

Controlling Arthropod Pests in MidSouth cotton: Where do we go from here?

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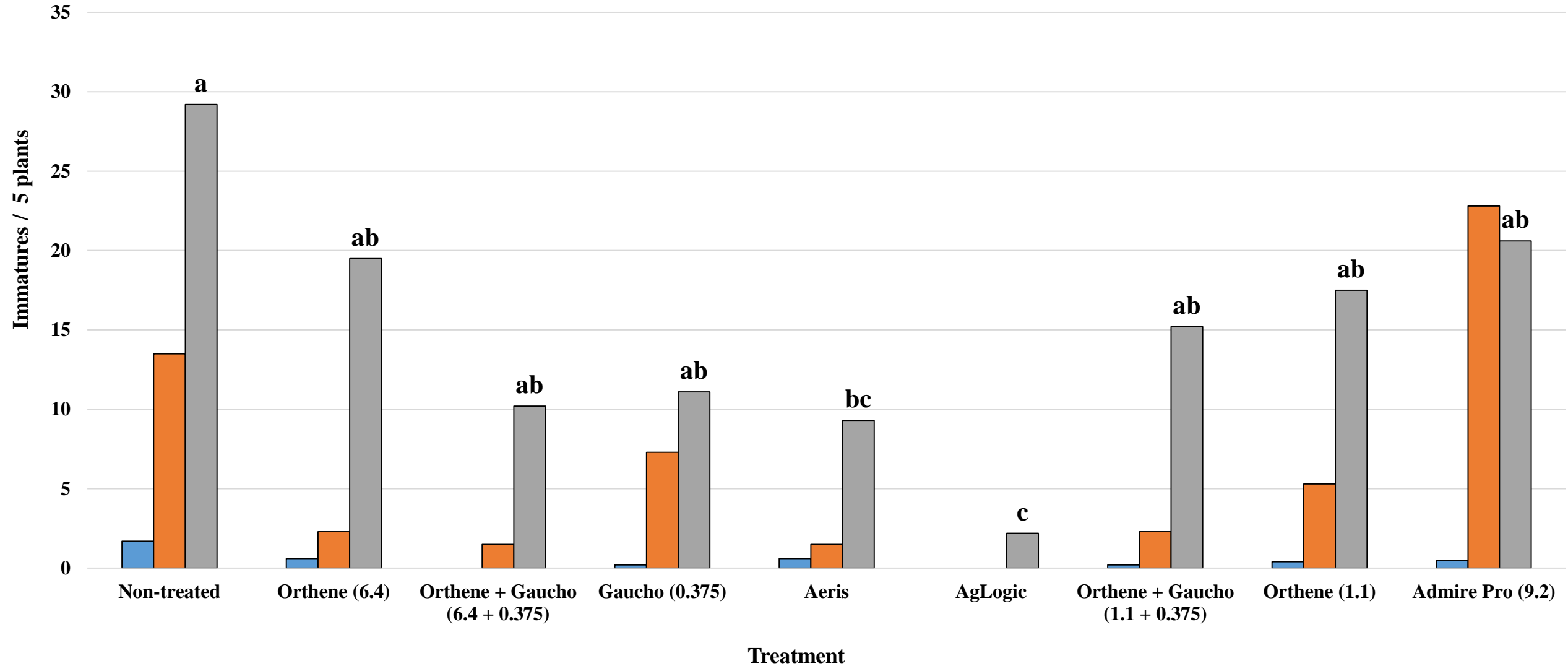


Tobacco Thrips % Mortality, 2022

Population	Spinetoram	Acephate	Dicrctophos
	Radiant 0.75 Oz/A	Orthene 97 0.25 Lb/A	Bidrin 2 Oz/A
NC Susceptible	100	95	86
NC Peanut	-	62	-
MS Stoneville	100	44	69
MS Starkville	100	80	50
AR Kaiser	100	25	-
AR Marianna	100	22	28
AR Tillar	100	55	61
AR Jonesboro	-	8	-
LA Tensas	100	44	85
TN Jackson	100	21	42
TN Milan	100	23	64
TN Rutherford	100	27	35
2021 Avg Mortality	100	73	67
2022 Avg Mortality	100	42	57

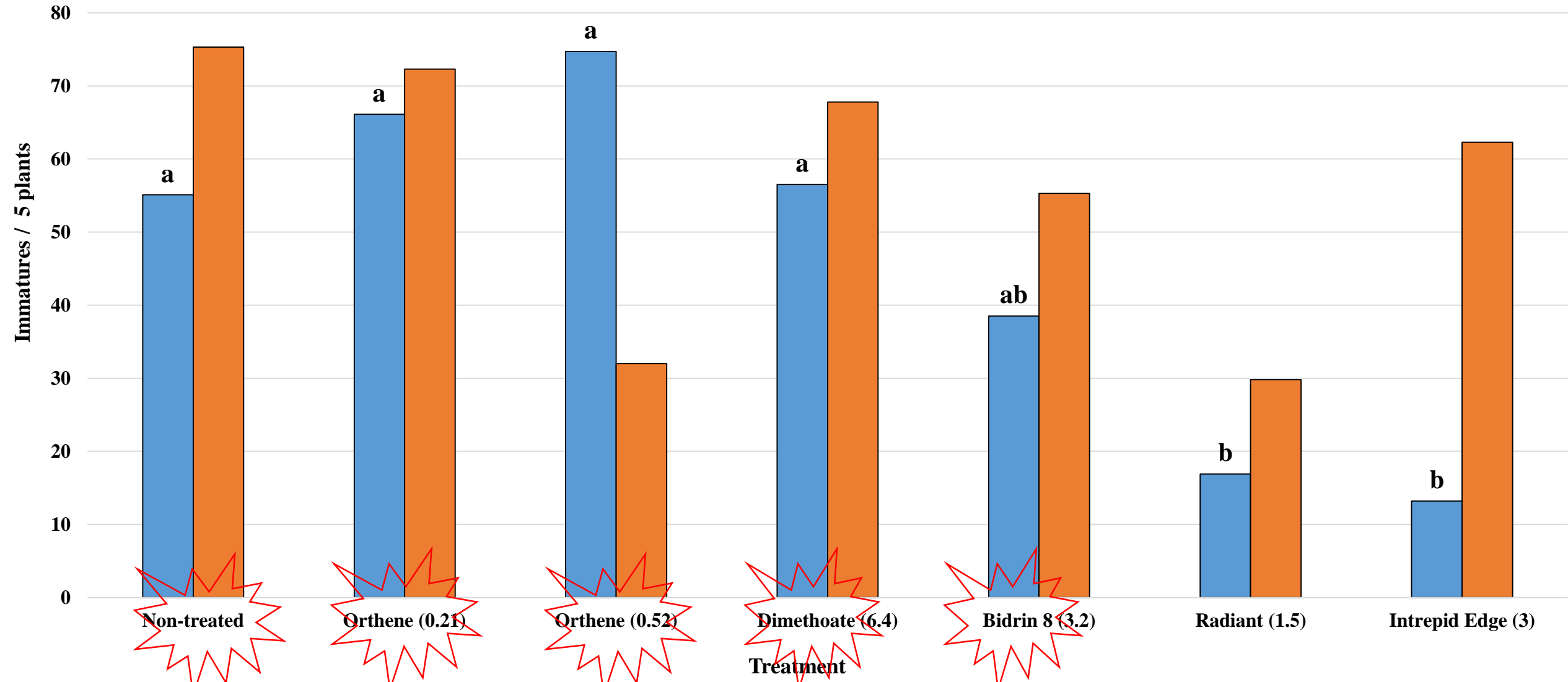
In-furrow Insecticide Performance – Thrips in Cotton 2022 - NRS

