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

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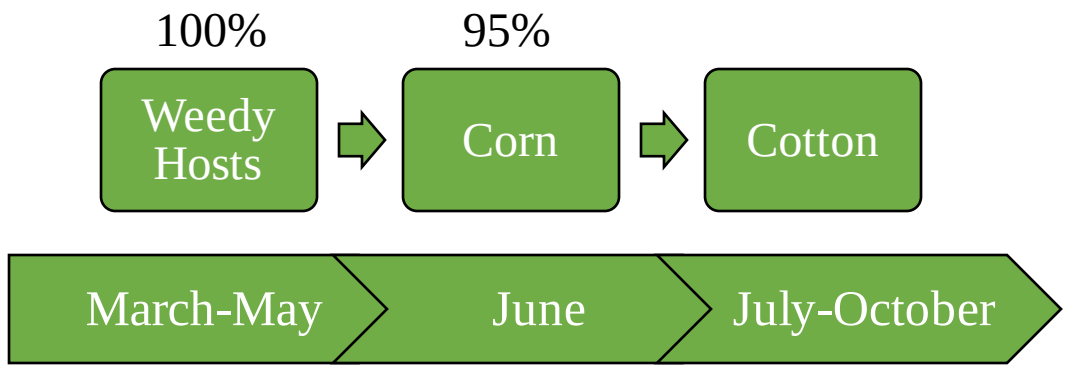
How did we get here?

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

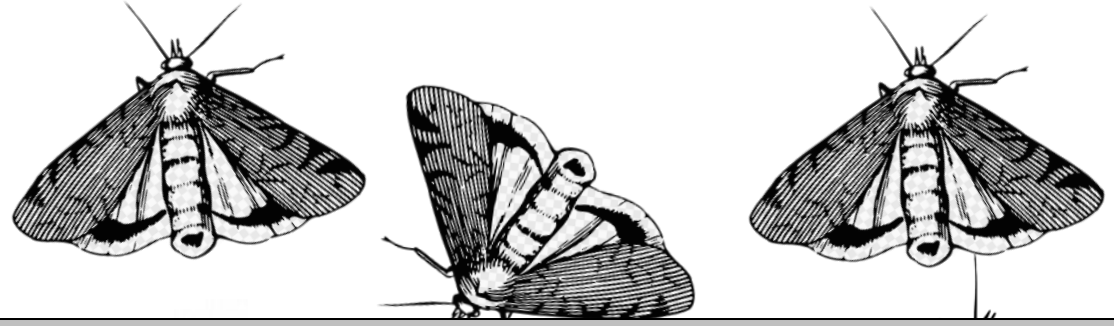


Shared Bt Proteins Between Crops	
Corn	Cotton
Vt Double Pro (Cry2Ab + Cry1A.105)	Bollgard 2 (Cry1Ac + Cry2Ab)
Trecepta (Cry2Ab + Cry1A.105 + Vip3A)	Bollgard 3 (Cry1Ac + Cry2Ab + Vip3A)
Leptra (Cry1Ab + Cry1F + Vip3A)	Widestrike 3 (Cry1Ab + Cry1F + Vip3A)

