

# **Fungicides and Integrated Management of Head Scab and Vomitoxin in Wheat with Emphasis on Miravis® Ace: A 2020 Update**

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**The Ohio State University**

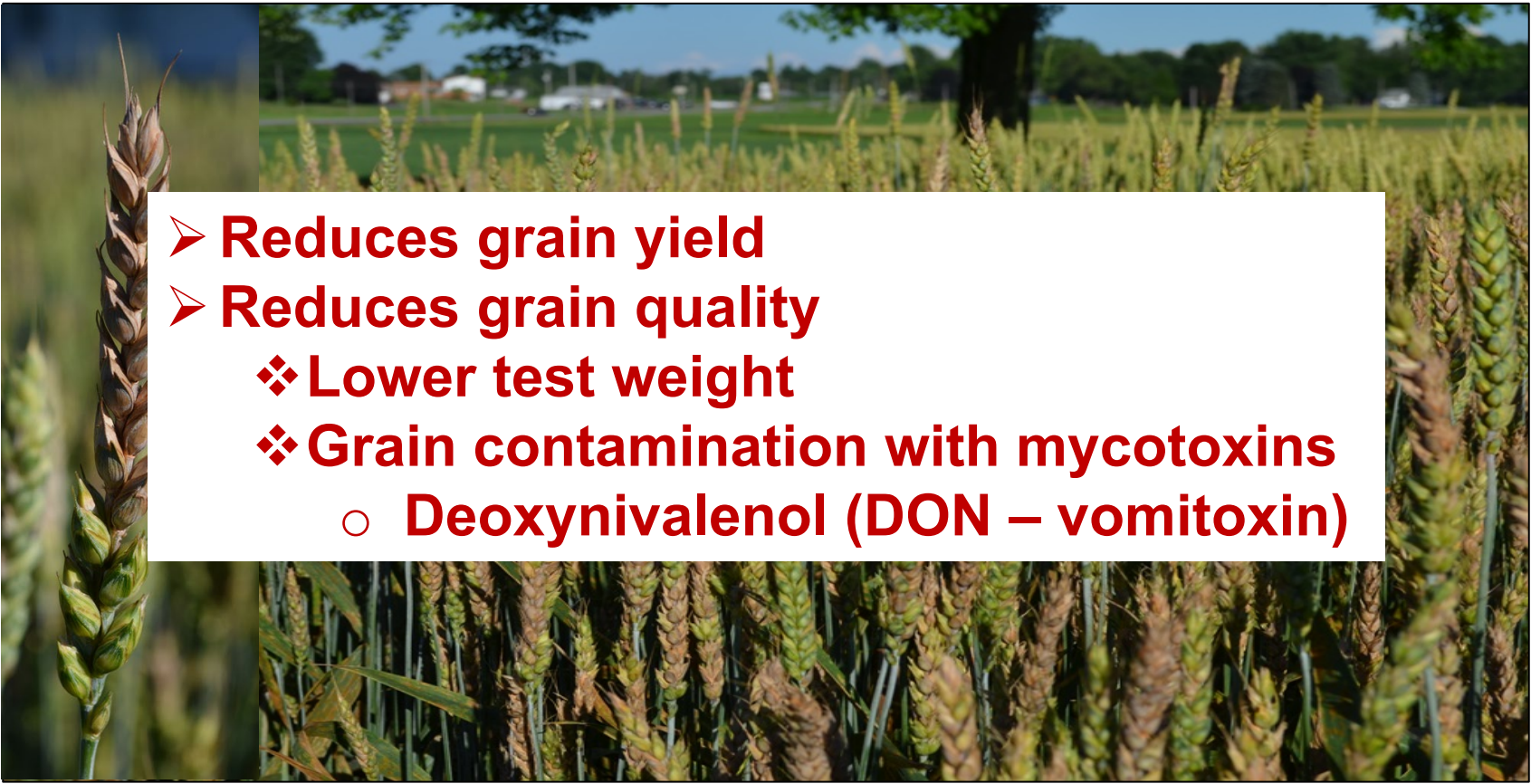


**THE OHIO STATE UNIVERSITY**

COLLEGE OF FOOD, AGRICULTURAL,  
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# Fusarium head blight (head scab)

*Fusarium graminearum* (*Gibberella zeae*)

- 
- **Reduces grain yield**
  - **Reduces grain quality**
    - ❖ **Lower test weight**
    - ❖ **Grain contamination with mycotoxins**
      - **Deoxynivalenol (DON – vomitoxin)**

# Miravis Ace

State	Status
AL,CO,IA,ID,KS,KY,LA,MI,MN,MO,MT,NC,NE,NV,OH,OK,SC,TN,WA,WI,WV,WY	Approved
AR,AZ,CT,DE,FL,GA,IL,IN,MA,MD,ME,MS,ND,NH,NJ,NM,OR,PA,RI,SD,TX,UT,VA,VT	Submitted
CA,NY	Pending

Legend
Approved = Latest Version approved in state(s), but may not yet be on container
Cancelled = Latest no longer available for use in state(s)-e.g 24(c), Section 18, 2(ee), supplemental
Disapproved = Label version not approved by state
Submitted = Label version awaiting state approval
Pending = Preparation of submission package to state in progress

**SDHI - Pydiflumetofen**  
**+**  
**DMI - Propiconazole**



PYDIFLUMETOFEN	GROUP	7	FUNGICIDE
PROPICONAZOLE	GROUP	3	FUNGICIDE
AZOXYSTROBIN	GROUP	11	FUNGICIDE

PULL HERE TO OPEN ►

PROPICONAZOLE	GROUP	3	FUNGICIDE
PYDIFLUMETOFEN	GROUP	7	FUNGICIDE

PULL HERE TO OPEN ►

## Miravis<sup>®</sup> Ace

### Fungicide

*Active Ingredients:*

Pydiflumetofen*	13.7%
Propiconazole**	11.4%
<hr/>	
<i>Other Ingredients:</i>	74.9%
<b>Total:</b>	<b>100.0%</b>

\*CAS No. 1228284-64-7  
\*\*CAS No. 60207-90-1

Miravis<sup>®</sup> Ace is a suspoemulsion (SE) formulation and contains 1.254 lb of active ingredient pydiflumetofen and 1.047 lb ai active ingredient propiconazole per gallon.

