 field trial)
- Integrated Management Trials (Variety by Fungicide)
 - 2014-2015 (4 field trials)
 - 2016-2017 (10 field trials)
 - 2018-2019 (4 field trials)
 - 2020 (2 field trials)

How the Data is Presented

- Dexoxynivalenol/Vomitoxin (DON/VOM) data is presented as percent control (compared to check)
- Data combined across multiple experiments (trials) for each respective study
- PROC GLIMMIX

Fks. 10

Fks. 10.3

Fks. 10.5

Fks. 10.5
+ 1-3 days

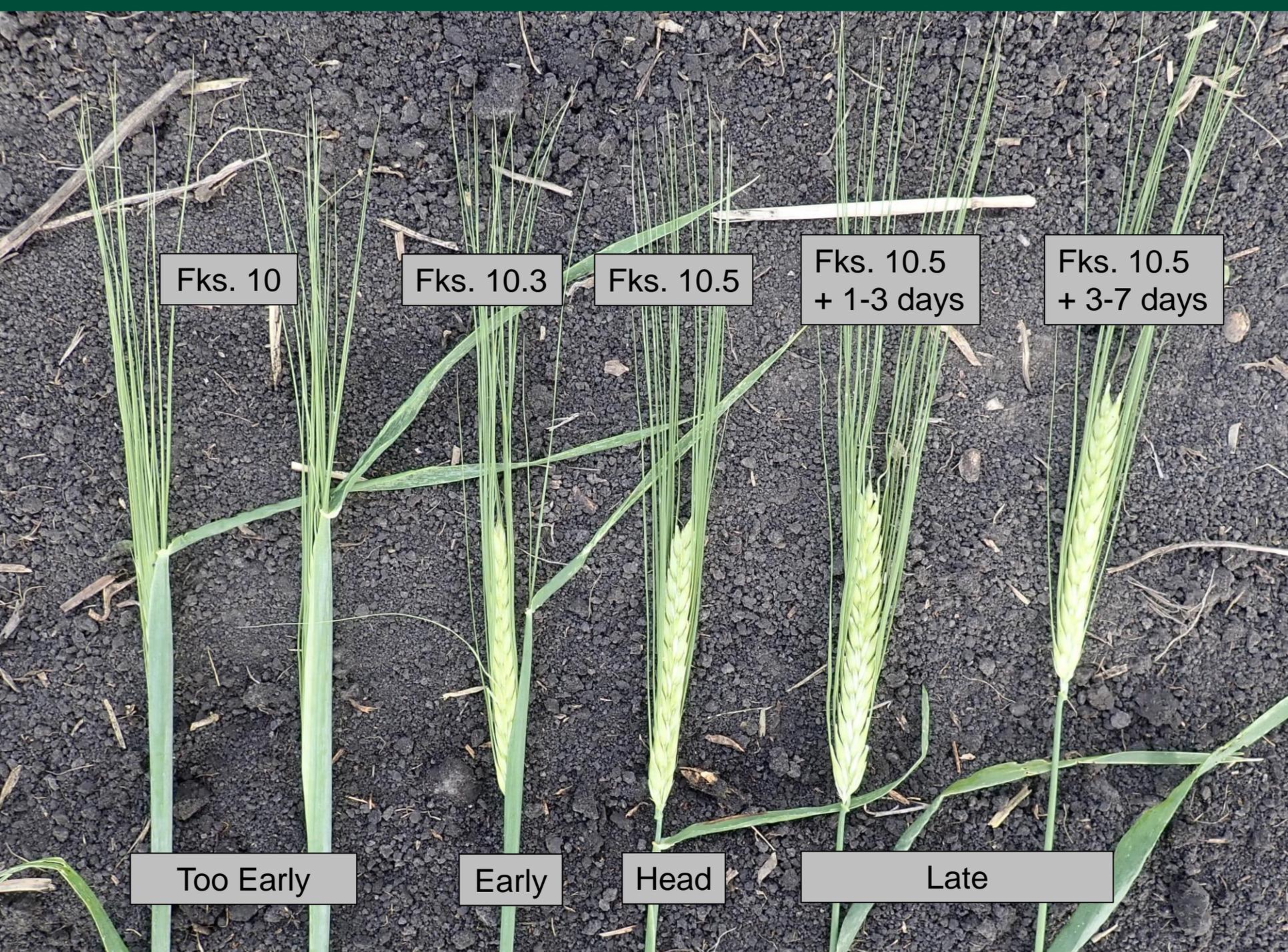
Fks. 10.5
+ 3-7 days

Too Early

Early

Head

Late



2014-2015 Efficacy Trials (UFT)
Demethylation Inhibitors/DMI/FRAC 3

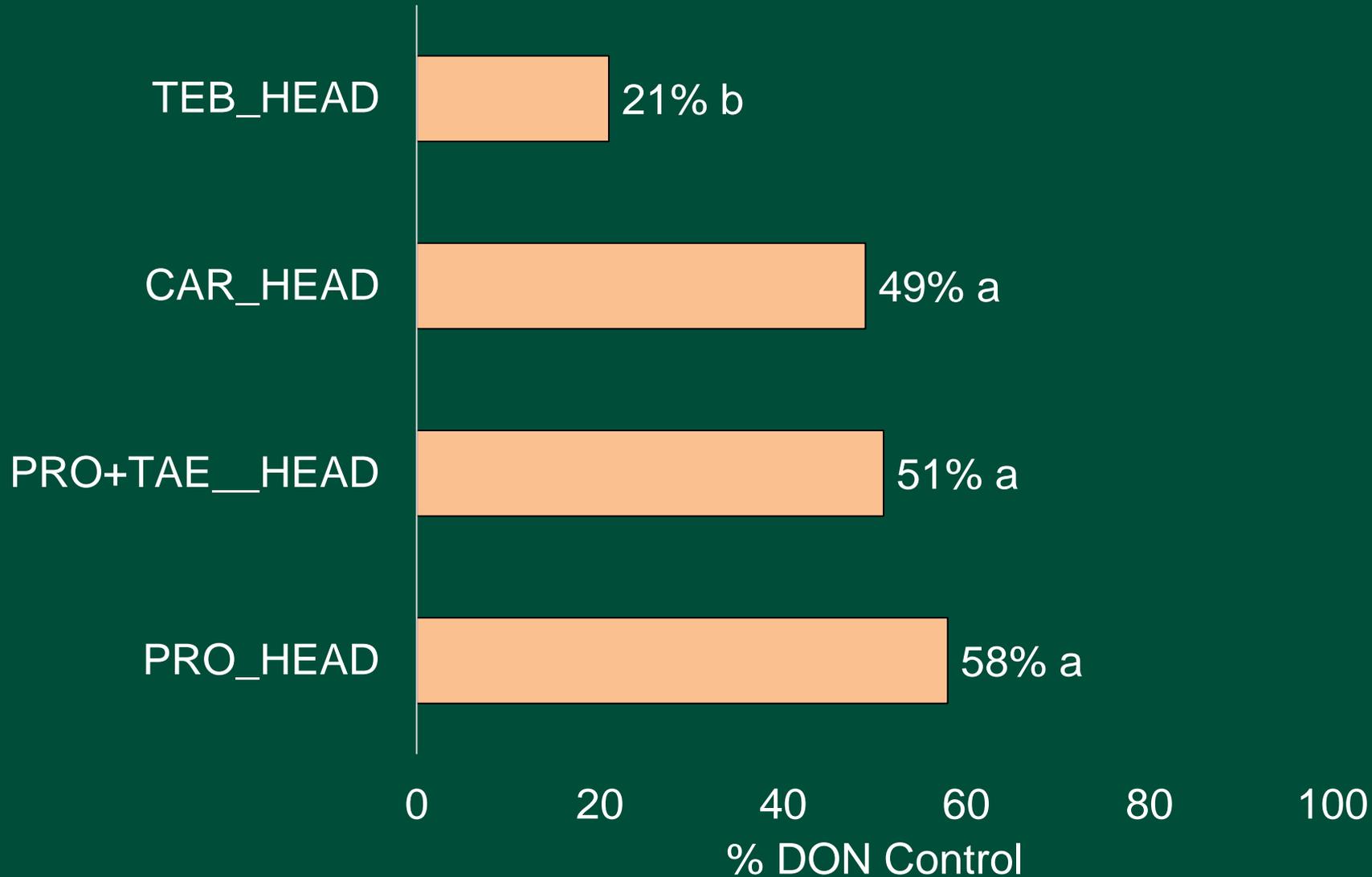
2014-2015 Fungicide x Variety (IM)
Post-heading (late) applications

