



MISSISSIPPI STATE
UNIVERSITY™



Seedcorn Maggot



Southern Corn Rootworm



Wireworms



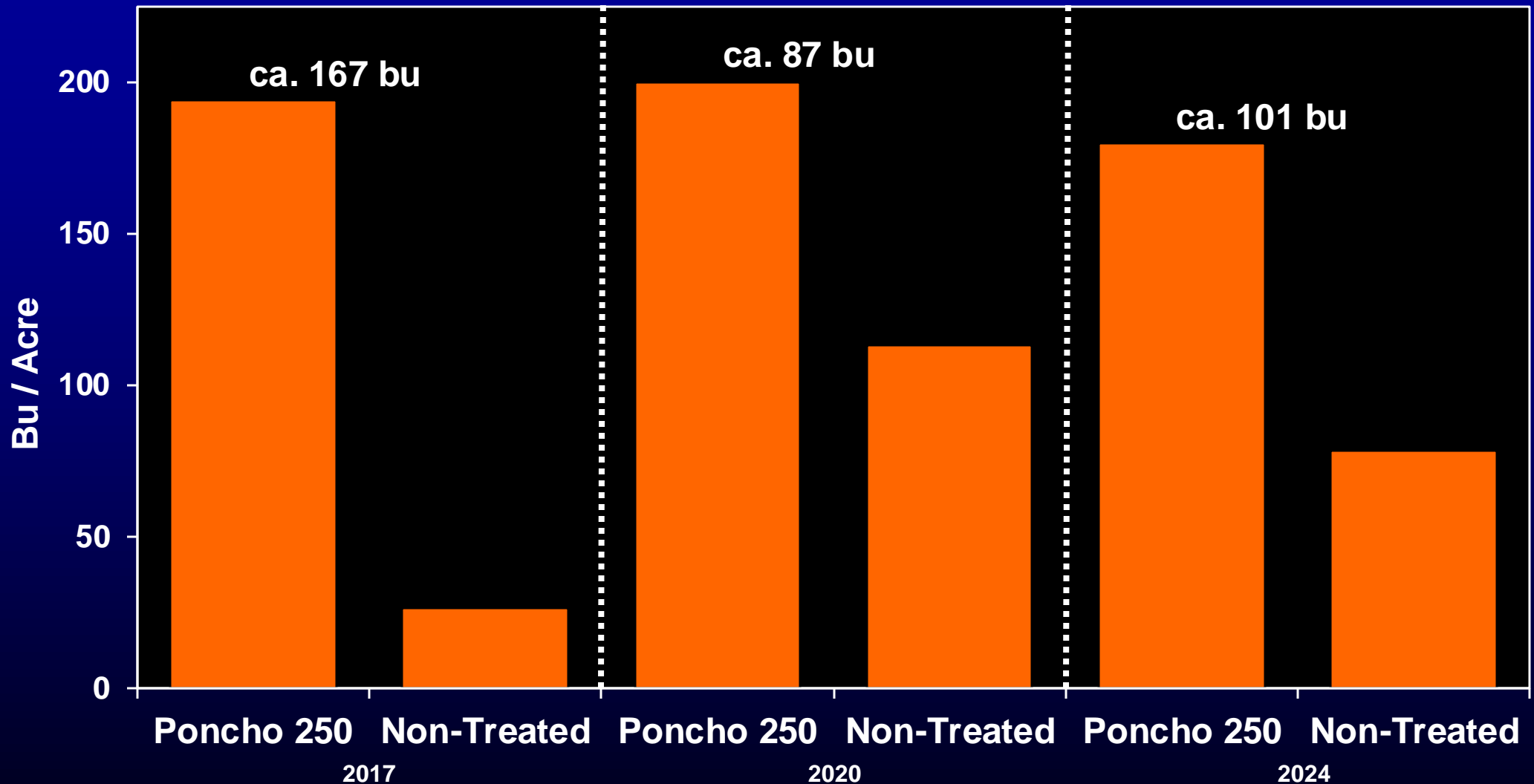
White Grubs



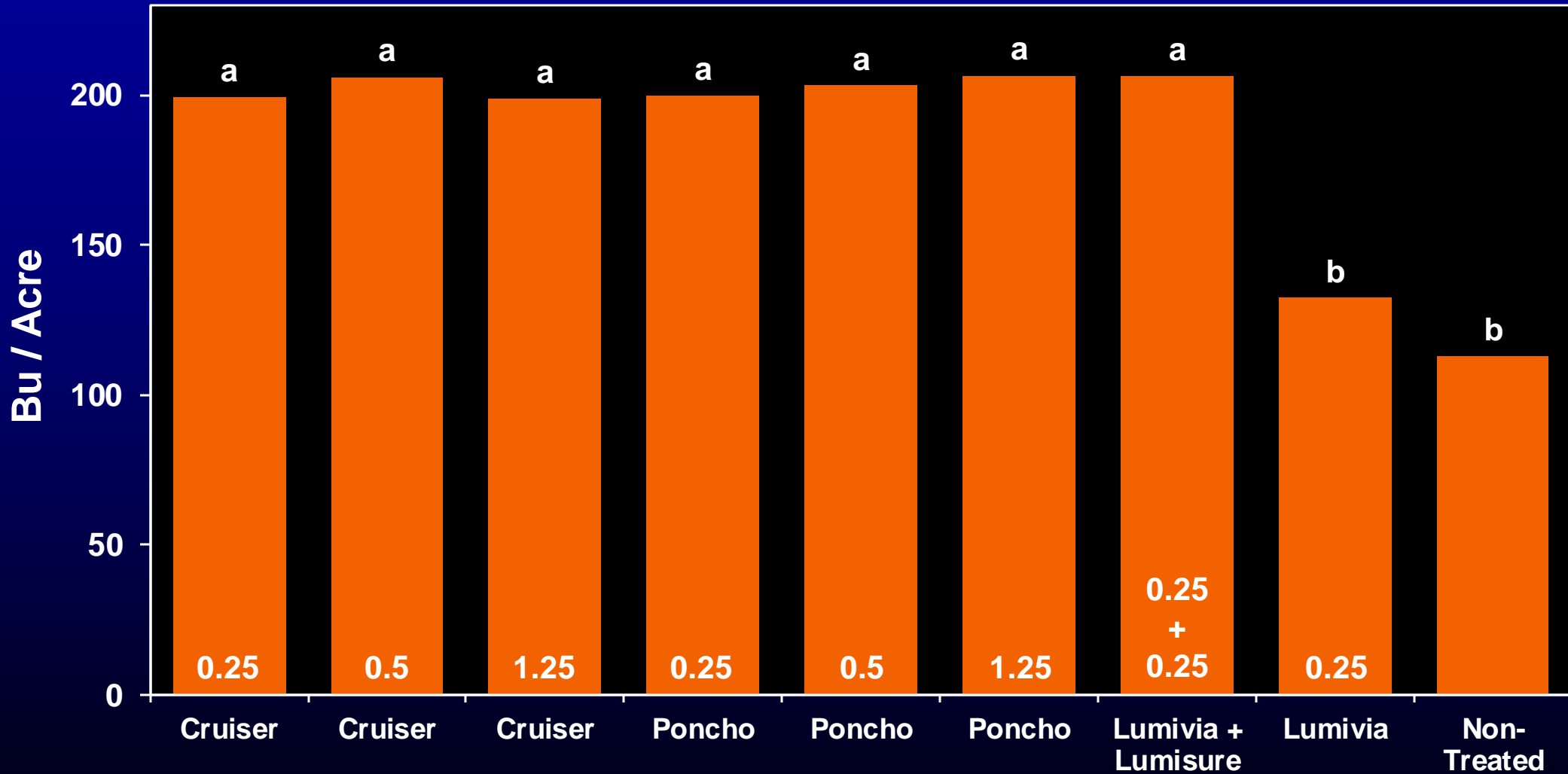