■ 2 TL ■ 3 TL ■ 5TL



Foliar Insecticide Performance – Thrips in Cotton 2022 - NRS

■ 3 DAA ■ 6 DAA

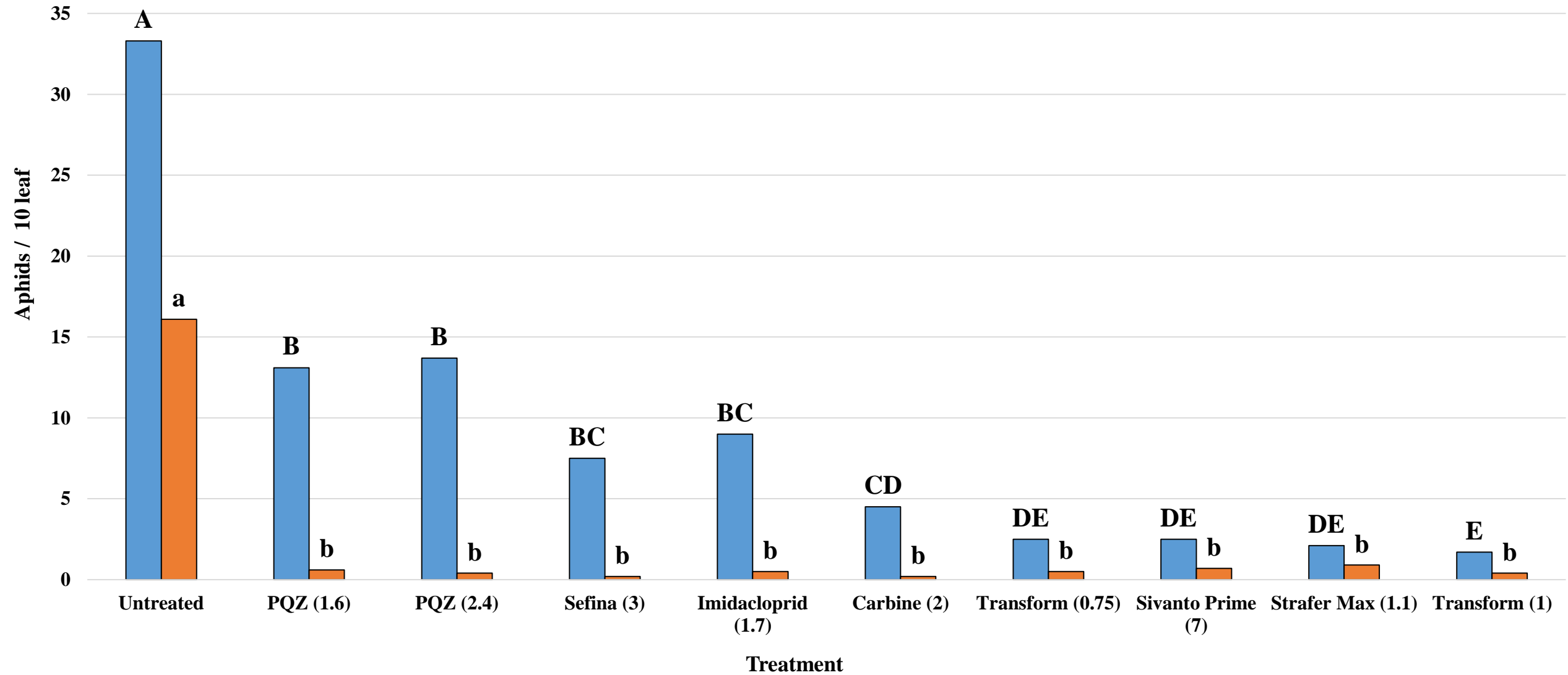




Cotton Aphids

2022 Foliar Insecticide Performance – Cotton Aphids Winnsboro, Louisiana