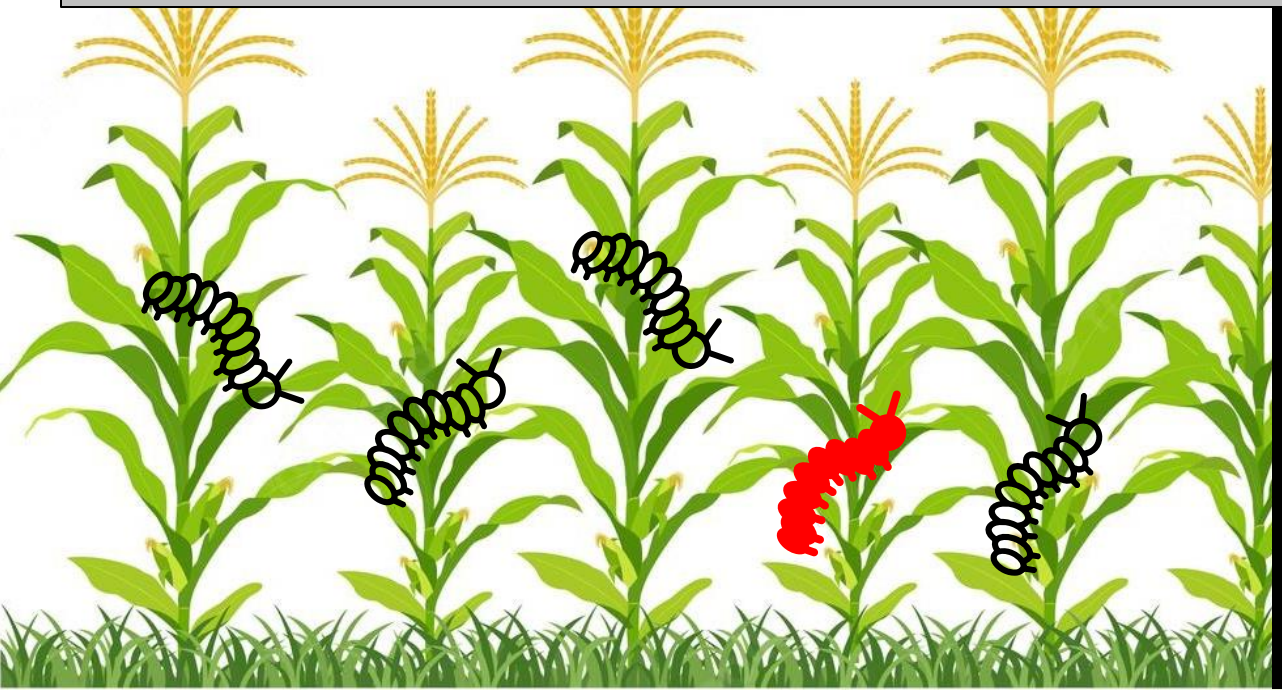
Refuge Utilized

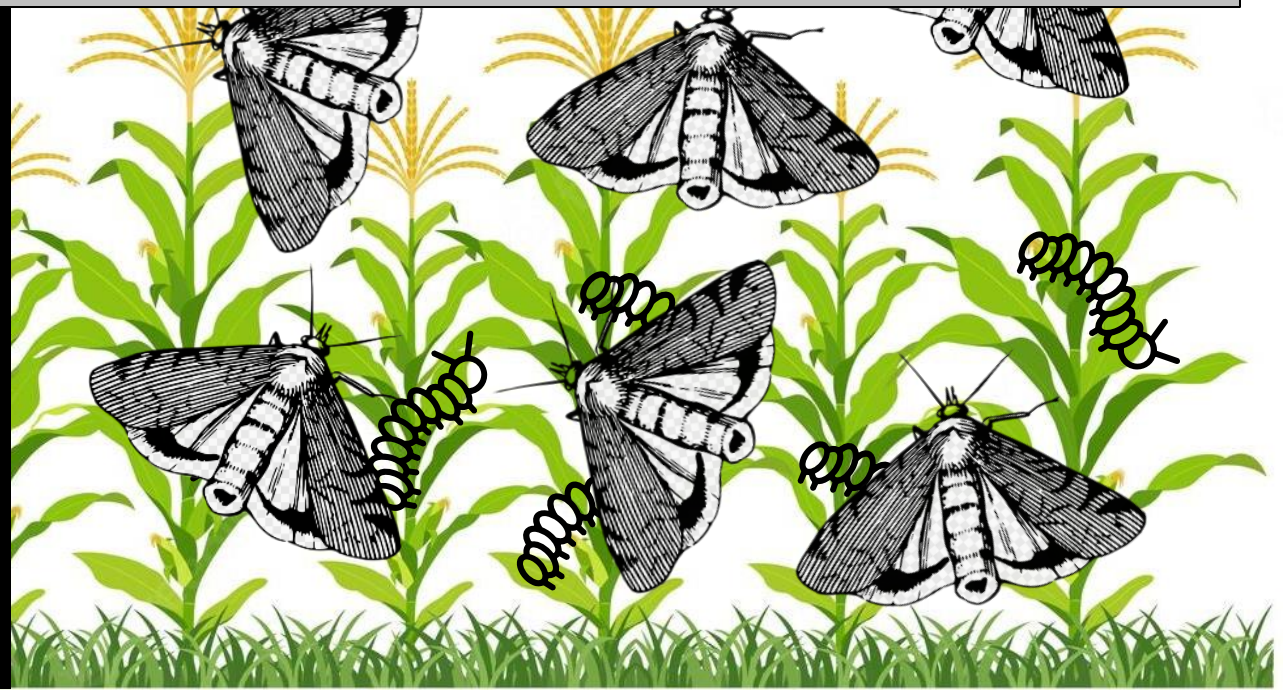
Bt Corn Hybrid

Refuge Corn



The next generation will be **susceptible** to the Bt technology

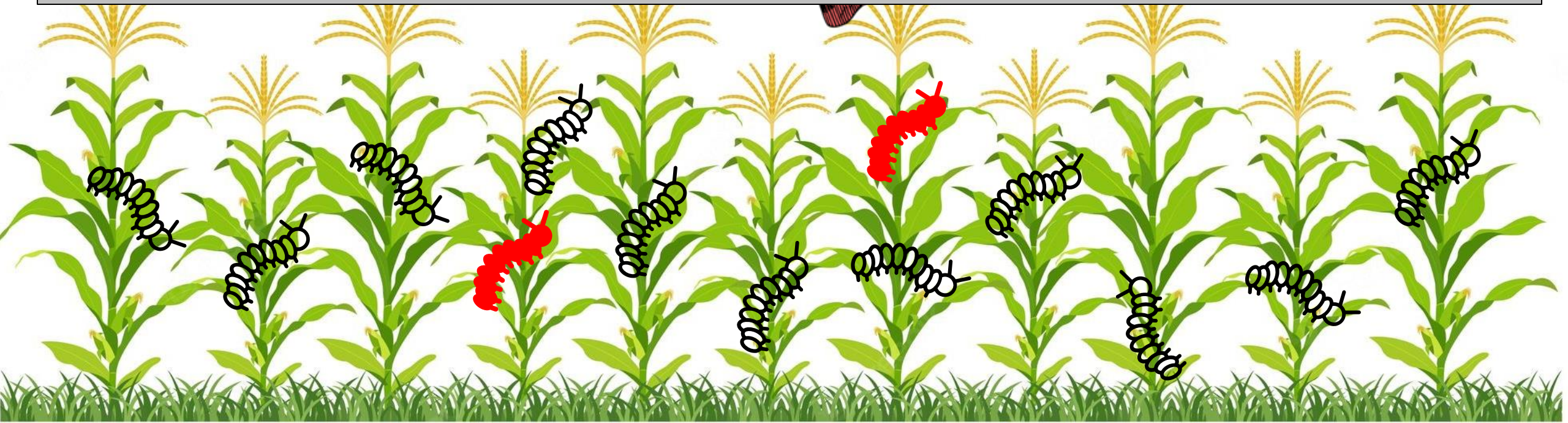




Refuge Not Utilized

100% Bt Corn Hybrid Landscape