Dead at least 3 weeks before planting

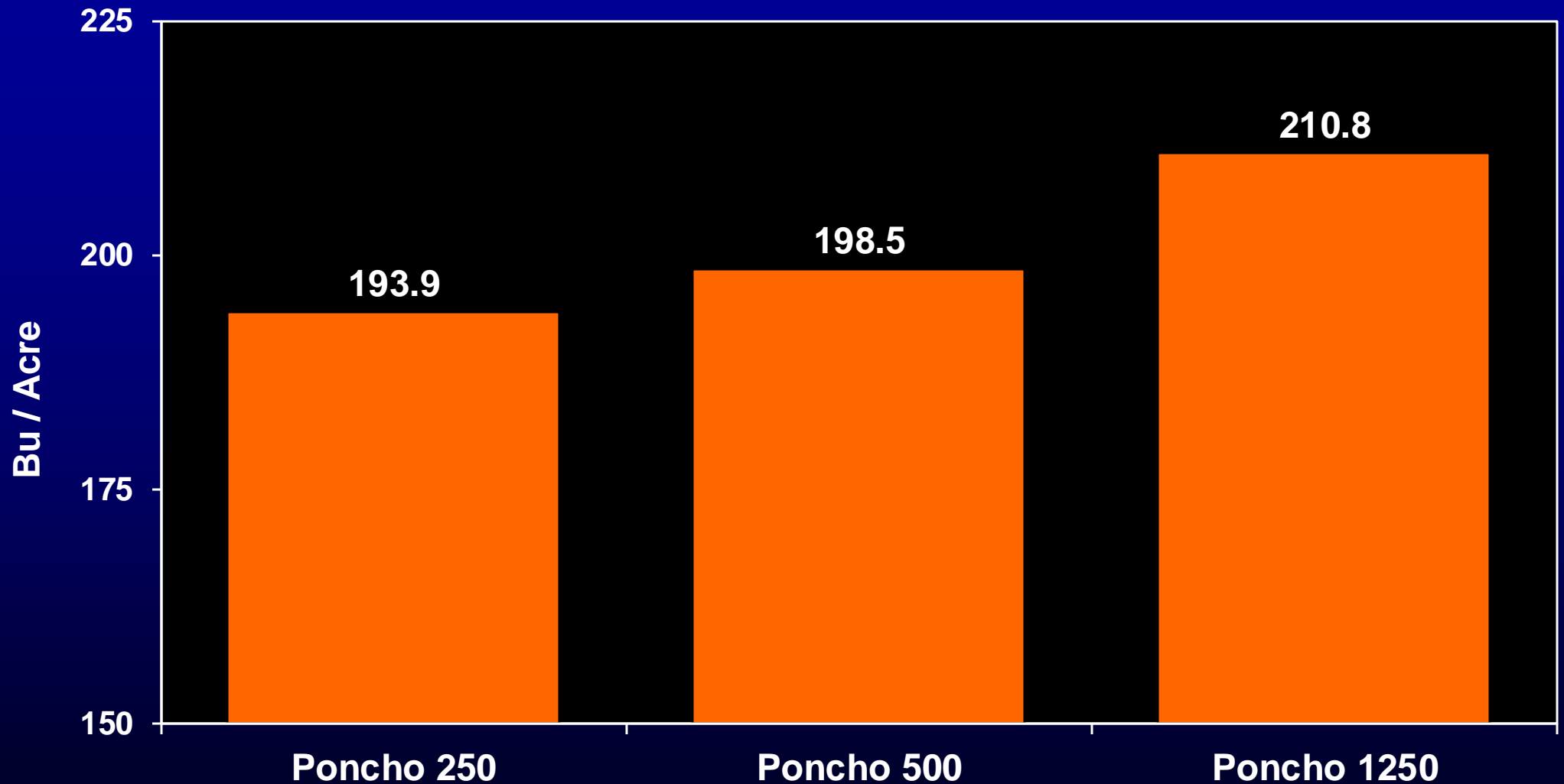
Impact of Corn Seed Treatments on Yield



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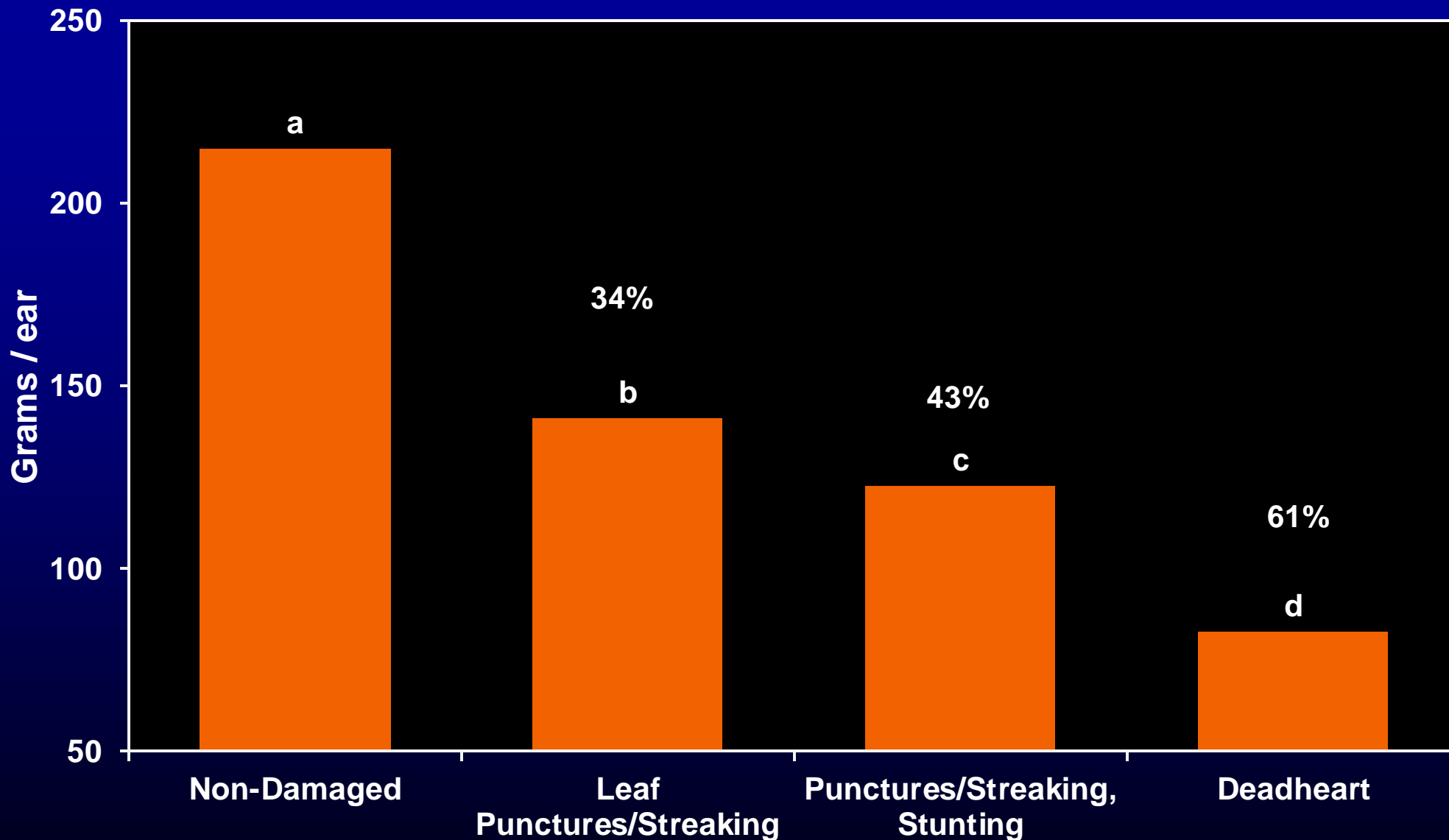