■ 2 DAA ■ 5 DAA

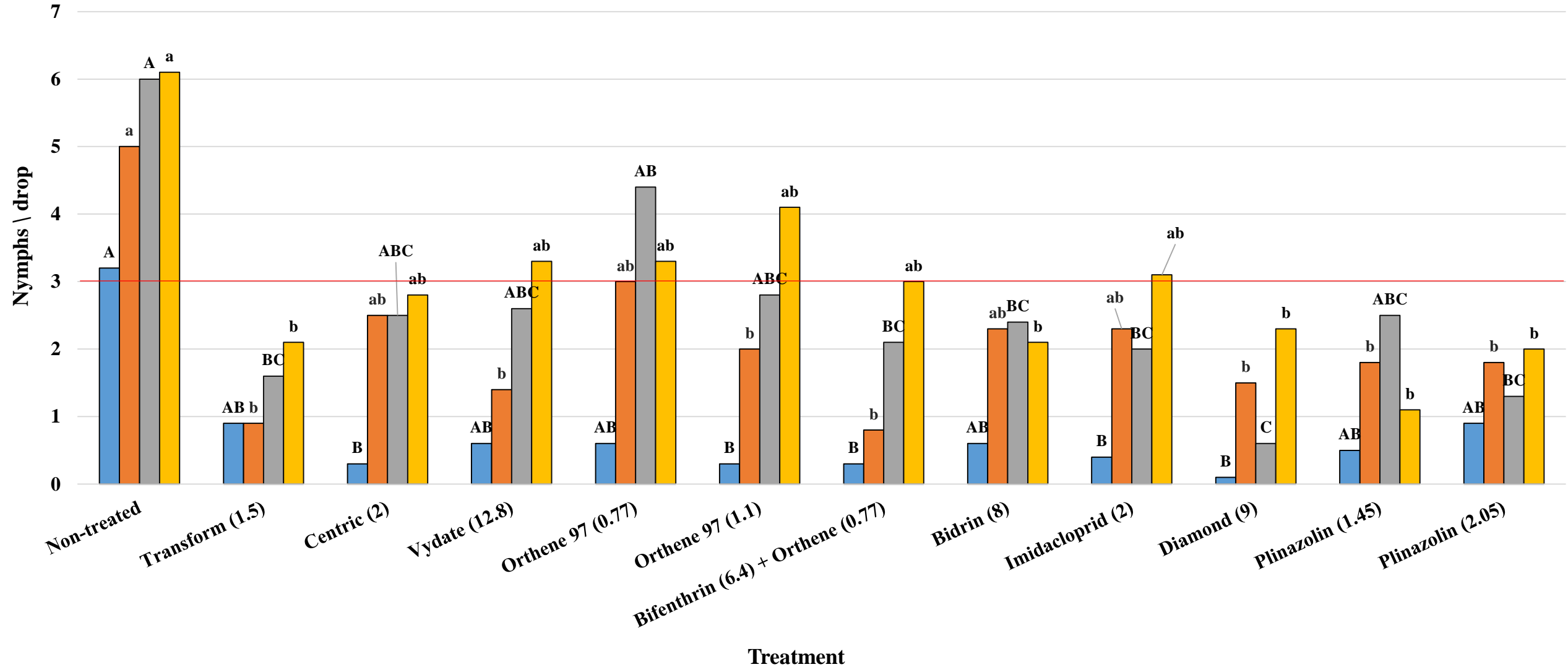




Tarnished Plant
Bugs

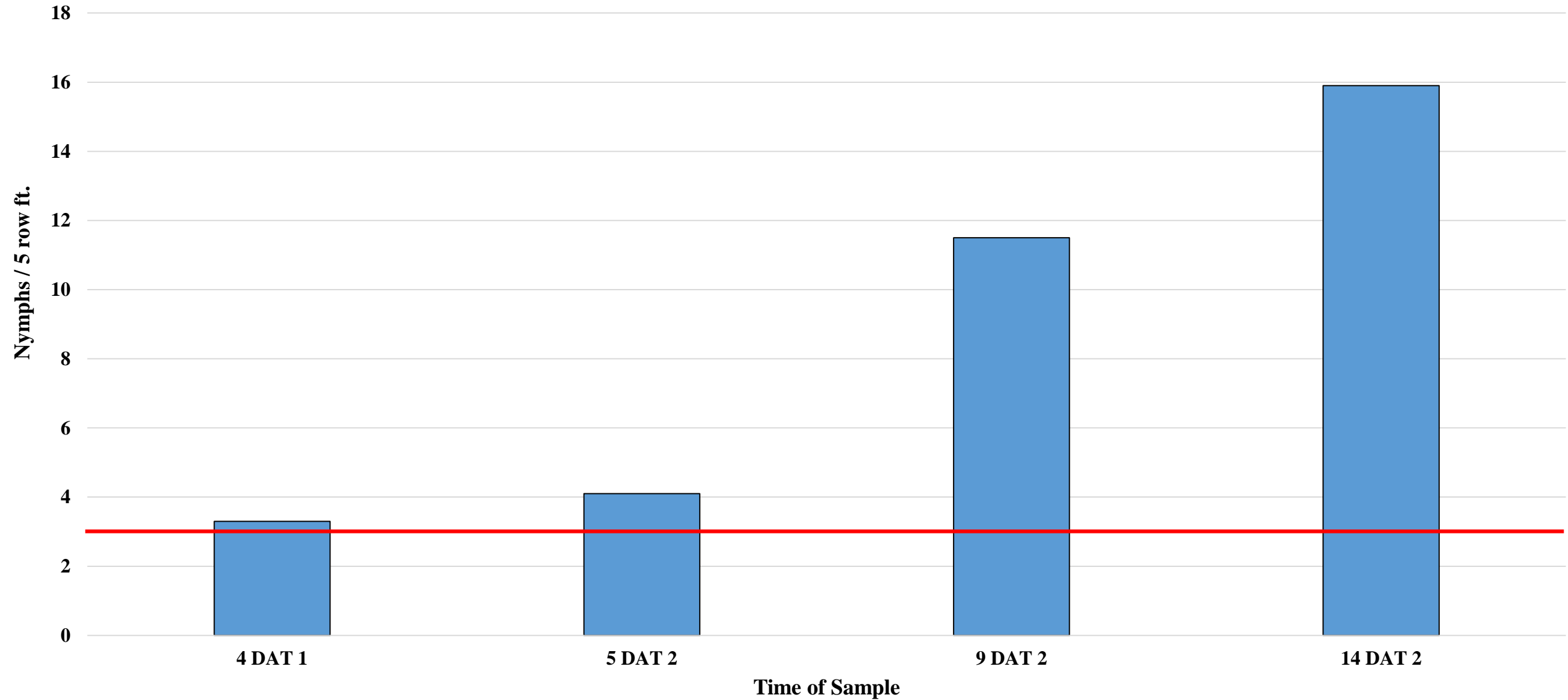
Foliar Insecticide Performance – Tarnished Plant Bugs 2022 - MRRS