2014-2015 UFT Trials

- Four trials
- Three trials analyzed

Fungicides	Timing	Rate
Prosaro	Feekes 10.5	6.5 oz
Prosaro+Taegro	Feekes 10.5	6.5 oz + 5.2 oz
Caramba	Feekes 10.5	13.5 oz
Folicur (generics)	Feekes 10.5	4 oz

2014-15 – DON Control



2014-2015 Efficacy Trials (UFT)
Demethylation Inhibitors/DMI/FRAC 3

2014-2015 Fungicide x Variety (IM)
Post-heading (late) applications

2014-2015 IM Trials

Variety	Type	Resistance
Tradition	Six-row	S
Celebration	Six-row	S
Quest	Six-row	MS
Conlon	Two-row	MS
ND-Genesis	Two-row	MS
Rawson	Two-row	S

- Four trials
- Three trials analyzed
- Three to Five Varieties used at Each Location

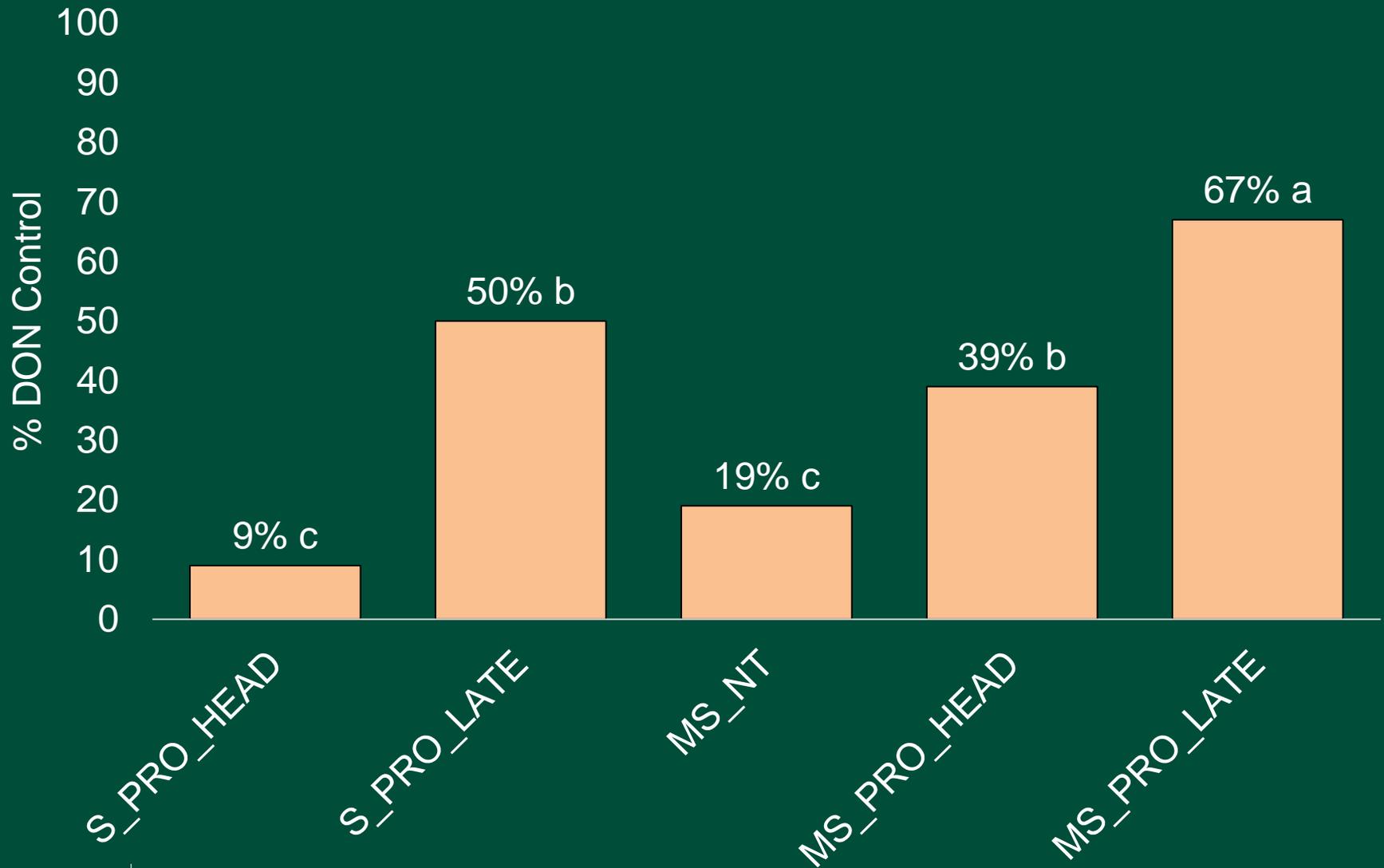
Treatment	Timing	Rate
Non-treated Control	-	-
Prosaro	Feekes 10.5	6.5 oz
Prosaro	3-7 days after Feekes 10.5	6.5 oz