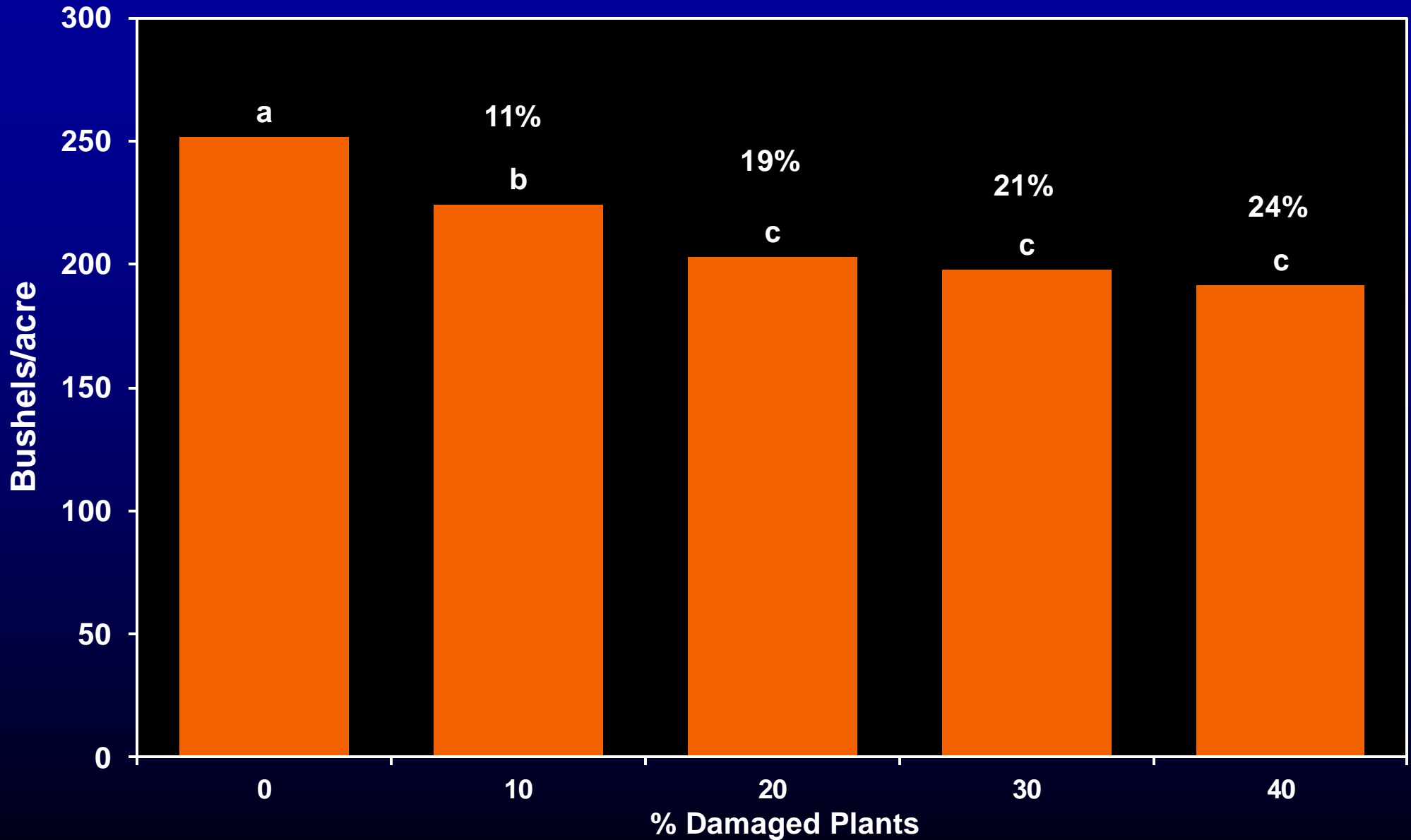




Impact of Stink Bug Injury on Field Corn Yield



Impact of Stink Bug Injury on Field Corn Yield

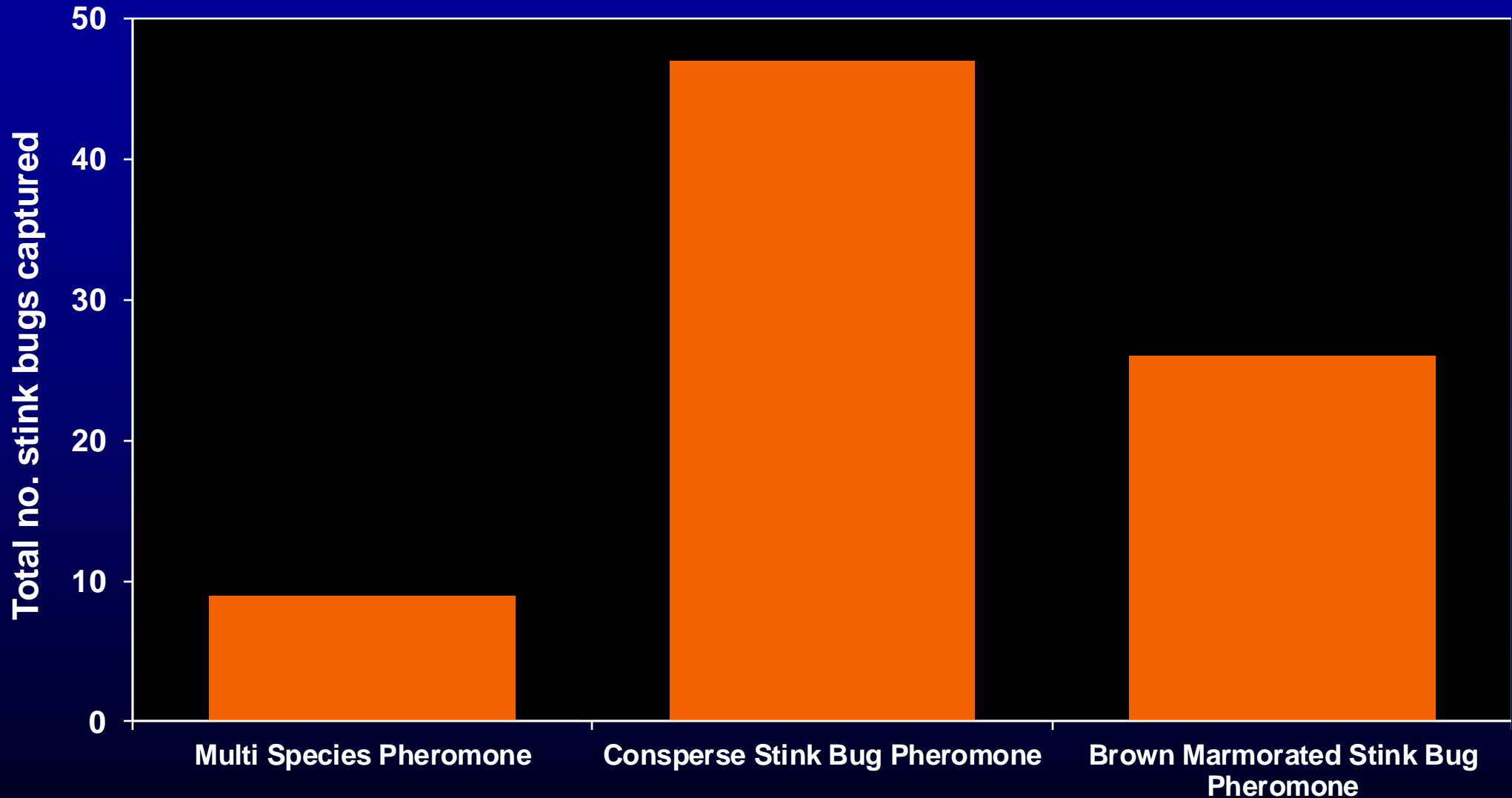




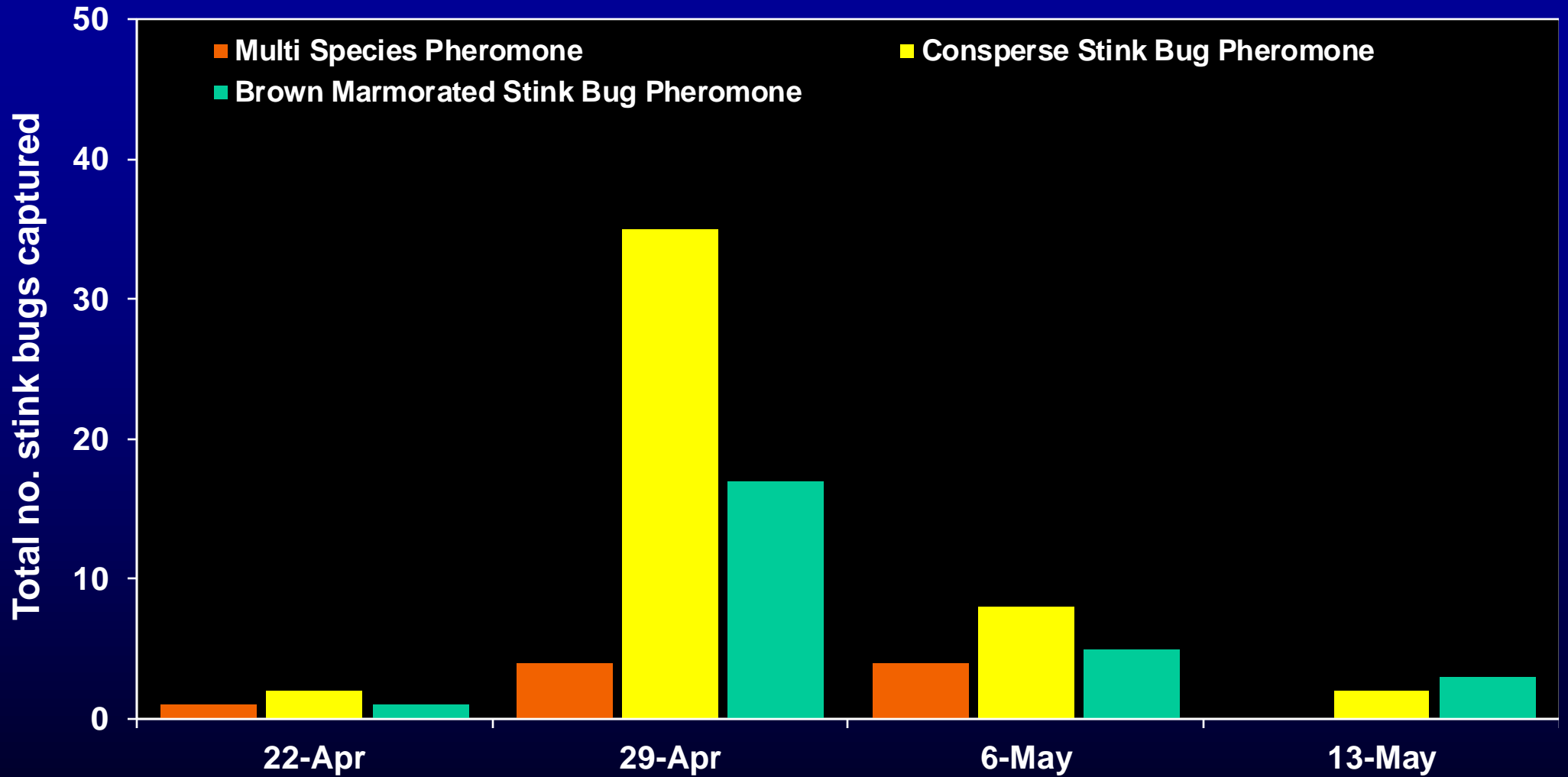
Beaver Pond



Evaluation of Commercial Stink Bug Pheromones for Capturing Brown Stink Bug

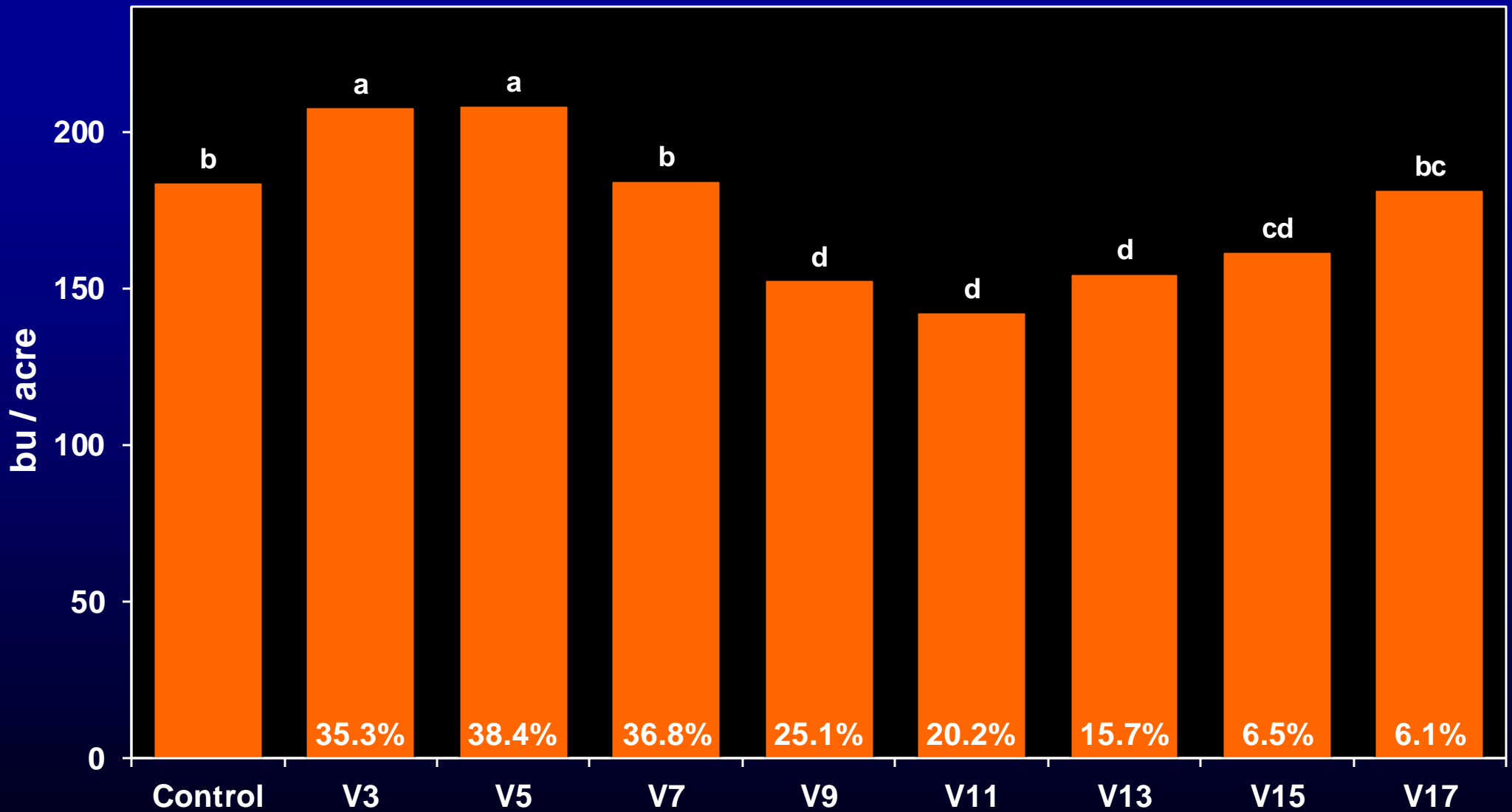


Evaluation of Commercial Stink Bug Pheromones for Capturing Brown Stink Bug



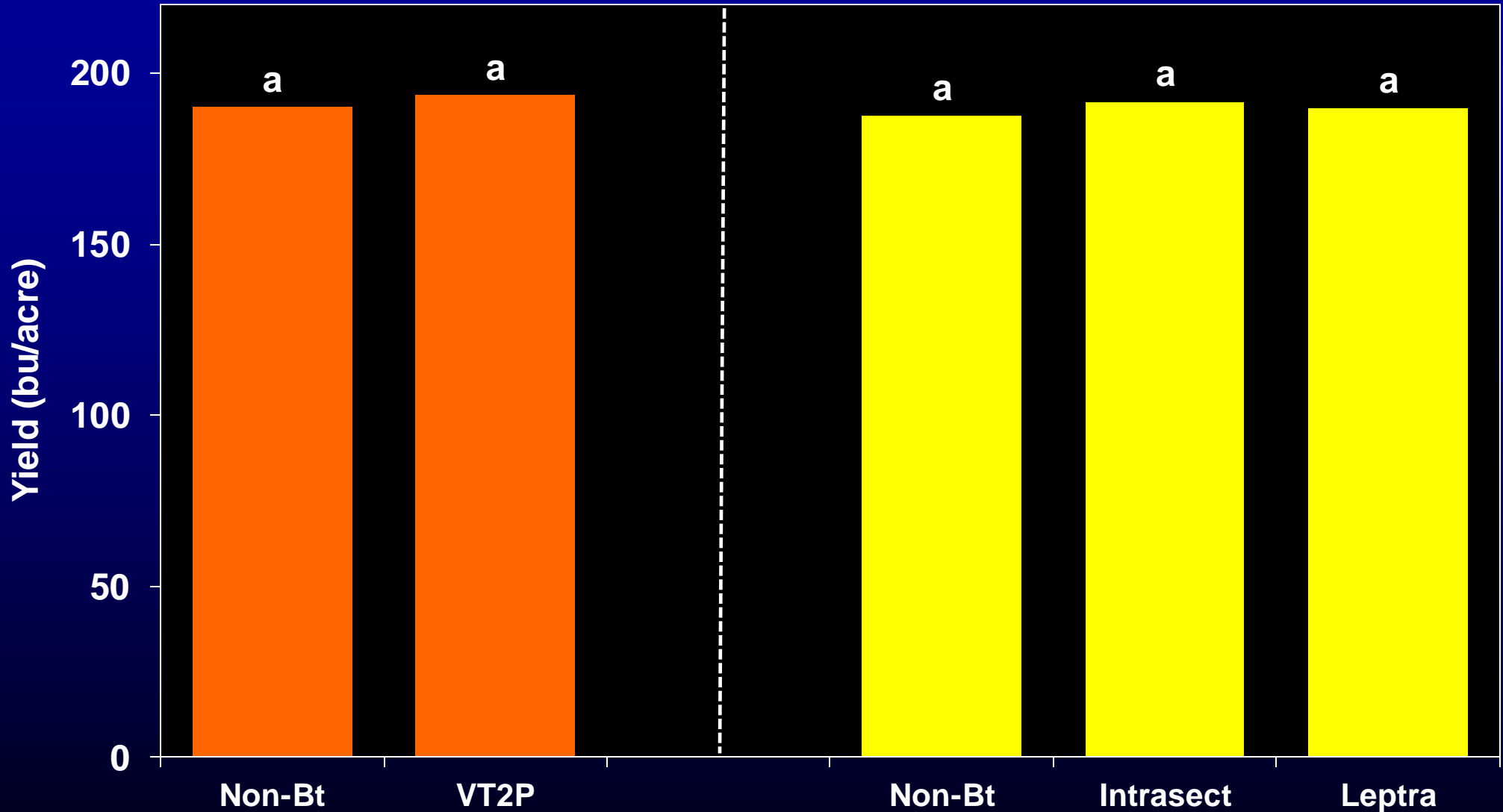


Impact of Defoliation on Yield

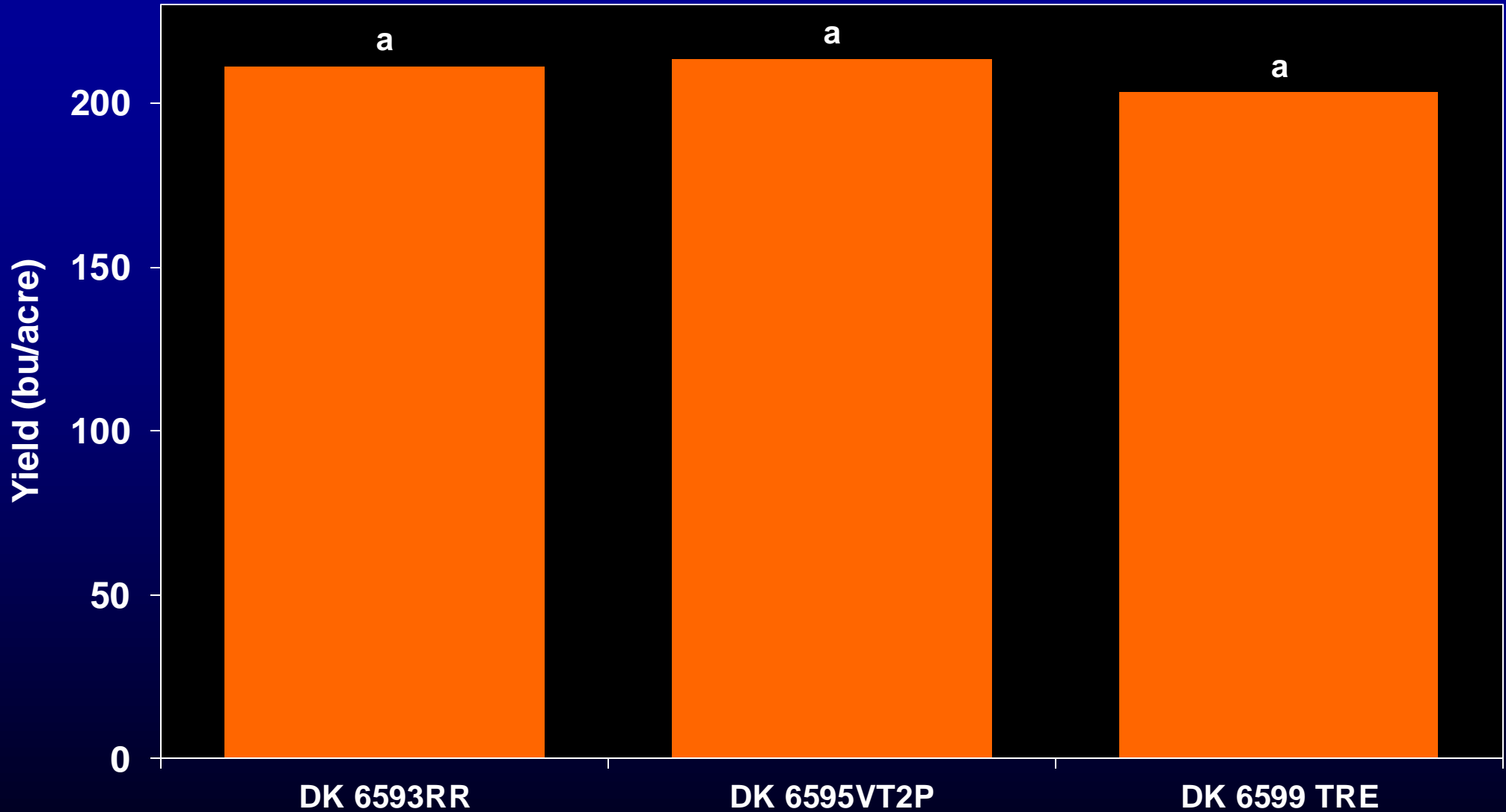




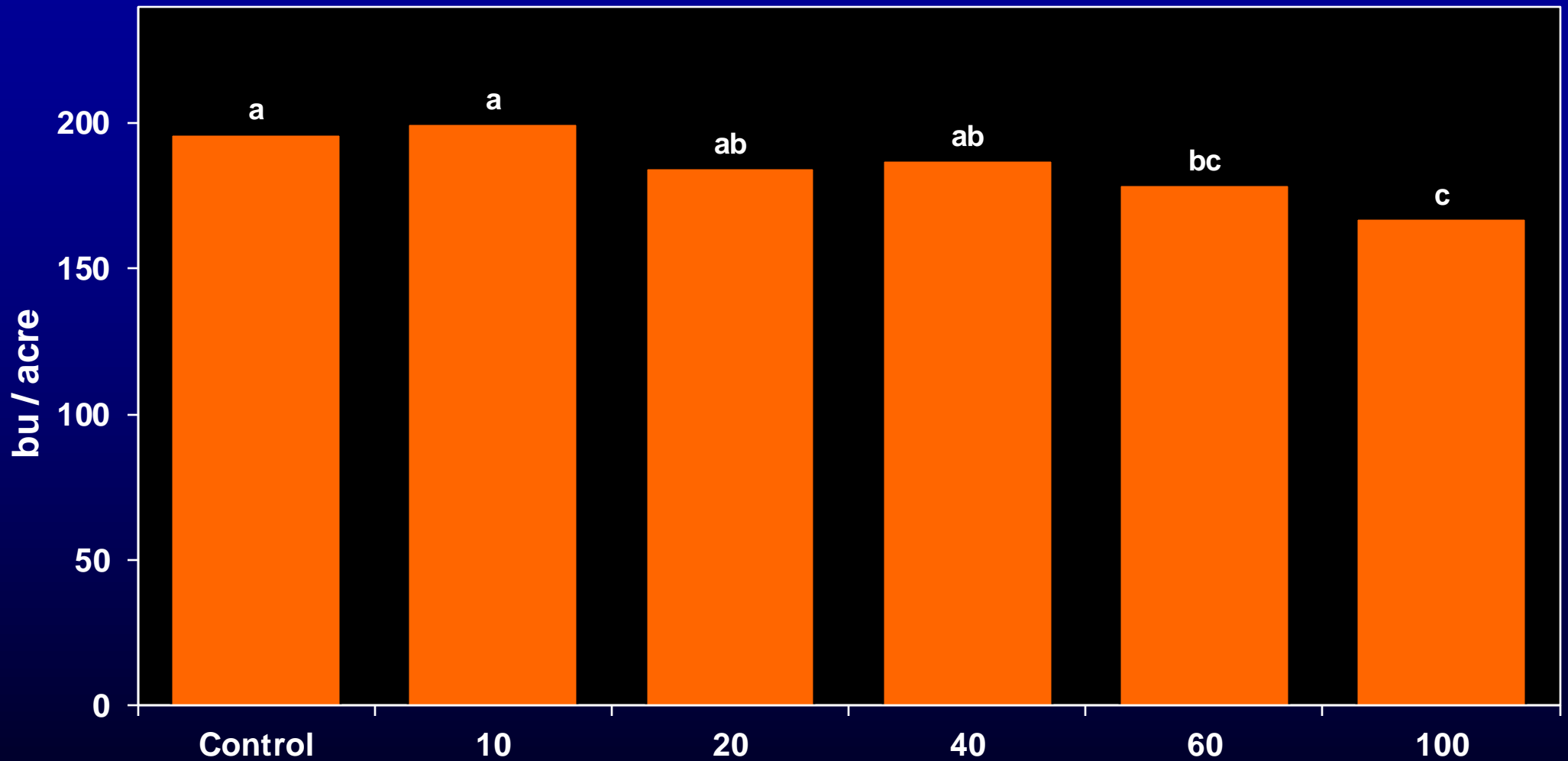
Bt Corn Technologies and Yield



Bt Corn Technologies and Yield



Impact of Kernel Damage on Yield



Corn Borers



Corn Borers



Southwestern corn borer

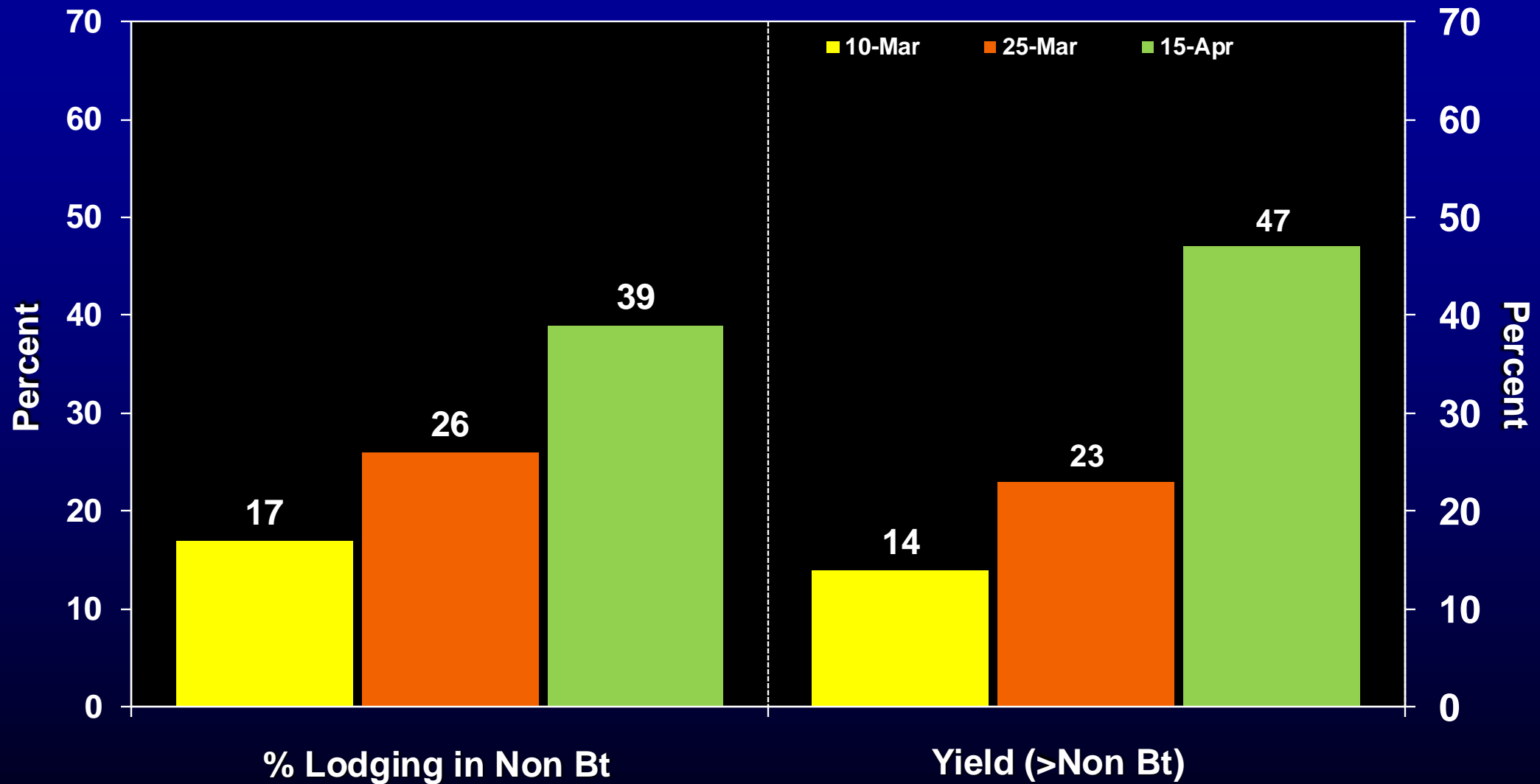
Sugarcane borer

European corn borer





Impact of Corn Borers on Yield



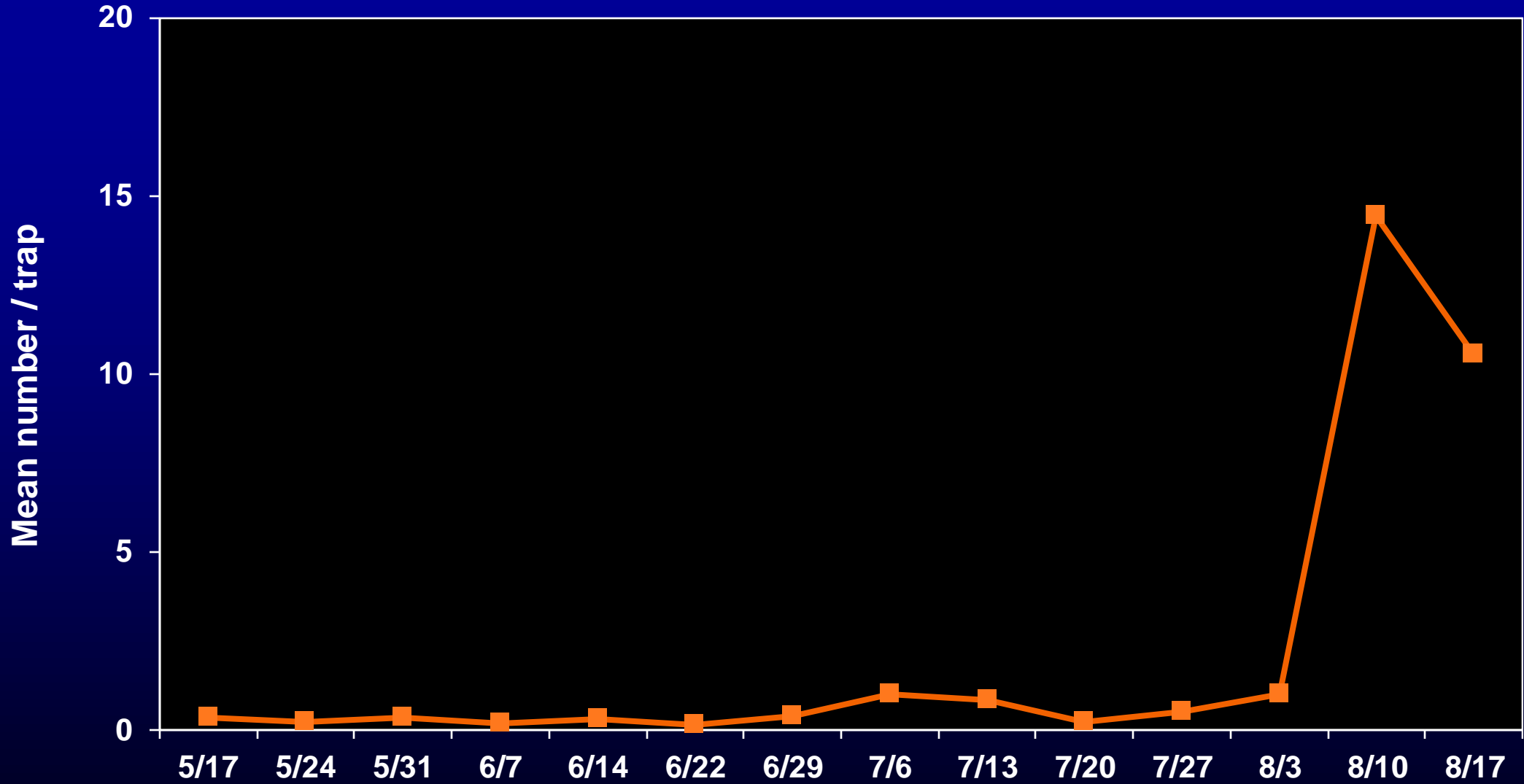
Southwestern Corn Borer Eggs



MS SWCB Recommendation

V1	V2	V _{nth}	VT	R1	R2	R3	R4	R5	R6