2 DAA 7 DAA 14 DAA 21 DAA



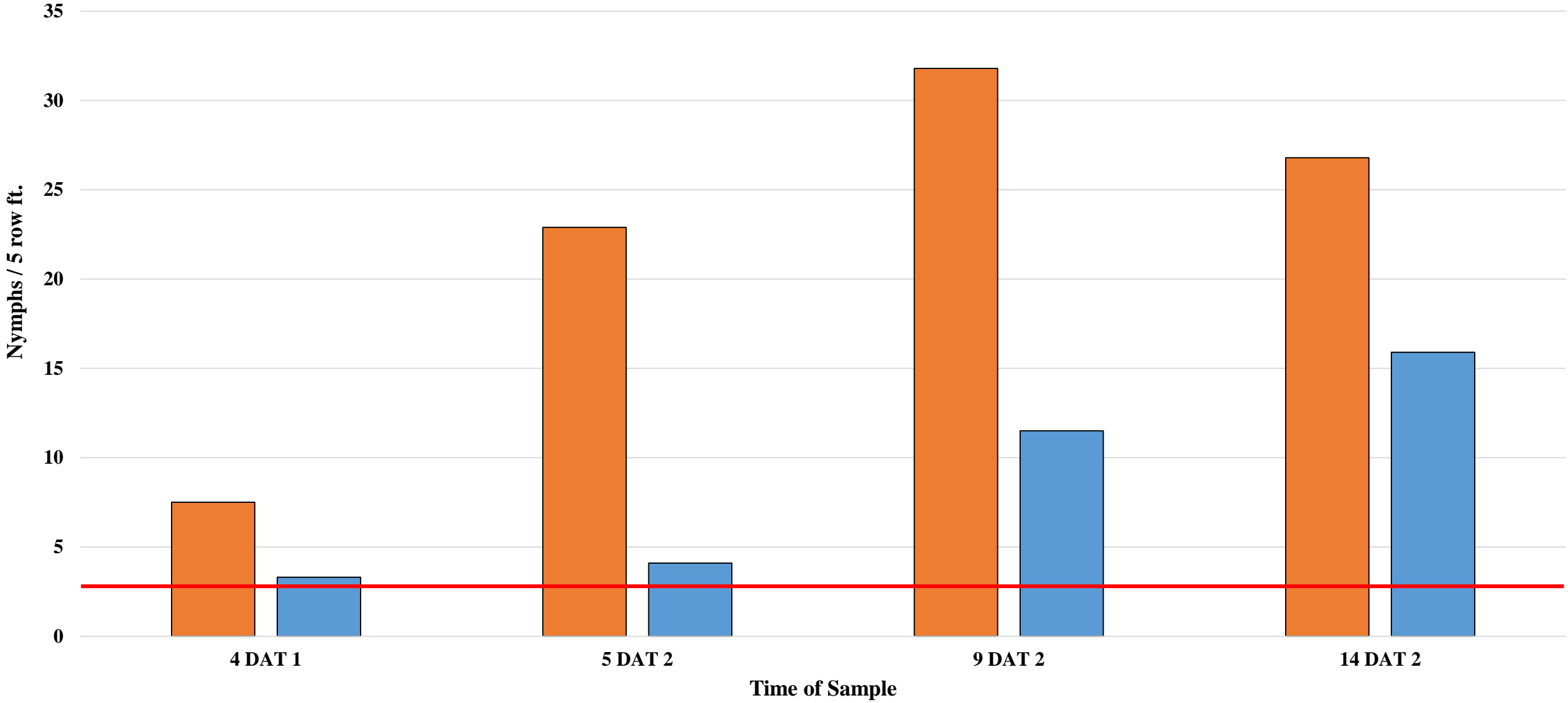
Transform WG – What you see...

■ Transform



What's Actually Happening...

Check Transform

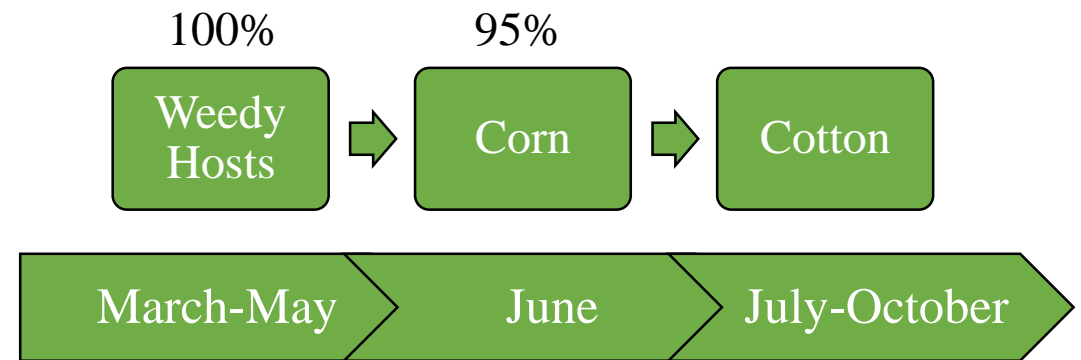




Bollworms

How did we get here?

1. Sharing Cry proteins among hosts
2. Cry proteins not “high dose” for bollworms
3. Low refuge compliance

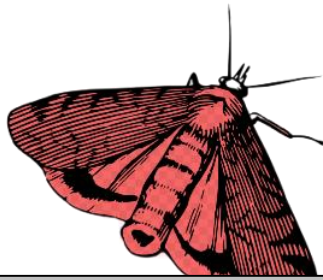


Shared Bt Proteins Between Crops

<u>Corn</u>	<u>Cotton</u>
Vt Double Pro (Cry2Ab + Cry1A.105)	Bollgard 2 (Cry1Ac + Cry2Ab)
Trecepta (Cry2Ab + Cry1A.105 + Vip3A)	Bollgard 3 (Cry1Ac + Cry2Ab + Vip3A)
Leptra (Cry1Ab + Cry1F + Vip3A)	Widestrike 3 (Cry1Ab + Cry1F + Vip3A)