Management Combinations

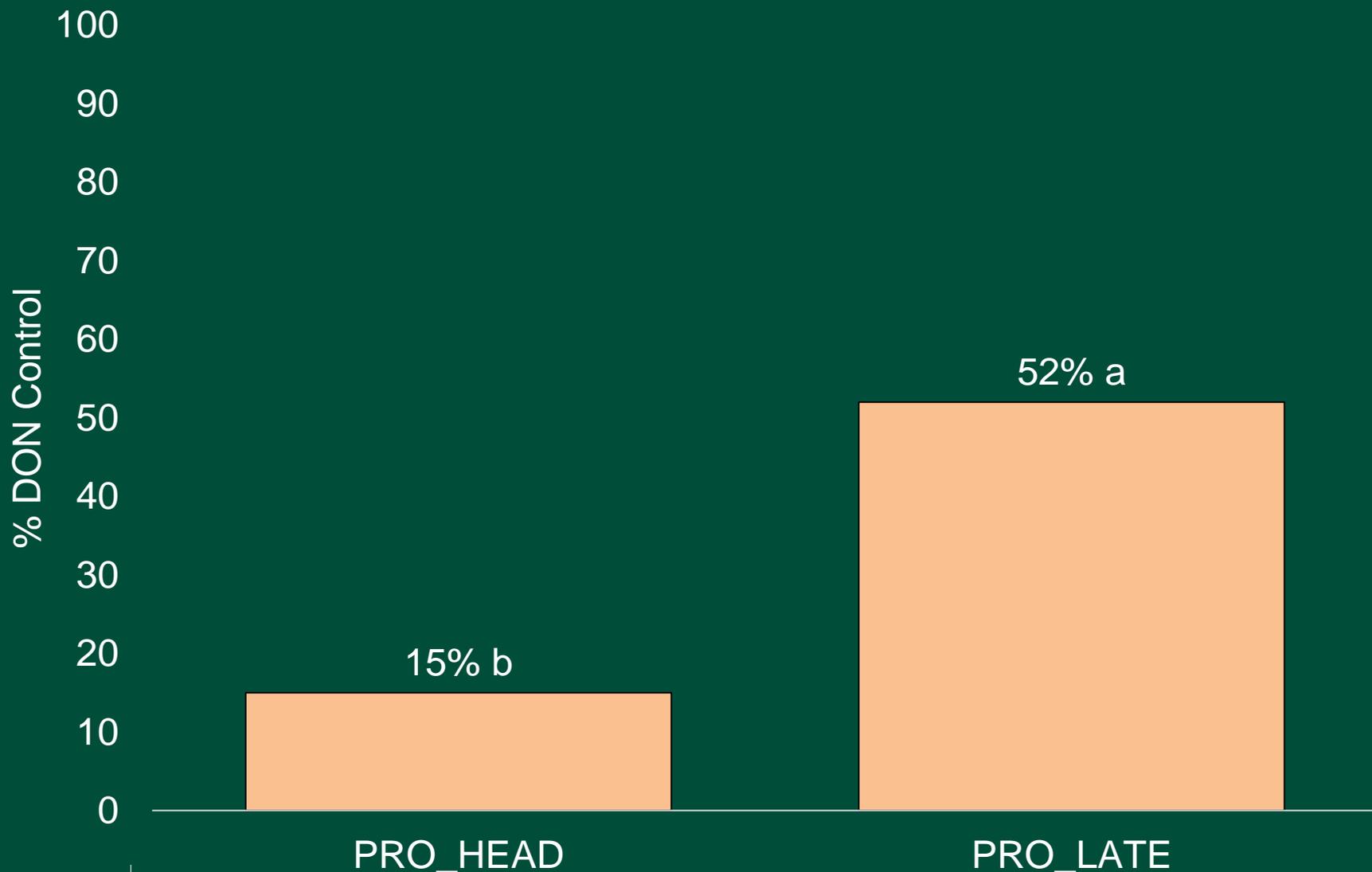
- S_PRO_HEAD
- S_PRO_LATE
- MS_NTC
- MS_PRO_HEAD
- MS_PRO_LATE