**KEEP OUT OF REACH OF CHILDREN.**  
**CAUTION**

See additional Precautionary Statements and Directions for Use inside booklet.

**EPA Reg. No. 100-1645**  
**EPA Est. 100-NE-001**

SCP 1645A-L1 0219  
4104399

**2.5 Gallons**  
Net Contents

# Heading: Feekes 10.1-10.5

10.1

10.2

10.3

10.4

10.5





# Early Anthesis/Flowering: Feekes 10.5.1

**Early**

**Mid**

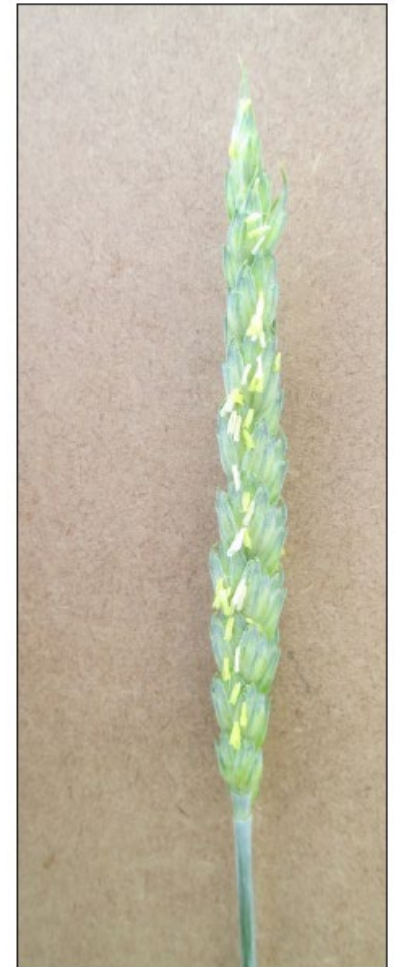
**Late**



**Feekes 10.5.1**



**Feekes 10.5.2**

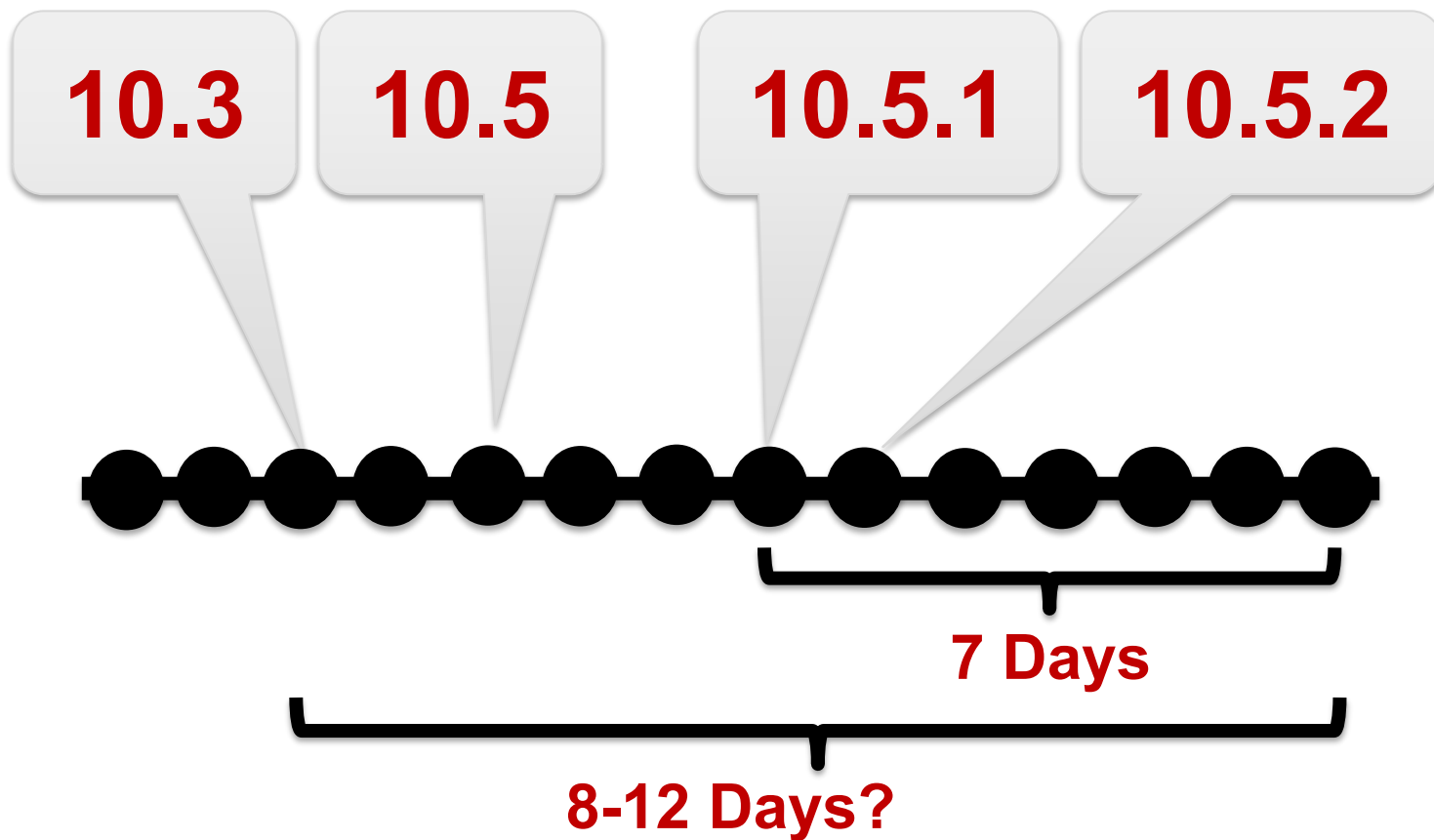


**Feekes 10.5.3** 5

**Wheat head Flowering (anthesis). Notice the anthers sticking out**

# Fungicide Timing:

*Early heading (10.3) to Mid-anthesis (10.5.2)*