Refuge Utilized

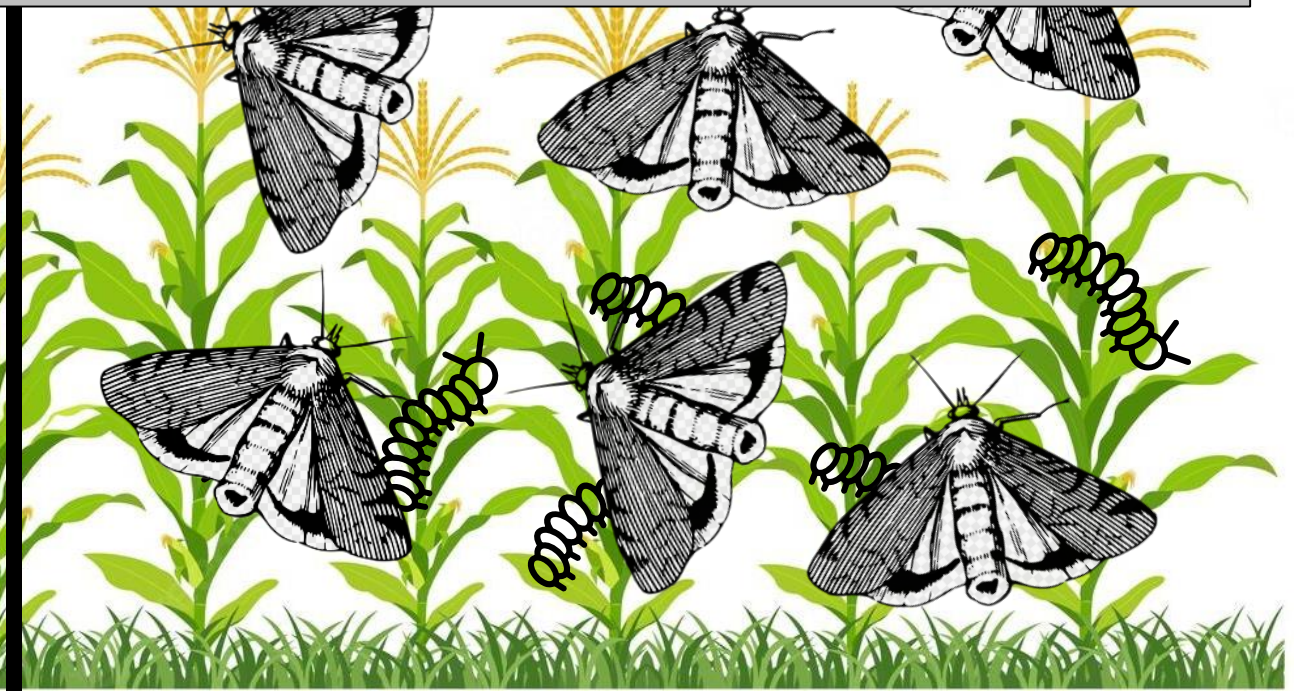
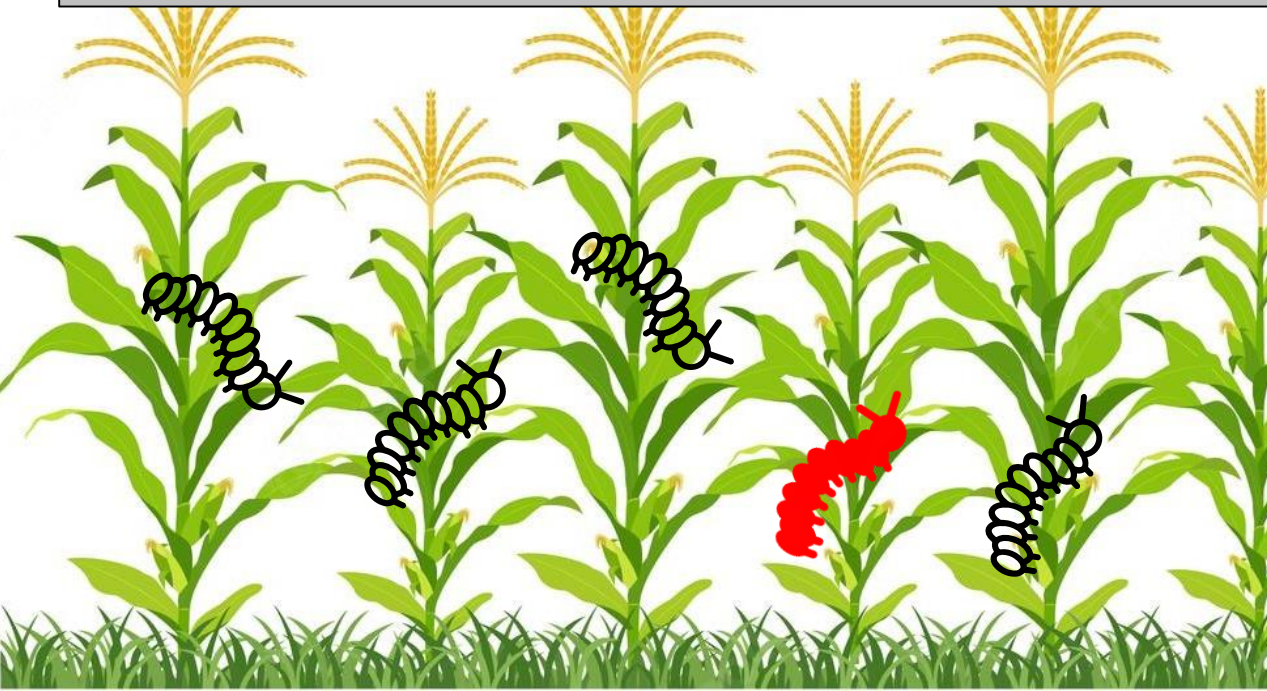
Bt Corn Hybrid