2014-2015 – IM – DON Control



2014-2015 – Fung – DON Control



2014-2015 Summary

- Caramba and Prosaro have similar efficacy to each other
- An integrated strategy resulted in greater DON reduction
- Data suggests making a fungicide application three to five days after complete head emergence

2016-2017 Fungicide x Variety (IM) *Double Fungicide Applications*

2016-17 IM Trials

Variety	Type	Resistance
Tradition	Six-row	S
Quest	Six-row	MS
Conlon	Two-row	MS
Pinnacle	Two-row	S
ND-Genesis	Two-row	MS
Rawson	Two-row	S

- Ten trials
- Two to Three Varieties at Each Location

Treatment	Timing	Rate
Non-treated Control	-	-
Prosaro	Feekes 10.5	6.5 oz
Prosaro fb Caramba	Feekes 10.5 fb 3-7 days later	6.5 oz fb 13.5 oz
Caramba fb Folicur	Feekes 10.5 fb 3-7 days later	13.5 oz fb 4 oz
Proline fb Folicur	Feekes 10.5 fb 3-7 days later	5.7 oz fb 4 oz

Disease Environments

- High – 3 trials, above 3 ppm DON
- Low - 3 trials, 0.4 to 0.5 ppm
- No disease – 4 trials, no detectable DON