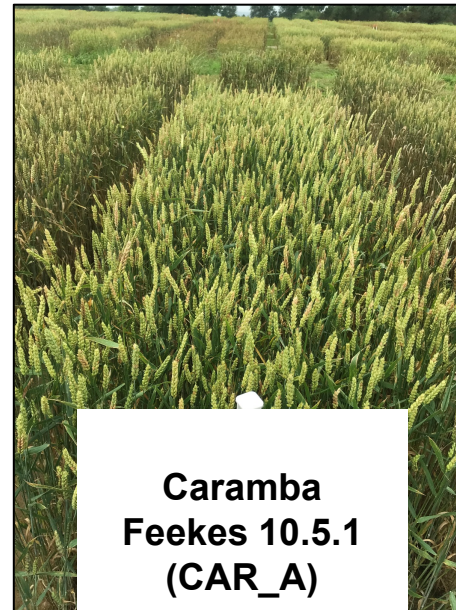
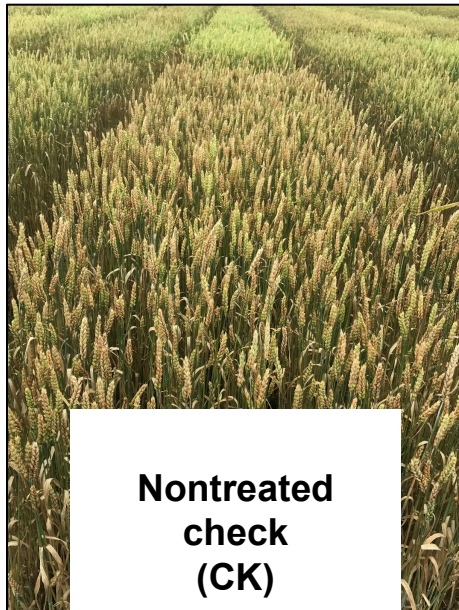


# Fungicide Programs

Treatment program		Rate (fl oz/A)	Timing
Code	Product		
CK	Nontreated	---	---
PRO_A	Prosaro	6.5	Feekes 10.5.1
CAR_A	Caramba	13.5	Feekes 10.5.1
MIR_H	Miravis Ace	13.7	Feekes 10.3-5
MIR_A	Miravis Ace	13.7	Feekes 10.5.1
MIR_PRO	Miravis Ace fb Prosaro	13.7/6.5	Feekes 10.5.1/4-6 DAA
MIR_CAR	Miravis Ace fb Caramba	13.7/13.5	Feekes 10.5.1/4-6 DAA
MIR_FOL	Miravis Ace fb Tebuconazole	13.6/4.0	Feekes 10.5.1/4-6 DAA
MIR_L	Miravis Ace	13.7	4-6 DAA

DAA = days after anthesis (Feekes 10.5.1)

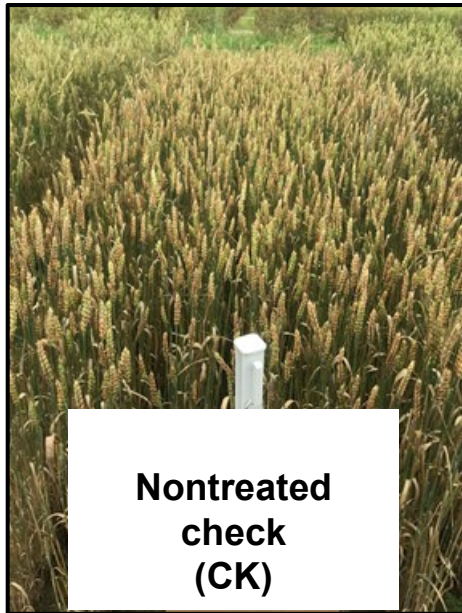
# Early Anthesis Timing: Miravis Ace vs Prosaro and Caramba