Refuge Corn



The next generation will be susceptible to the Bt technology

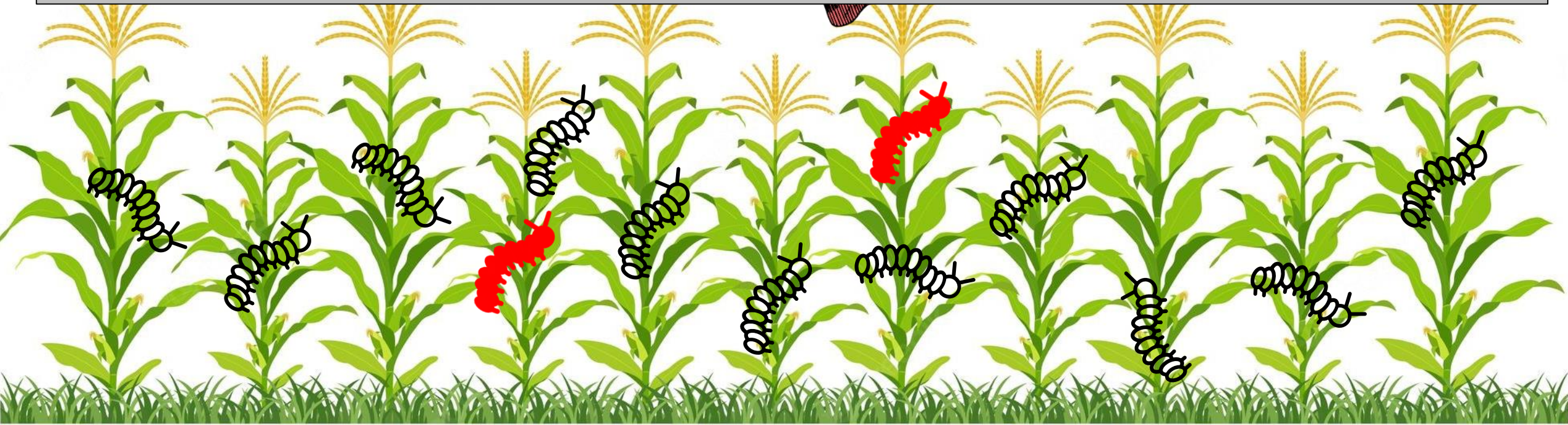


Refuge Not Utilized

100% Bt Corn Hybrid Landscape



The next generation will be resistant to the Bt technology



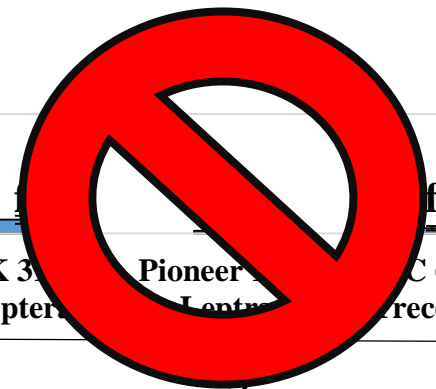
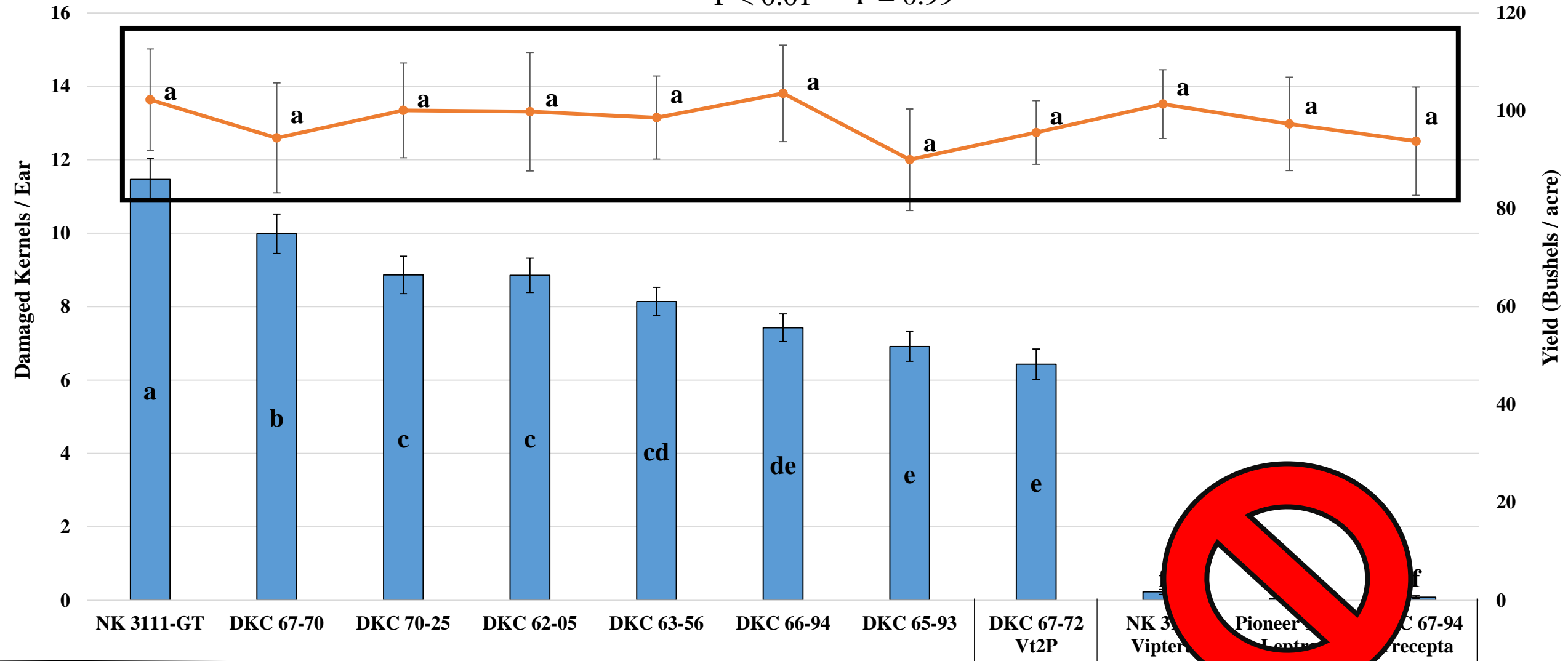
Refuge Compliance Implications

Compliance is generally low among producers for several reasons:

1. Yield potential between non-Bt and Bt expressing hybrids
2. Commercial availability of non-Bt hybrids
3. Understanding of refuge importance – Especially for cotton
4. No incentive or repercussion
5. Slows down planting

Bt Technology – Effects on Kernel Damage and Yield

Kernel Damage P < 0.01 Yield P = 0.99



Proteins	0	2	3
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Bollworm Scouting in Cotton

