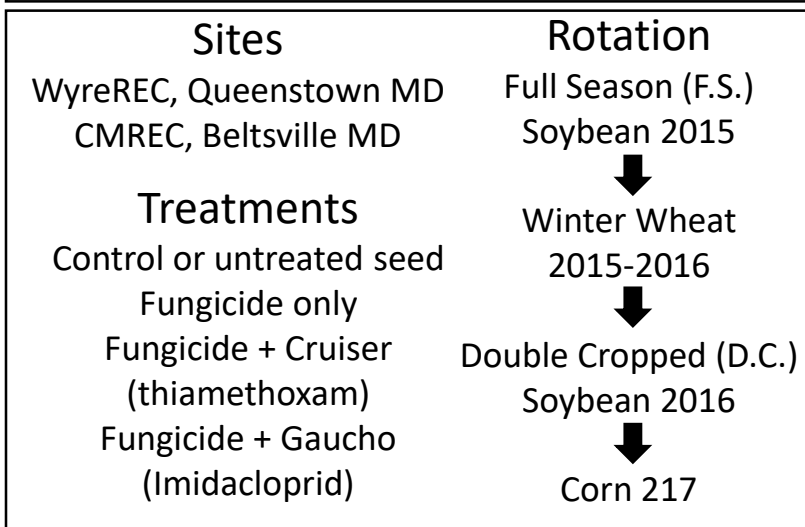
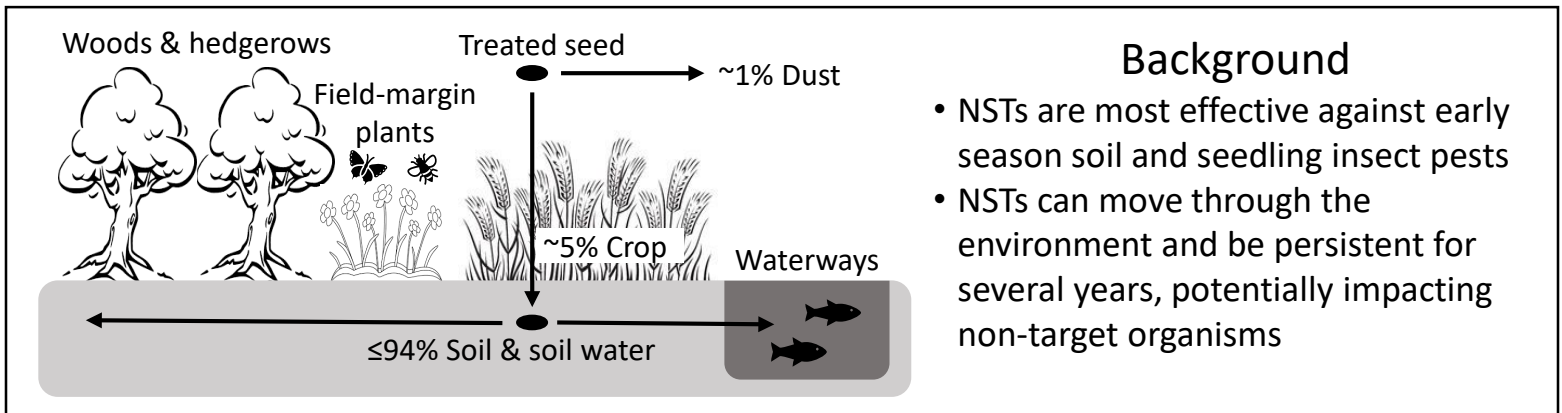


Costs and Benefits of Neonicotinoid Seed Treatments (NSTs) in Maryland Grain Production

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Non-Target Impacts

- Gaucho had greater impacts than Cruiser.
- In wheat, Gaucho suppressed important aphid natural enemies: aphelinid and braconid wasps.
- Other impacted natural enemies: lady beetles, minute pirate bugs, spiders, rove beetles.

Control

Fungicide

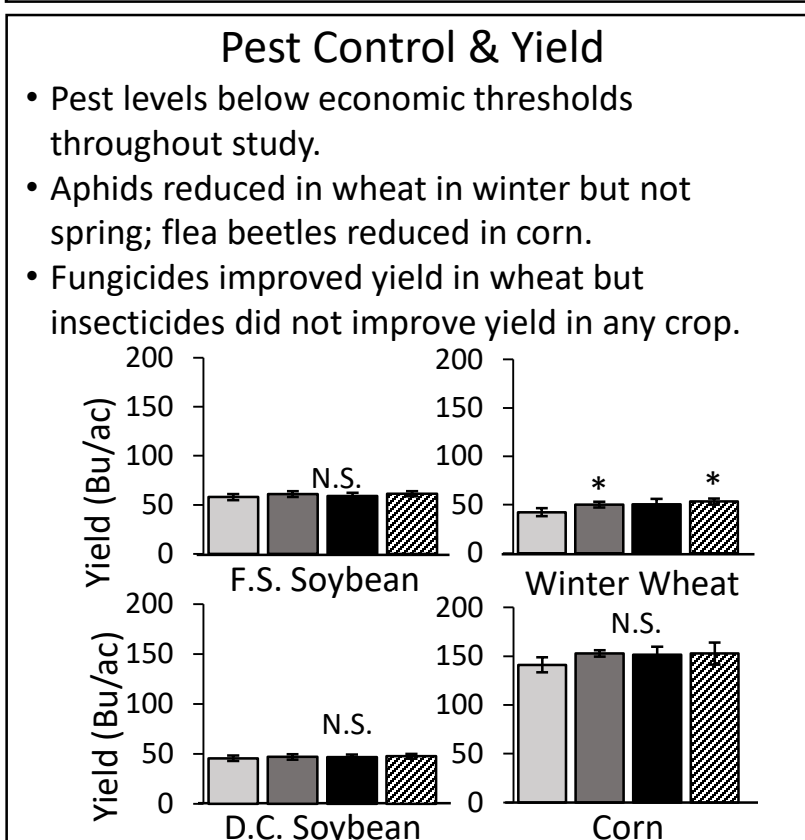
Cruiser

Gaucho

insects/sticky card

Winter Wheat

Aphelinidae Braconidae



Conclusions

- Effective against soil pests like wireworms and white grubs
- Do not provide yield benefits without pest pressure
- Negatively impact natural enemies, potentially disrupting natural pest control.