**Wooster OH 2019**



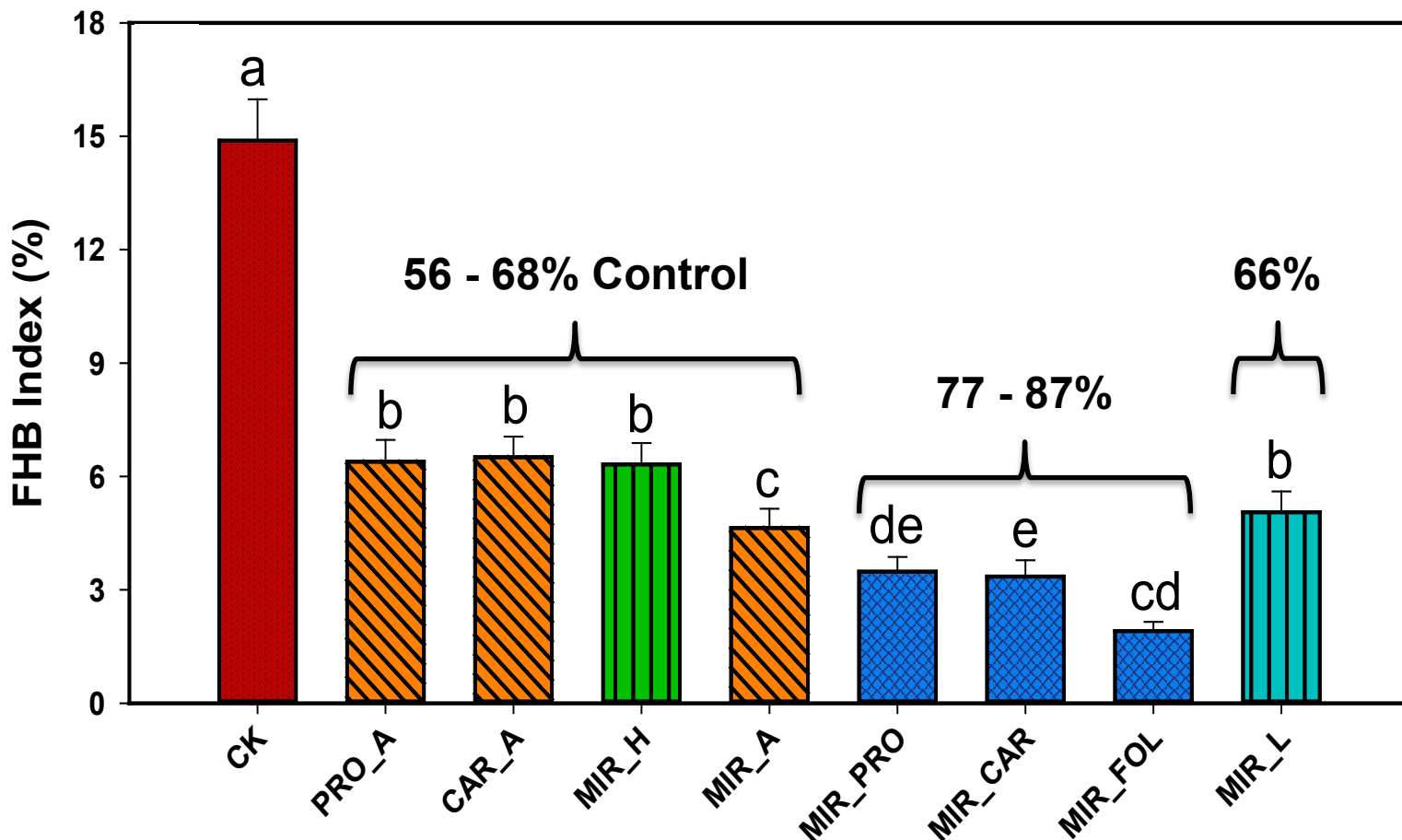
# Miravis Ace Timing: Early Heading to Late Anthesis