1 Leaf	2 Leaf	Nth Leaf	Tassel	Silk	Blister	Milk	Dough	Dent	Black Layer
<p>Treat 7-10 days after moth traps average <u>50 per trap on a 7 day catch</u> from V1-V_{nth} or when plants average <u>5 %</u> corn borer egg masses or larval infestations per plant.</p>				<p>Treat 7-10 days after moth traps average <u>100 per trap on a 7 day catch</u> from R1-R3 or when plants average <u>10 %</u> corn borer egg masses or larval infestations per plant.</p>			<p>Do Not Treat</p>		

2024 Corn Borer Trap Captures





Options
Comite II, Oberon, Zeal, Onager



**Ca. 40% of plants infested
before and during tassel**



Tropical/semi-tropical

Does not overwinter

Requires living host year round

Sensitive to freezing temps

50% mortality when exposed to 23° F for 3 to 3.5 hours



High numbers can damage corn directly through feeding

Produce copious amounts of honeydew can grow sooty mold which can block leaf photosynthesis

Pre-reproductive corn is most sensitive

Drought-stressed corn is more sensitive

Vector of Red Corn Stunt Disease “Complex”



Plant as early as possible. Early-planted corn is not affected as much by corn leafhoppers and its diseases. It is simply a matter of getting the corn beyond V8 before the leafhoppers infest it.



What Constitutes an Infestation?

1 live weevil and 5 other injurious insects or

2 live weevils or

10 injurious insects



Rice Weevil
Sitophilus oryzae (L.)



Maize Weevil
Sitophilus zeamais Motschulsky



Lesser Grain Borer
Rhyzopertha dominica (F.)

Other Insect Pests

Granary Weevil - *Sitophilus granarius* (L.)

Flat Grain Beetle - *Cryptolestes pusillus* (Schönherr)

Rusty Grain Beetle - *Cryptolestes ferrugineus* (Stephens)

Sawtoothed Grain Beetle - *Oryzaephilus surinamensis* (L.)

Merchant Grain Beetle - *Oryzaephilus mercator* (Fauvel)

Red Flour Beetle - *Tribolium castaneum* (Herbst)

Confused Flour Beetle - *Tribolium confusum* Jacquelin du Val

Yellow Mealworm - *Tenebrio molitor* L.

Dark Mealworm - *Tenebrio obscurus* F.