The next generation will be **resistant** to the Bt technology

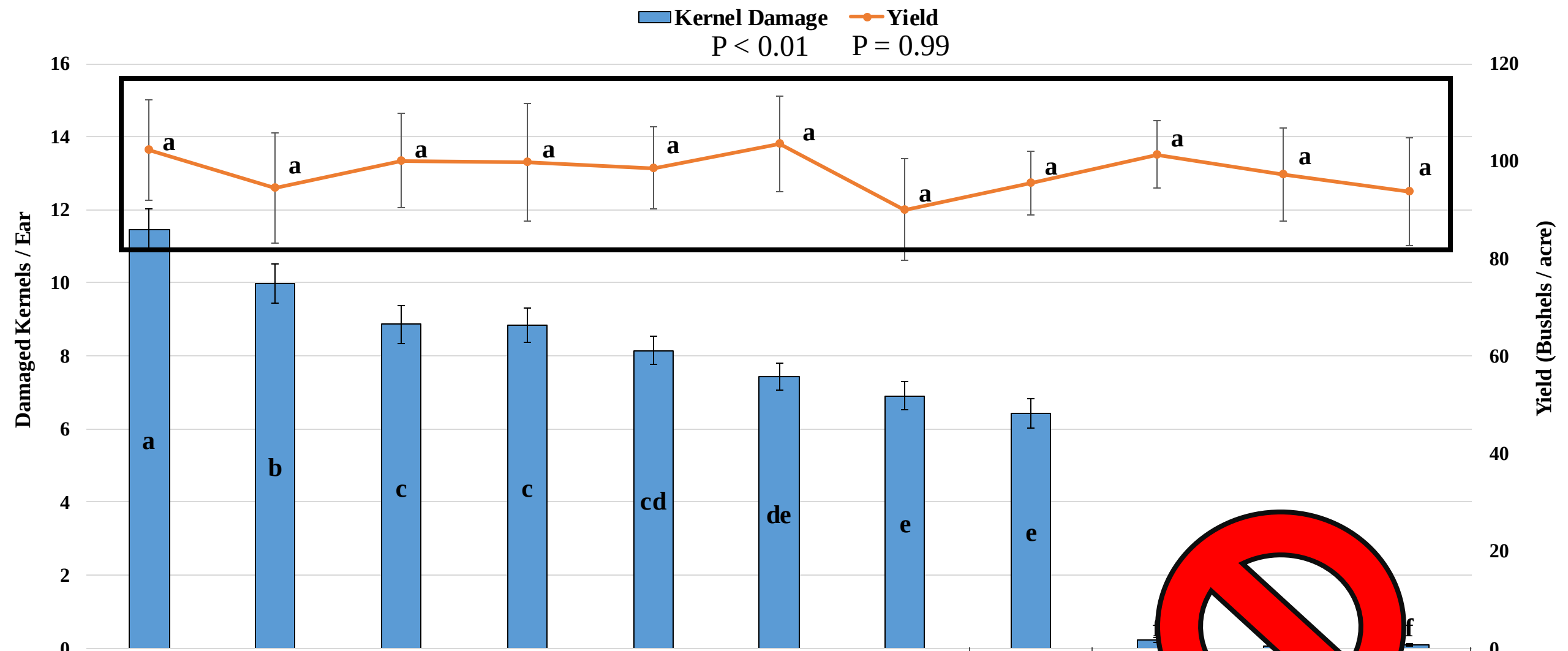


Refuge Compliance Implications

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



Proteins	0	2	

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Bollworm Scouting in Cotton

Dual Gene