Statistical differences detected only in high disease environments

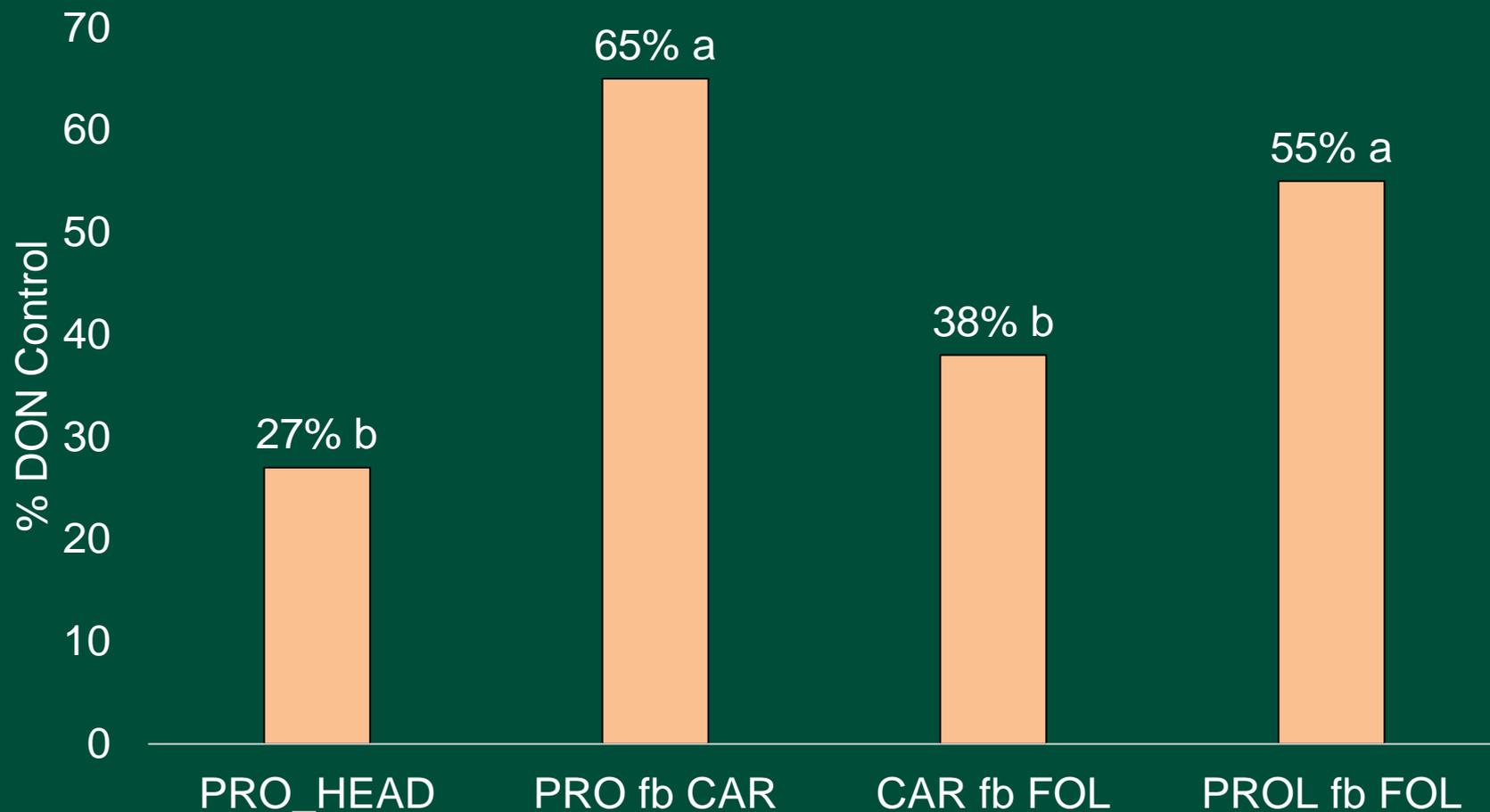
IM 16-17 -MGMT-DON Control

High Disease Environment

Treatment	Variety	DON
Prosaro	S	30% b
Prosaro fb Caramba	S	68% a
Caramba fb Folicur	S	19% b
Proline fb Folicur	S	57% a
Non-treated	MS	-0.7% c
Prosaro	MS	30% b
Prosaro fb Caramba	MS	65% a
Caramba fb Folicur	MS	51% a
Proline fb Folicur	MS	55% a

IM 16-17-Fungicide-DON Control

High Disease Environment



2016-2017 Summary

- Two applications of a fungicide generally improved DON control
- In most cases, the use of an integrated strategy did not result in greater DON control