Foreign Grain Beetle - *Ahasverus advena* (Waltl)

Hairy Fungus Beetle - *Typhaea stercorea* (L.)

Indian Meal Moth - *Plodia interpunctella* (Hübner)

Angoumois Grain Moth - *Sitotroga cerealella* (Olivier)

Sanitation / Cleaning

Get rid of ALL old grain and grain residue from inside and around storage bins

Grain bin Maintenance – fix holes and cracks

Get rid of debris and weeds around storage bins

Grain Distribution and Aeration

Evenly spread grain to improve aeration efficiency

Reduce grain moisture and temperature as quickly as possible

<50°F (10°C)

Monitor grain moisture, temperature, and for insect infestations

How intensive does my stored grain insect management need to be?

It depends on:

Past history of insect issues.

How long do you plan to hold grain / when do you plan to move it out of bin.

Empty Bin and Proximity

malathion

β-cyfluthrin: Tempo SC Ultra

deltamethrin: DeltaDust, Centynal, Suspend SC, D-Fense SC

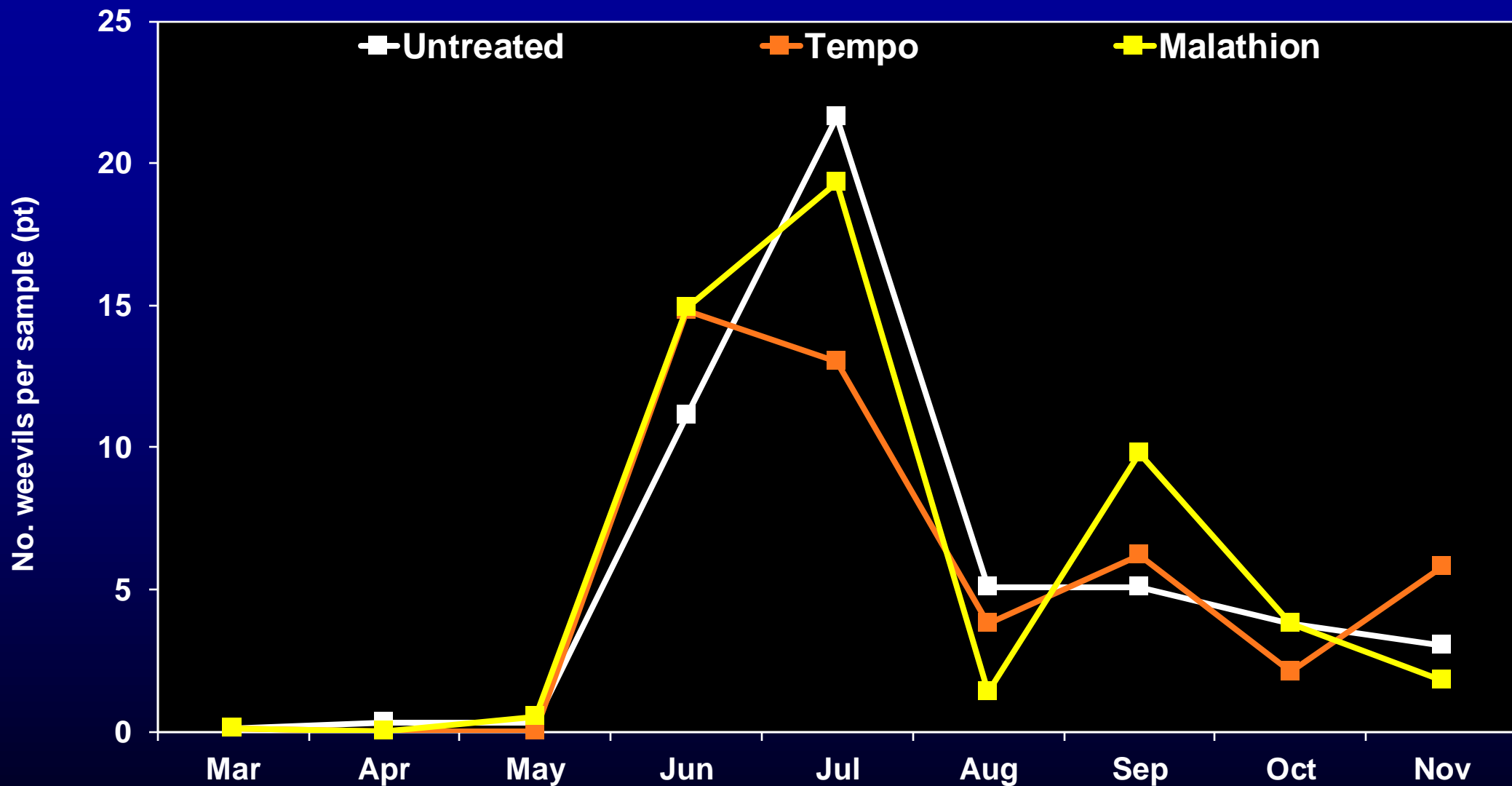
(s)-methoprene: Diacon-D IGR, Diacon IGR