(1646)
20% Egg Lay

3-gene
4% Larvae OR
6% Damage

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Neonates in 3-gene Cotton

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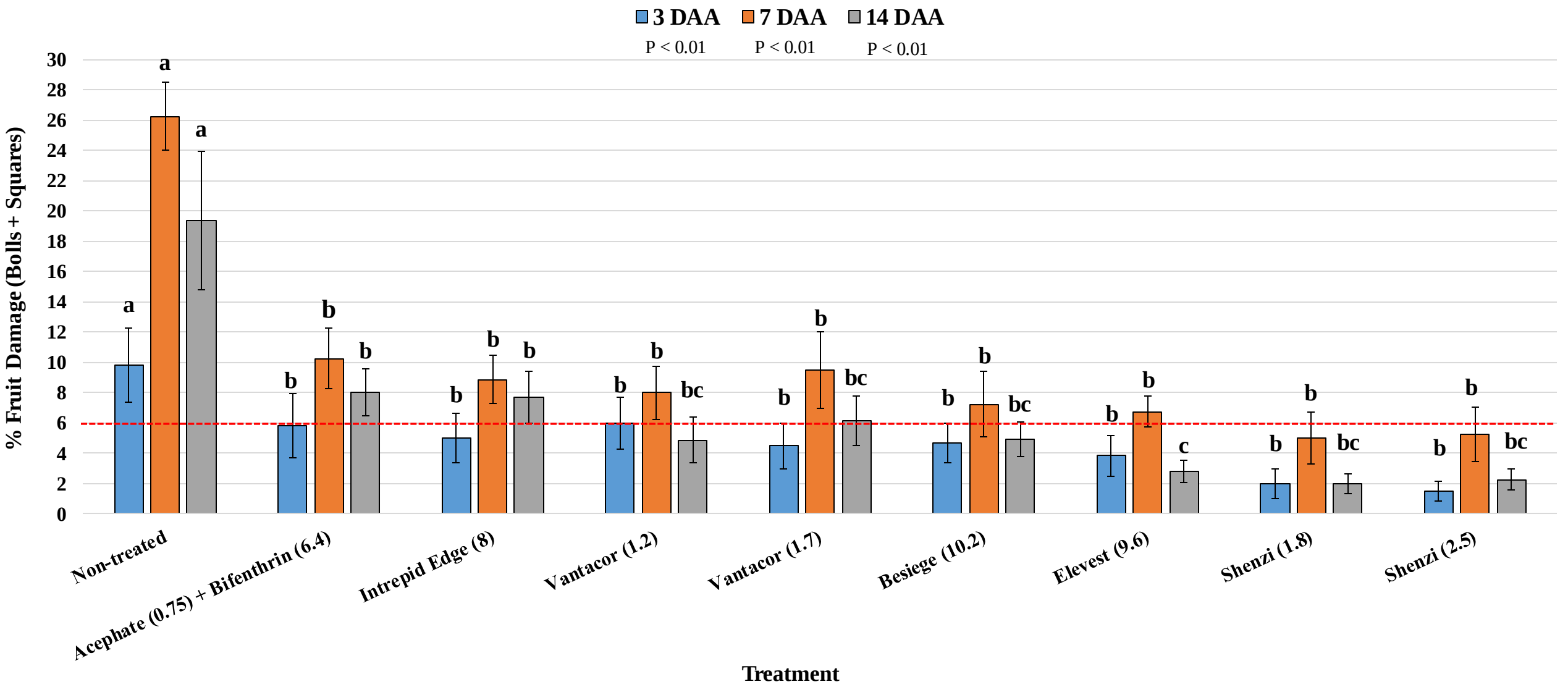
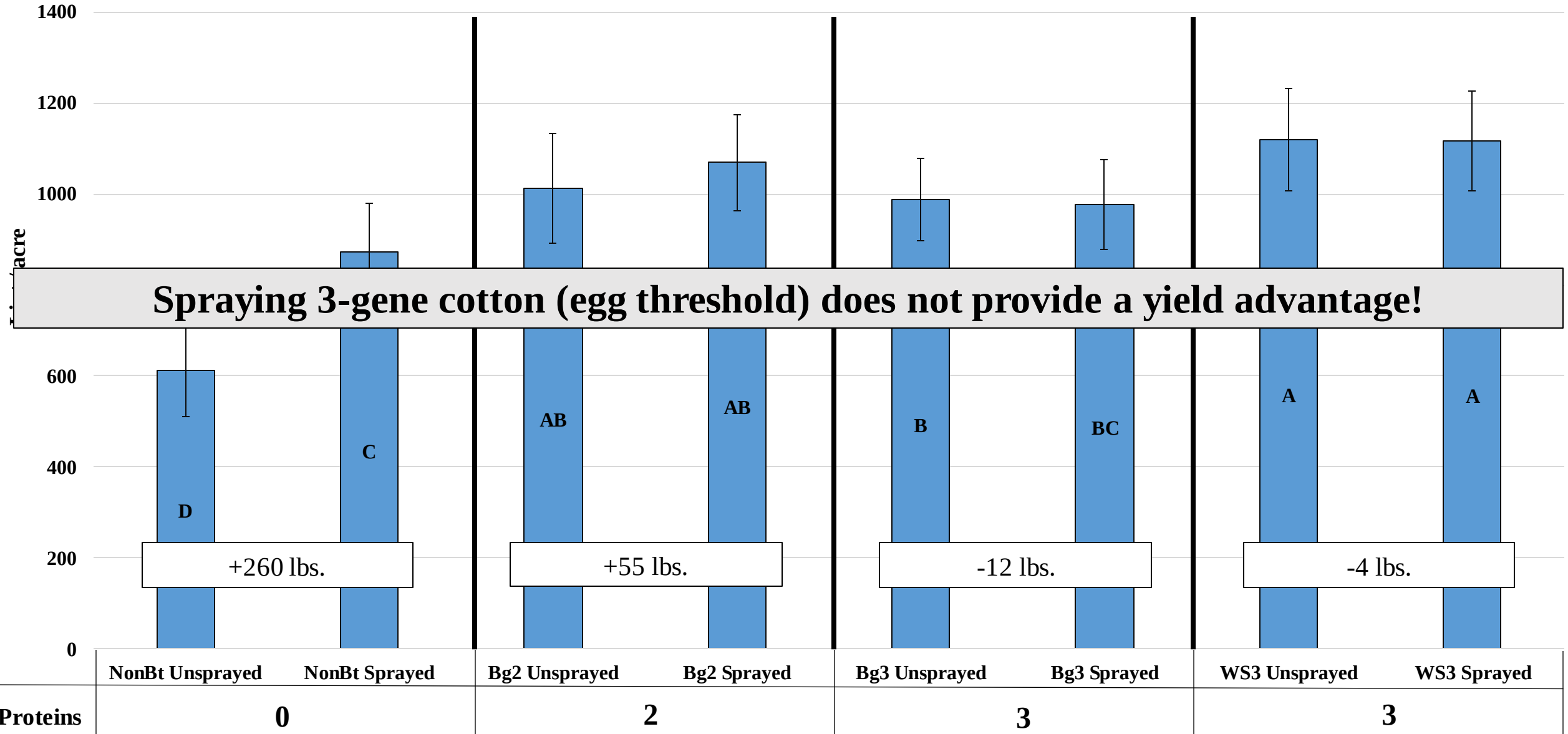
Foliar Insecticide Performance – Bollworms in Cotton
2022 - LA, AR, MS, TN



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!

Vip Technology – Current Situation

Currently, not believed to be considered economic damage!

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

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