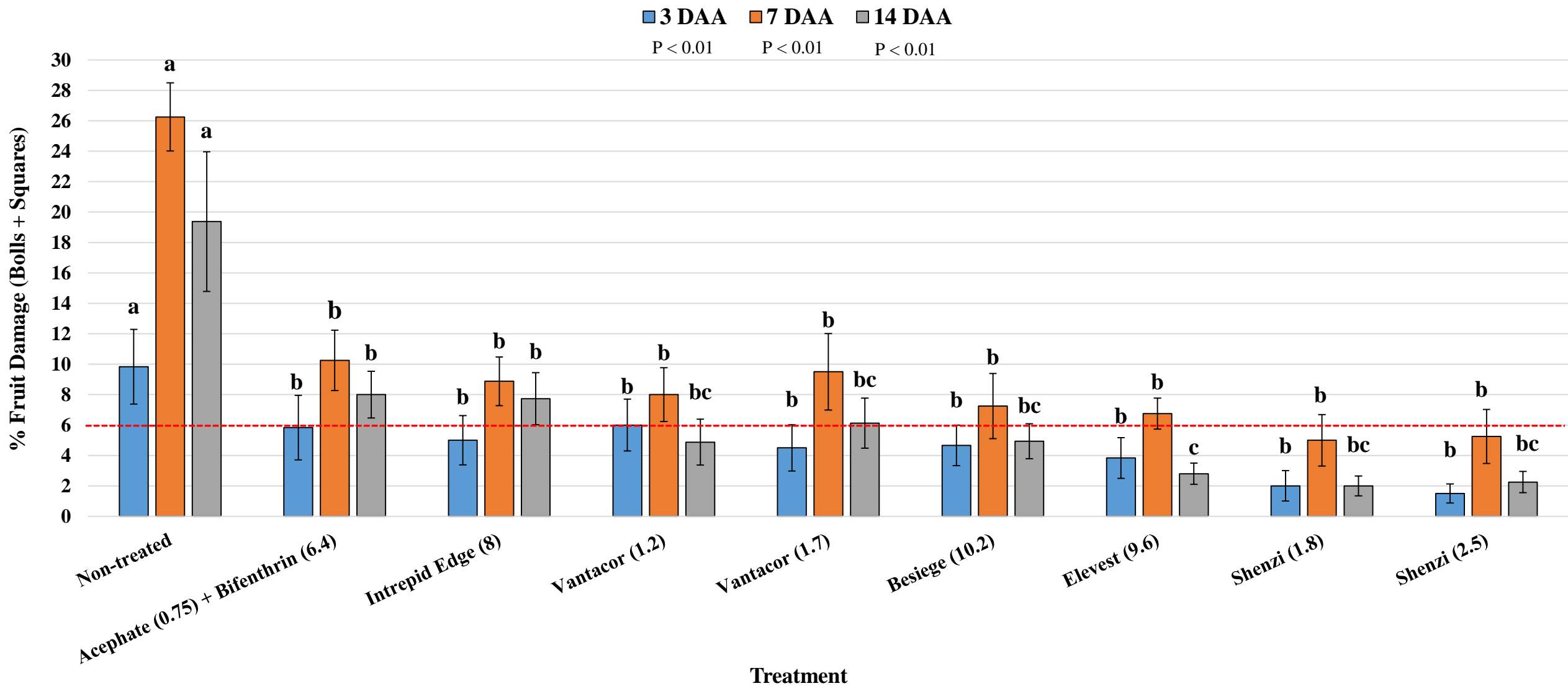


Dual Gene
(1646)
20% Egg Lay



3-gene
4% Larvae OR
6% Damage

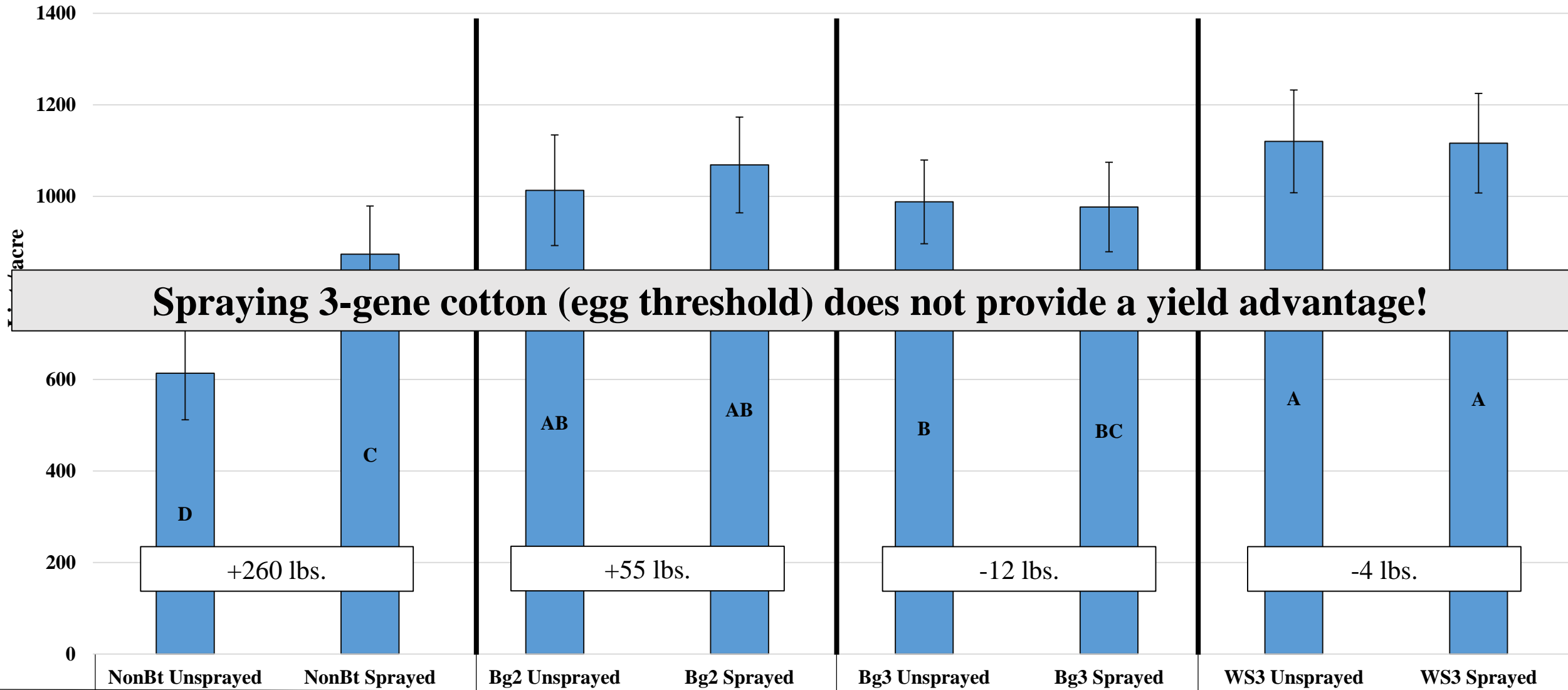
Foliar Insecticide Performance – Bollworms in Cotton 2022 - LA, AR, MS, TN