(s)-methoprene plus **deltamethrin**: Diacon IGR Plus

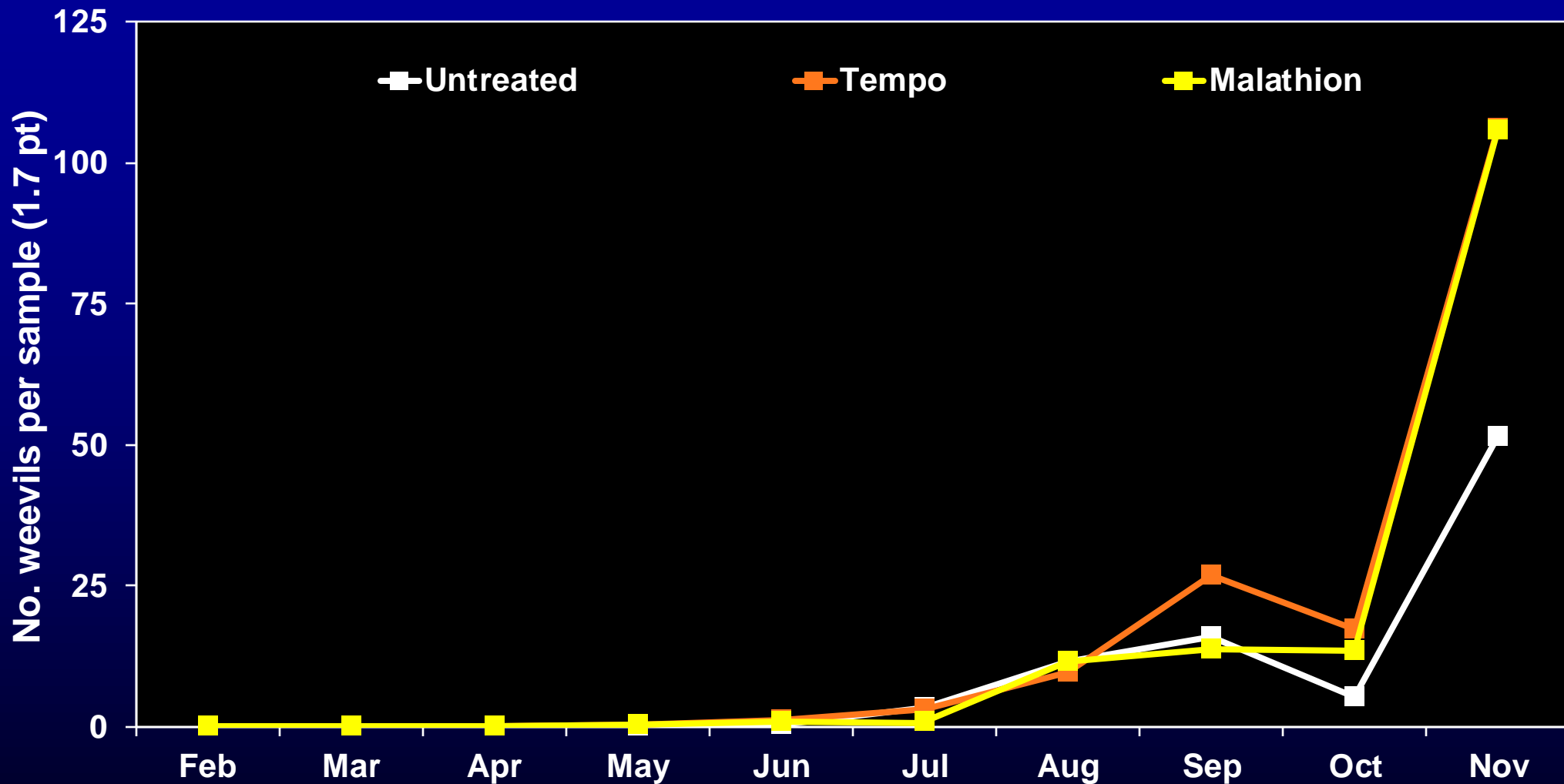
pyriproxyfen: Nyguard IGR

diatomaceous earth: Insecto, Dryacide 100, Protect-IT

Performance of Empty Bin Insect Management Tools



Performance of Empty Bin Insect Management Tools



Grain Protectant Options - Corn

pirimiphos-methyl: Actellic

spinosad: Sensat

deltamethrin: Centynal, Suspend SC, D-Fense SC

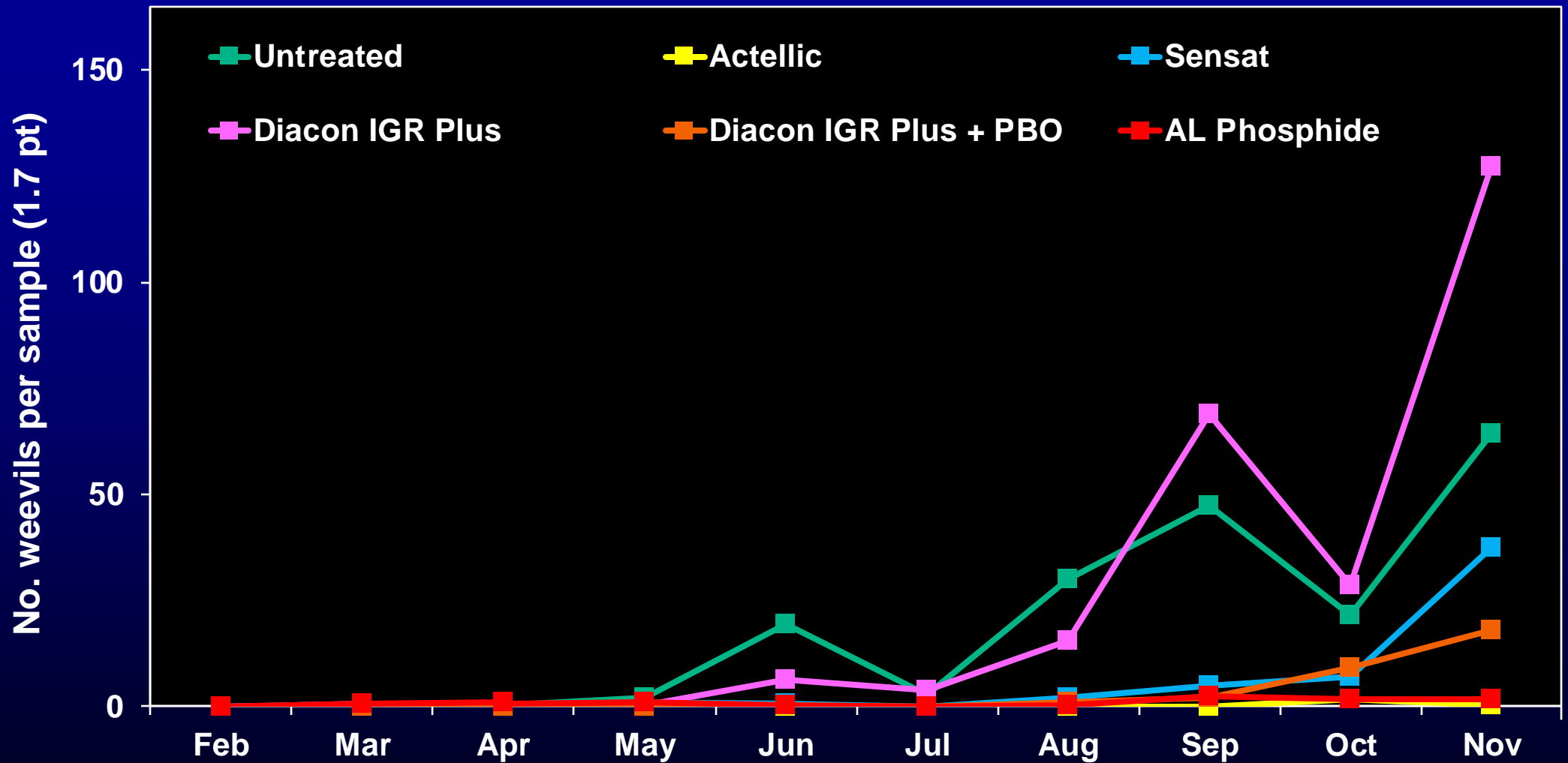
(s)-methoprene plus deltamethrin: Diacon IGR Plus