Wooster OH 2019

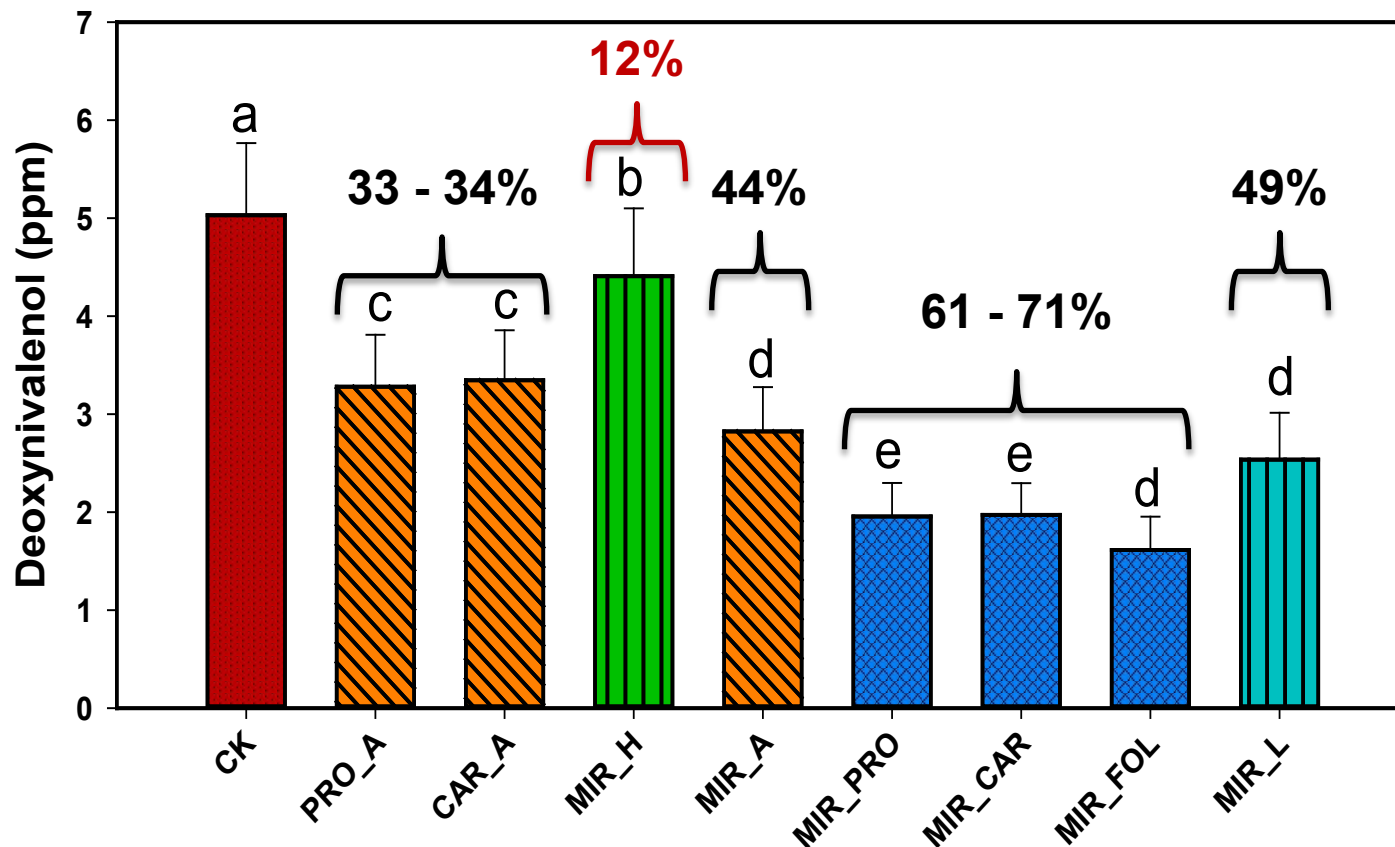
# Prosaro/Caramba/Miravis Ace

## Fusarium Head Blight (2018-2020: 47 environments)



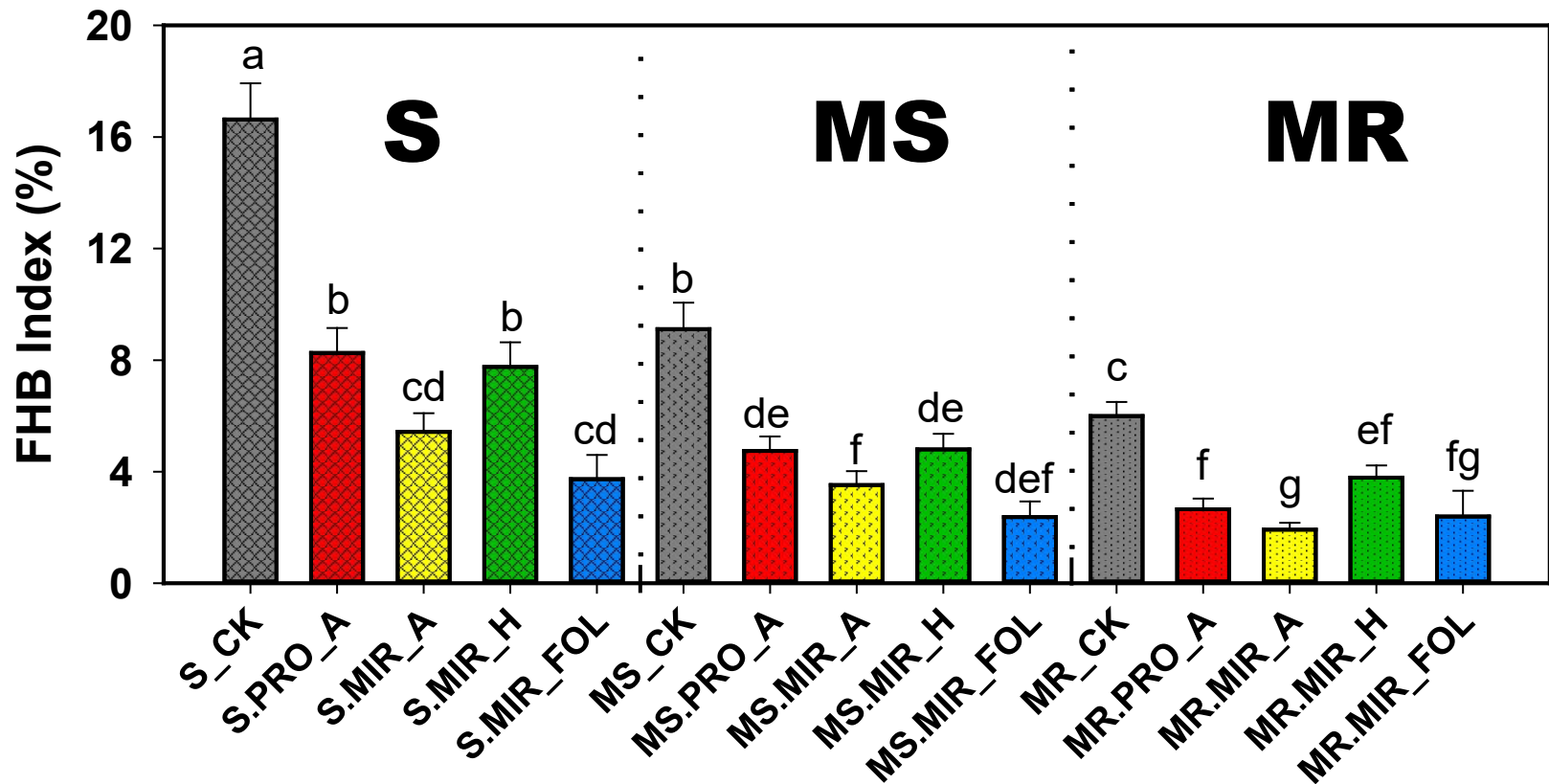