Diamide Applications and Cotton Technology – Effects on Yield

5 locations – LA, MS, AR, TN

P < 0.01



Spraying 3-gene cotton (egg threshold) does not provide a yield advantage!

Proteins	0	2	3	3
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Vip Technology – Current Situation

Currently, not believed to be considered economic damage!

WS3



WS3



WS3



BG3

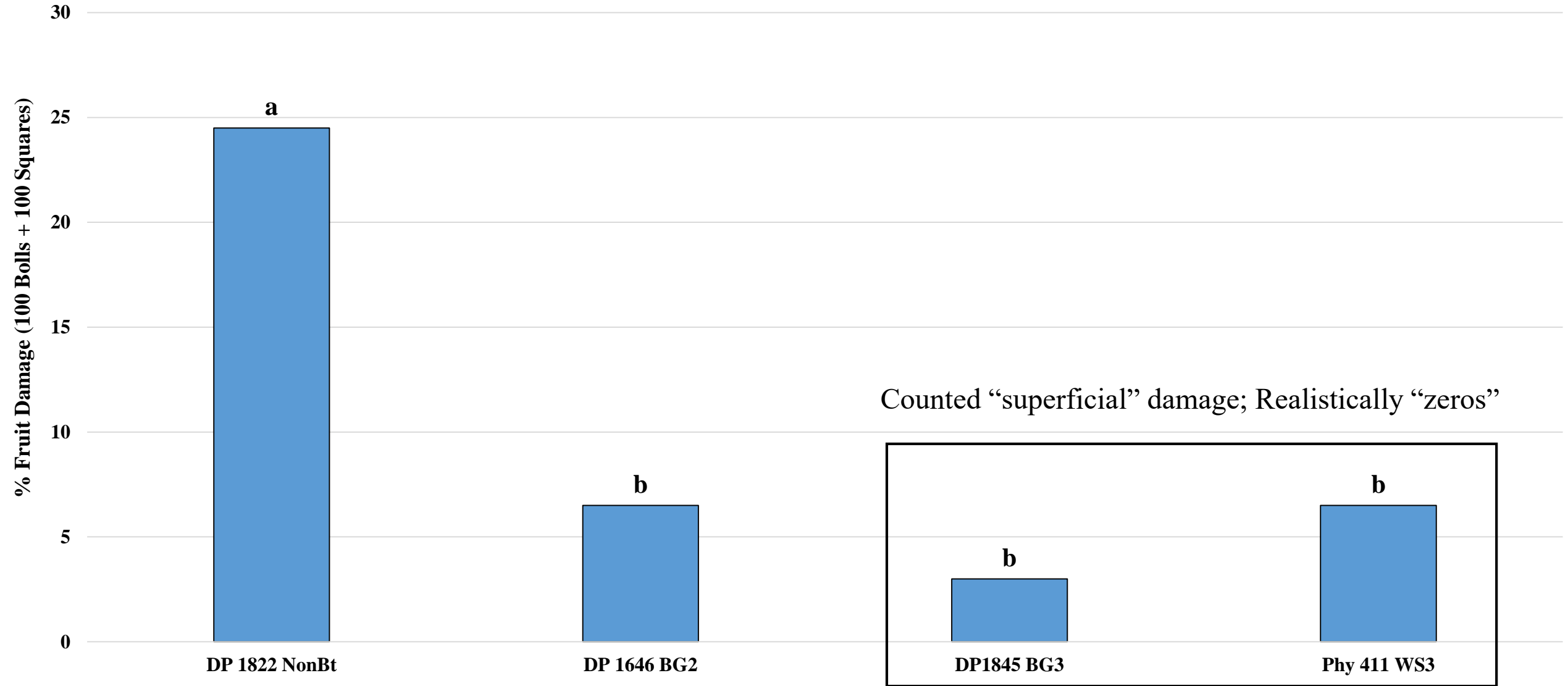




Vip Technology – Current Situation



Bt Protein Performance – July 20, 2022
7 Days Post Egg Lay
Winnsboro, Louisiana



Recommendations...

- Aeris and AgLogic providing the best protection from thrips
- Acephate resistance spreading; detected in Tensas parish; Use caution when applying acephate
- Intrepid edge provides better, more consistent control (~\$9/acre); will not flare spider mites
- Transform, Diamond, Plinazolin still providing good control of TPB

Recommendations...

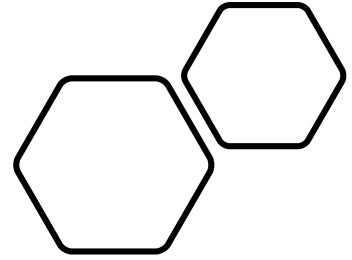
- Utilize refuge when planting Bt field corn; the yield potential is available
- Avoid planting 3-gene expressing corn hybrids; increased cost, selection pressure.
- Diamides, Intrepid Edge continue to perform well as foliar rescue treatments -
Respect the chemistries
- Follow bollworm thresholds in cotton; Do not spray 3-gene cotton on egg lay!
- Avoid getting worked up over seeing neonates in 3-gene cotton; 1/8th inch or longer
- Notify extension personnel if unexpected damage events occur in 3-gene cotton

Acknowledgments



Cotton
Incorporated





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