2018-2020 IM and UFT Trials

Efficacy and Timing of Miravis Ace

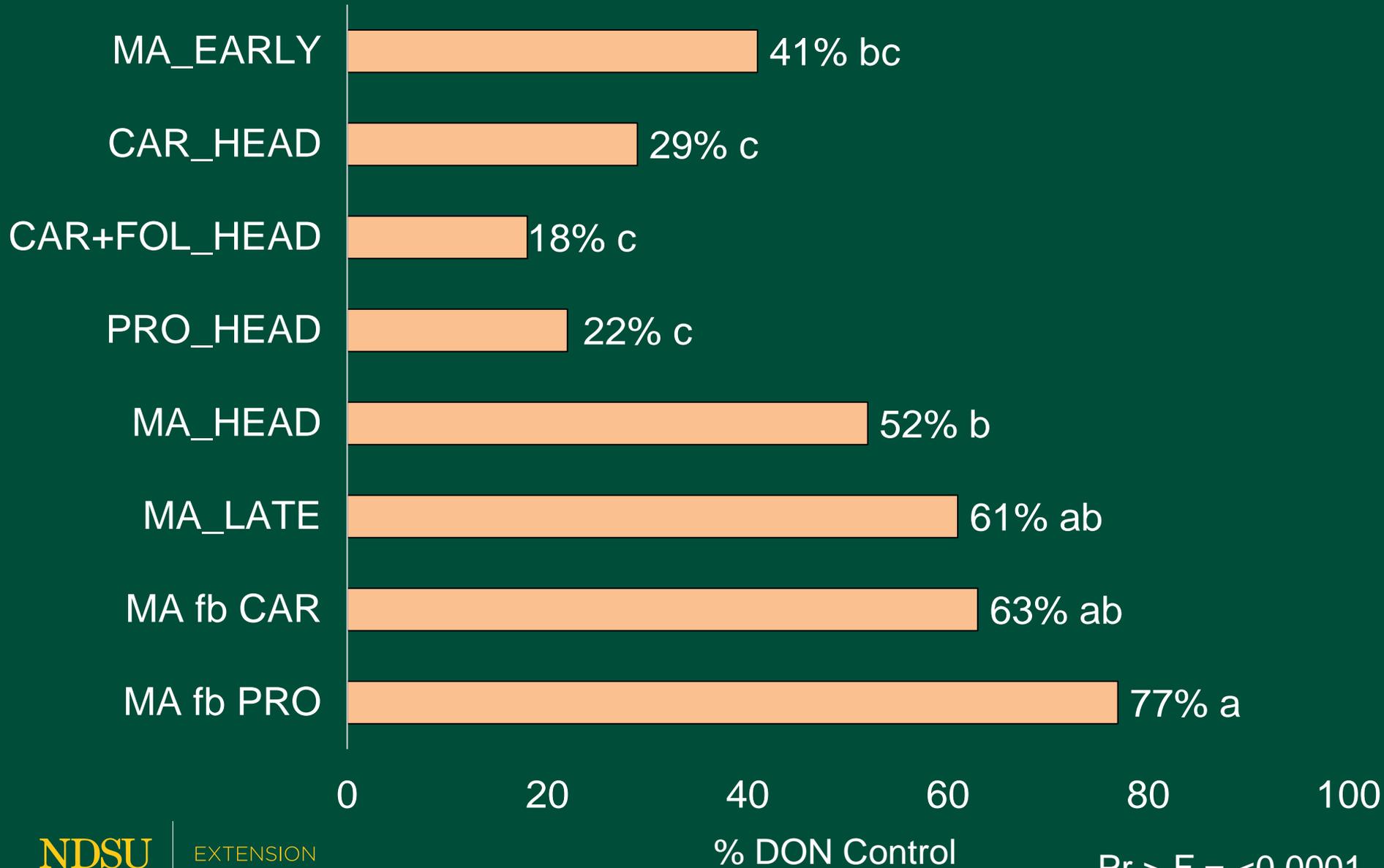


2018-2019 UFT Trials

Two trials and both analyzed

Fungicides	Timing	Rate
Non-Treated Control		
Miravis Ace	Feekes 10.3	13.7 oz
Prosaro	Feekes 10.5	6.5 oz
Caramba	Feekes 10.5	13.5 oz
Caramba+Folicur	Feekes 10.5	10 oz + 4 oz
Miravis Ace	Feekes 10.5	13.7 oz
Miravis Ace	3-5 days after Feekes 10.5	13.7 oz
Miravis Ace fb Caramba	Feekes 10.5 fb 3-5 days later	13.7 oz fb 13.5 oz
Miravis Ace fb Prosaro	Feekes 10.5 fb 3-5 days later	13.7 oz fb 6.5 oz

2018-19 –DON Control



2018-19 IM Trials

Variety	Type	Resistance
Tradition	Six-row	S
Quest	Six-row	MS
Pinnacle	Two-row	S
ND-Genesis	Two-row	MS