# Prosaro/Caramba/Miravis Ace

## Deoxynivalenol (2018-2020: 47 environments)



# Fungicide x Genetic Resistance

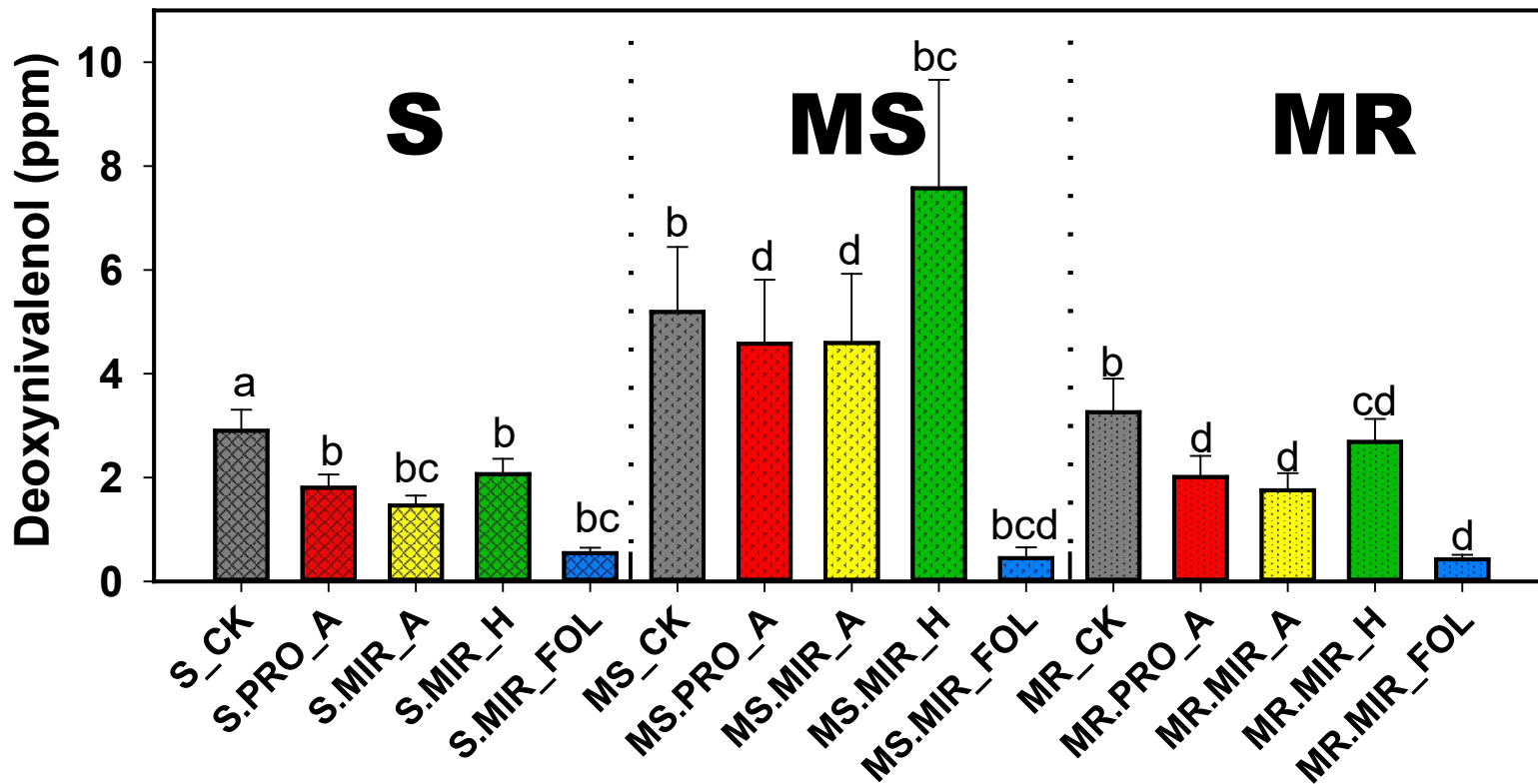
Fusarium Head Blight (2018-2020: 60 environments)