(s)-methoprene plus deltamethrin plus PBO: Gravista

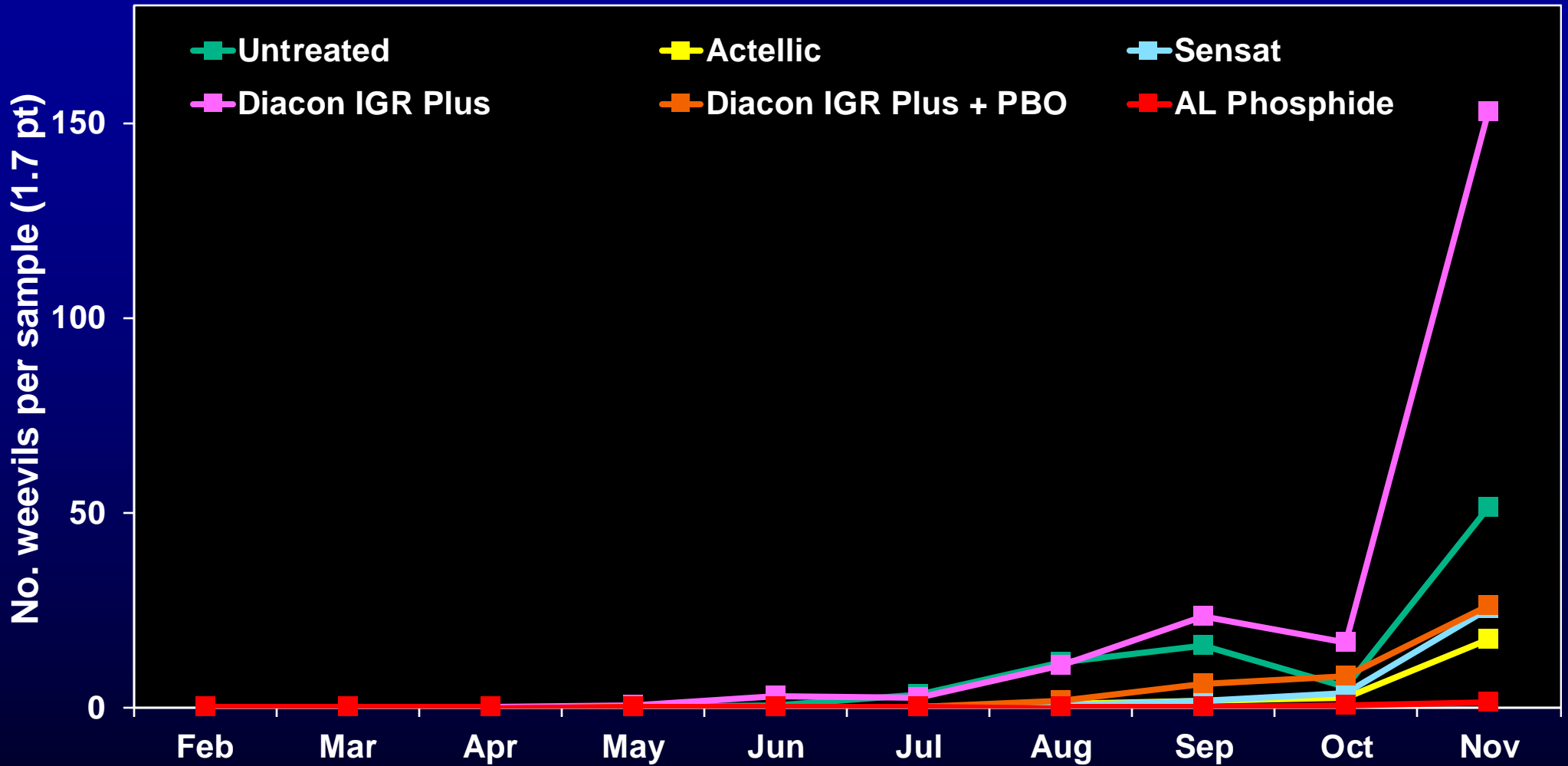
(s)-methoprene: Diacon-D IGR, Diacon IGR

diatomaceous earth: Insecto, Dryacide 100, Protect-IT

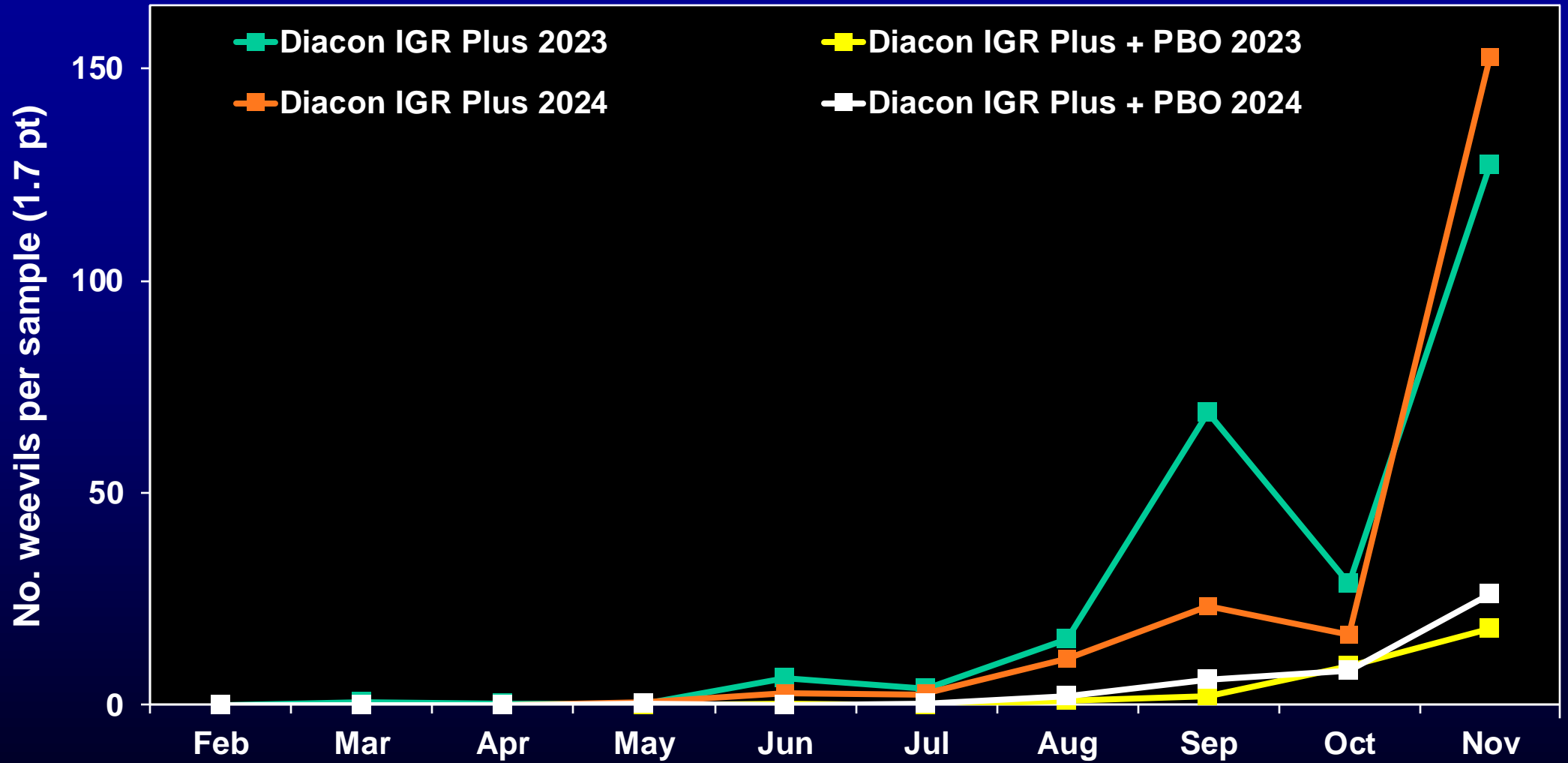
Grain Protectant Performance



Grain Protectant Performance



Impact of PBO on Pyrethroid Performance



Aluminum Phosphide



Aluminum Phosphide

Minimum Exposure Period

Temperature (F)

Pellets

Tablets

$\leq 40^{\circ}$

Do Not Treat

Do Not Treat

$41^{\circ} - 53^{\circ}$

8 days (192 hr)

10 days (240 hr)

$54^{\circ} - 59^{\circ}$

4 days (96 hr)

5 days (120 hr)

$60^{\circ} - 68^{\circ}$

3 days (72 hr)

4 days (96 hr)

$>68^{\circ}$

2 days (48 hr)

3 days (72 hr)





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