- Four trials
- Three trials analyzed
- Two Varieties at Each Location

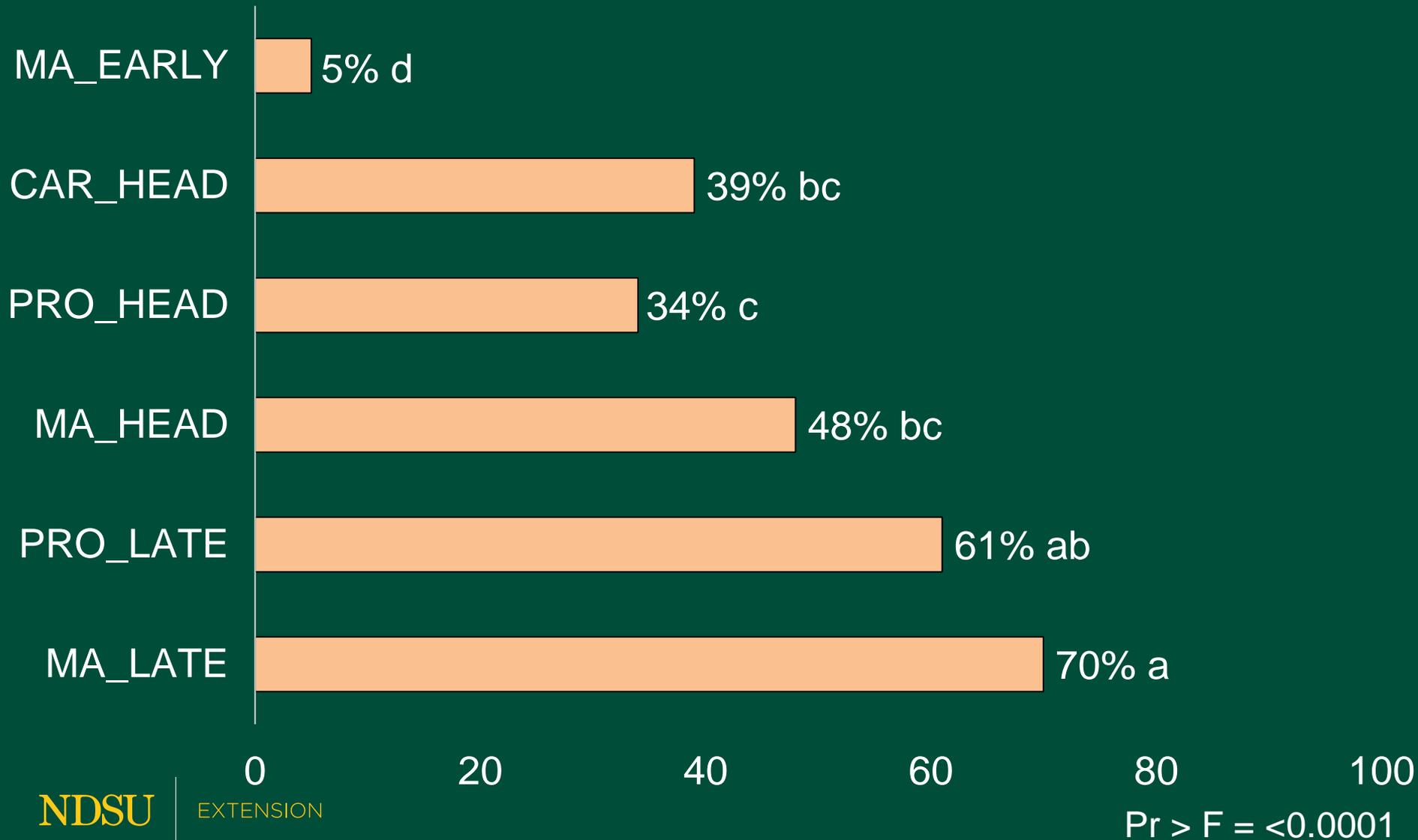
Treatment	Timing	Rate
Non-treated Control	-	-
Miravis Ace	Feekes 10.3	13.7 oz
Caramba	Feekes 10.5	13.5 oz
Prosaro	Feekes 10.5	6.5 oz
Miravis Ace	Feekes 10.5	13.7 oz
Prosaro	3-5 days after Feekes 10.5	6.5 oz
Miravis Ace	3-5 days after Feekes 10.5	13.7 oz

IM 18-19-MGMT-DON Control

Treatment	Timing	Variety	DON
Miravis Ace	Early	S	11% f
Caramba	Full Head	S	59% abc
Prosaro	Full Head	S	36% cde
Miravis Ace	Full Head	S	51% abdc
Prosaro	Late	S	64% ab
Miravis Ace	Late	S	70% a
NTC	-	MS	2% f
Miravis Ace	Early	MS	15% ef
Caramba	Full Head	MS	22% def
Prosaro	Full Head	MS	42% bcd
Miravis Ace	Full Head	MS	53% abdc
Prosaro	Late	MS	63% ab
Miravis Ace	Late	MS	66% a

Pr > F = <0.0001

2018-20 Fungicide Efficacy – DON Control



2018-2020 Summary

- Miravis Ace just as effective as Prosaro and Caramba
- Miravis Ace at full head or up to 6 days later provided most consistent results
- Late (post-head) applications provided most DON control

Final Thoughts



Questions