# Timing x Genetic Resistance

## Deoxynivalenol (2018-2020: 60 environments)



# Miravis<sup>®</sup> Ace:

## Management of Leaf Diseases and Impact on Grain Yield

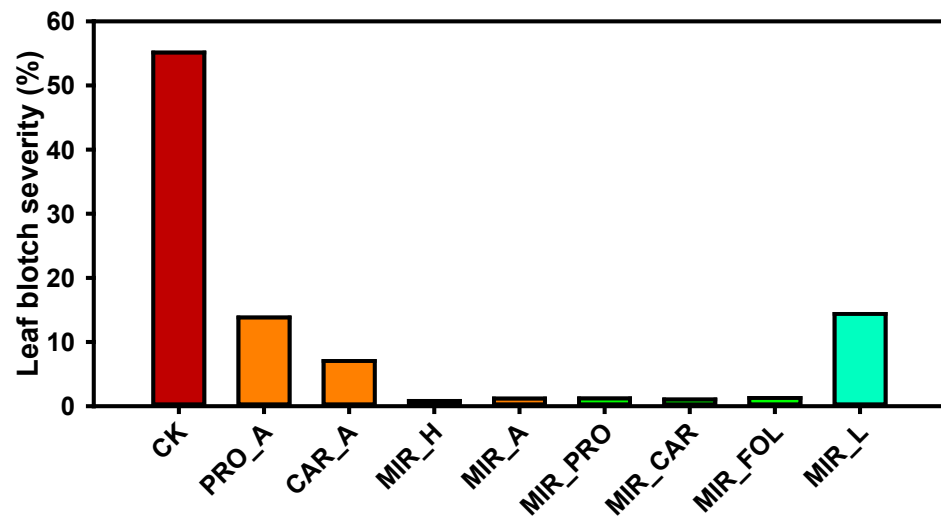


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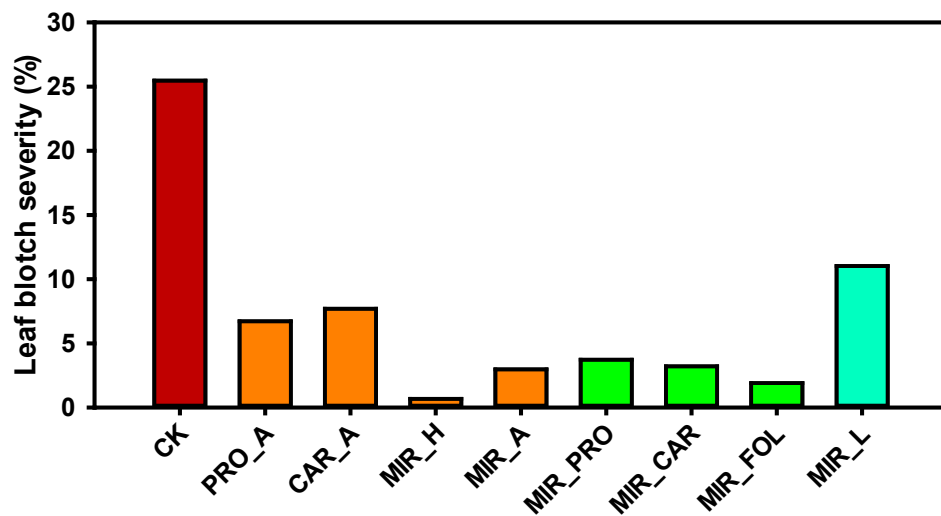
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# Prosaro/Caramba/Miravis Ace

## Septoria and Stagonospora – Flag leaf



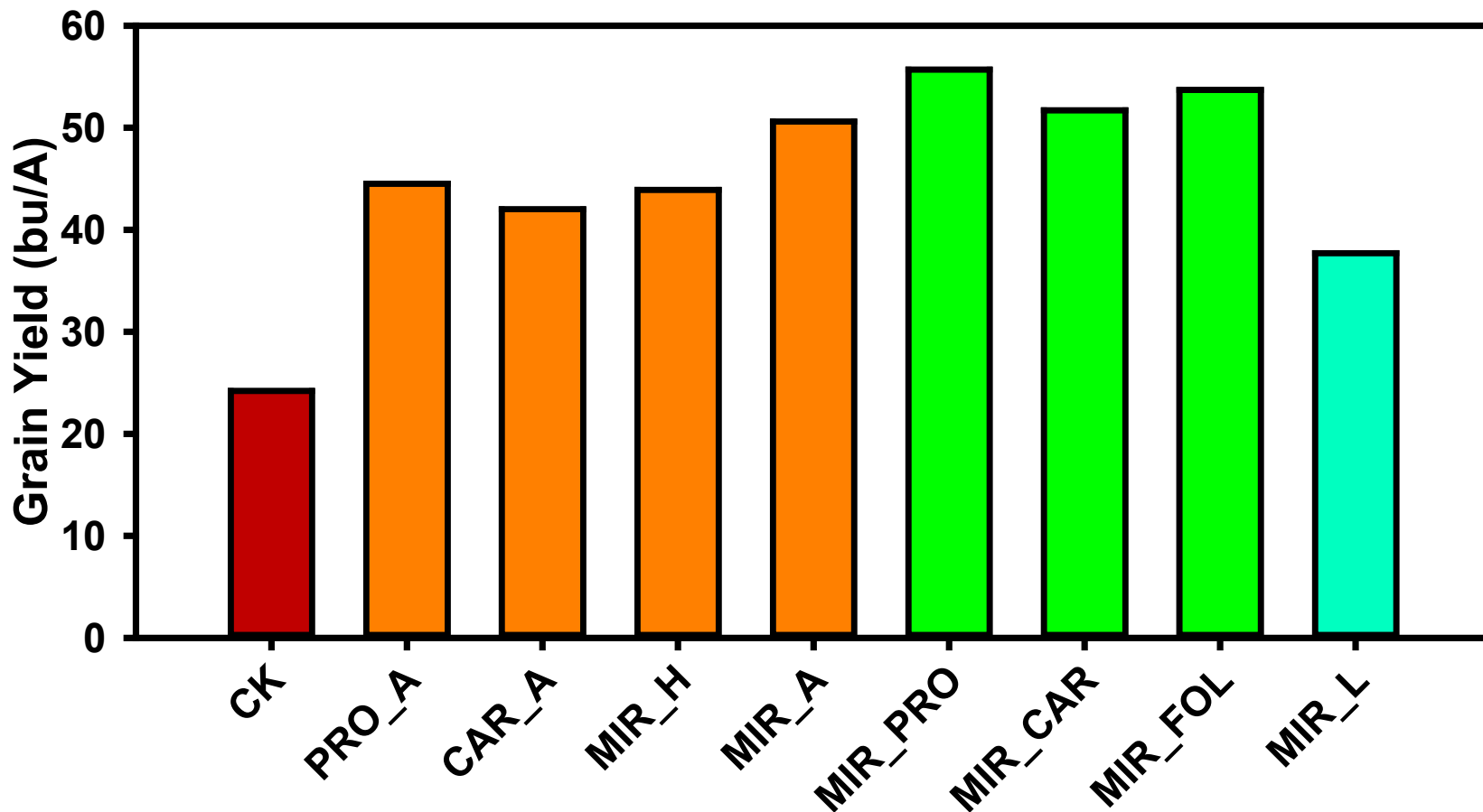
Wooster OH 2019



Wooster OH 2020

# Prosaro/Caramba/Miravis Ace

## Grain Yield

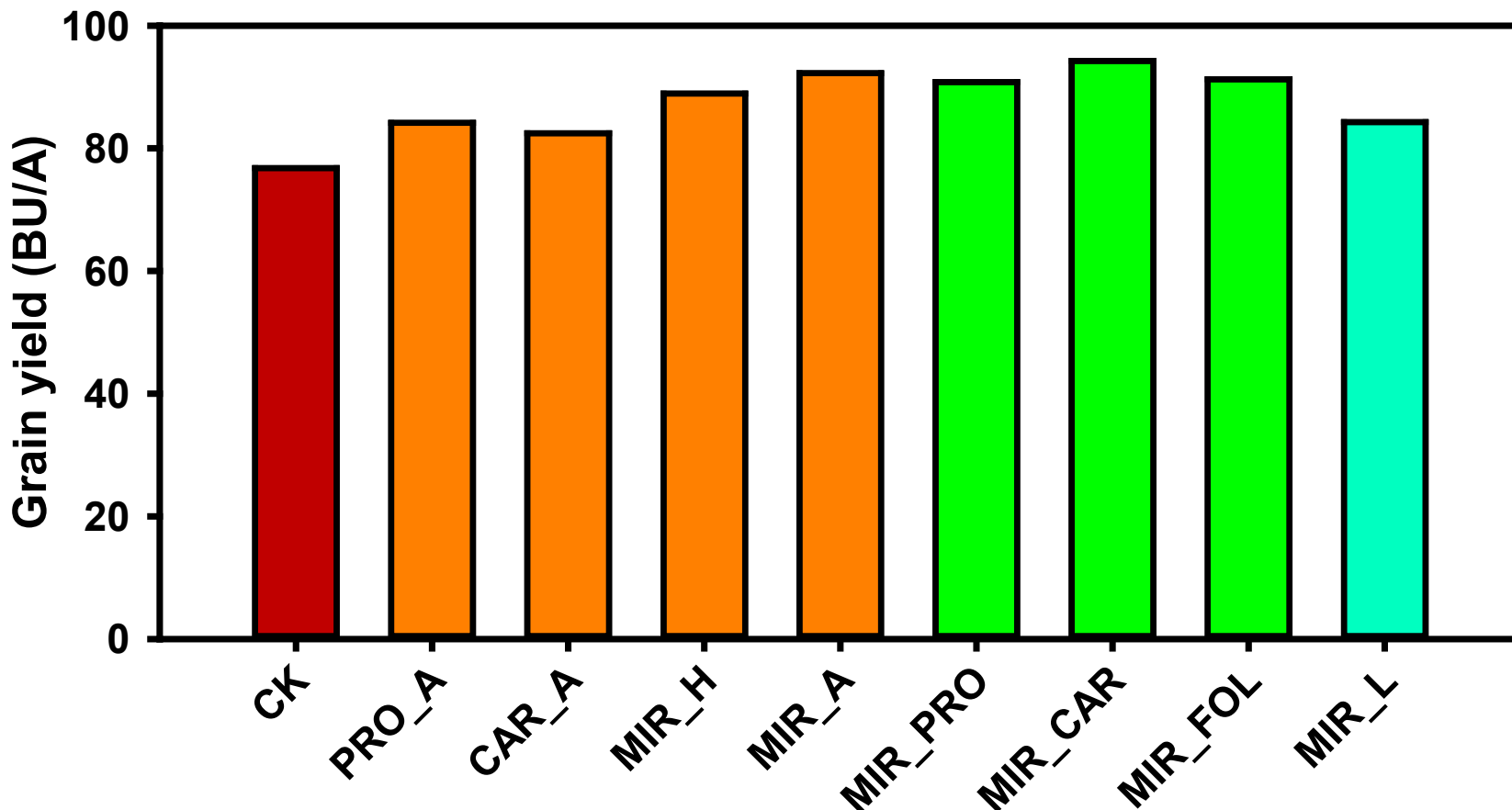


Wooster, OHIO 2019



# Prosaro/Caramba/Miravis Ace

## Grain Yield



Wooster, OHIO 2020

# Summary

- **Both pre- and post-anthesis treatments were effective at reducing FHB.**
- **Miravis Ace was just as effective against FHB and DON as Caramba or Prosaro when applied at anthesis.**
- **Efficacy of Miravis Ace was comparable between anthesis and late applications but was less consistent for early heading application.**
- **Two-treatments programs - an anthesis application of Miravis Ace followed by an application of Caramba, Prosaro, or Folicur 4-6 days later - led to the greatest reduction in DON.**
- **Sequential application of Miravis and a DMI to a moderately resistant cultivar resulted in the highest levels of FHB and DON control.**

# Acknowledgments



Jane Marian Luis (OSU), Sin Joe Ng (OSU), Gary Bergstrom (Cornell), Kaitlyn Bissonnette (U Missouri), Kira Bowen (Auburn), Carl Bradley (U Kentucky), Emmanuel Byamukama (SDSU), Martin Chilvers (MSU), Alyssa Collins (PSU), Christina Cowger (NCSU/USDA-ARS), Heather Darby (U. Vermont), Erick DeWolf (KSU), Ruth Dill Macky (U Minnesota), Paul Esker (PSU), Andrew Friskop (NDSU), Nathan Kleczewski (U Illinois), Alyssa Koehler (U Delaware), Laurence Madden (OSU), Juliet Marshall (U Idaho), Hillary Mehl (Virginia Tech), Wanderson Moraes (OSU), Martin Negelkirk (MSU), Nidhi Rawat (U Maryland), Damon Smith (UW-Madison), Darcy Telenko (Purdue), Stephen Wegulo (U Nebraska-Lincoln), and Heather Young-Kelly (U Tennessee).

# Acknowledgments

