

## What's new in Entomology?

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## Session Goals

- Review insect management concerns from 2020 to be prepared if they recur
- Participants will understand biology and management of insects on agronomic crops seen in 2020



## Seed corn maggots

- Flies are attracted to lay eggs on decaying organic matter; plant residue or manure
- Larvae feed on germinating seed or seedlings in corn and soybeans
- Degree-day models can guide decisions about adjusting planting date to avoid periods with high larval abundance.





## Seed corn maggots

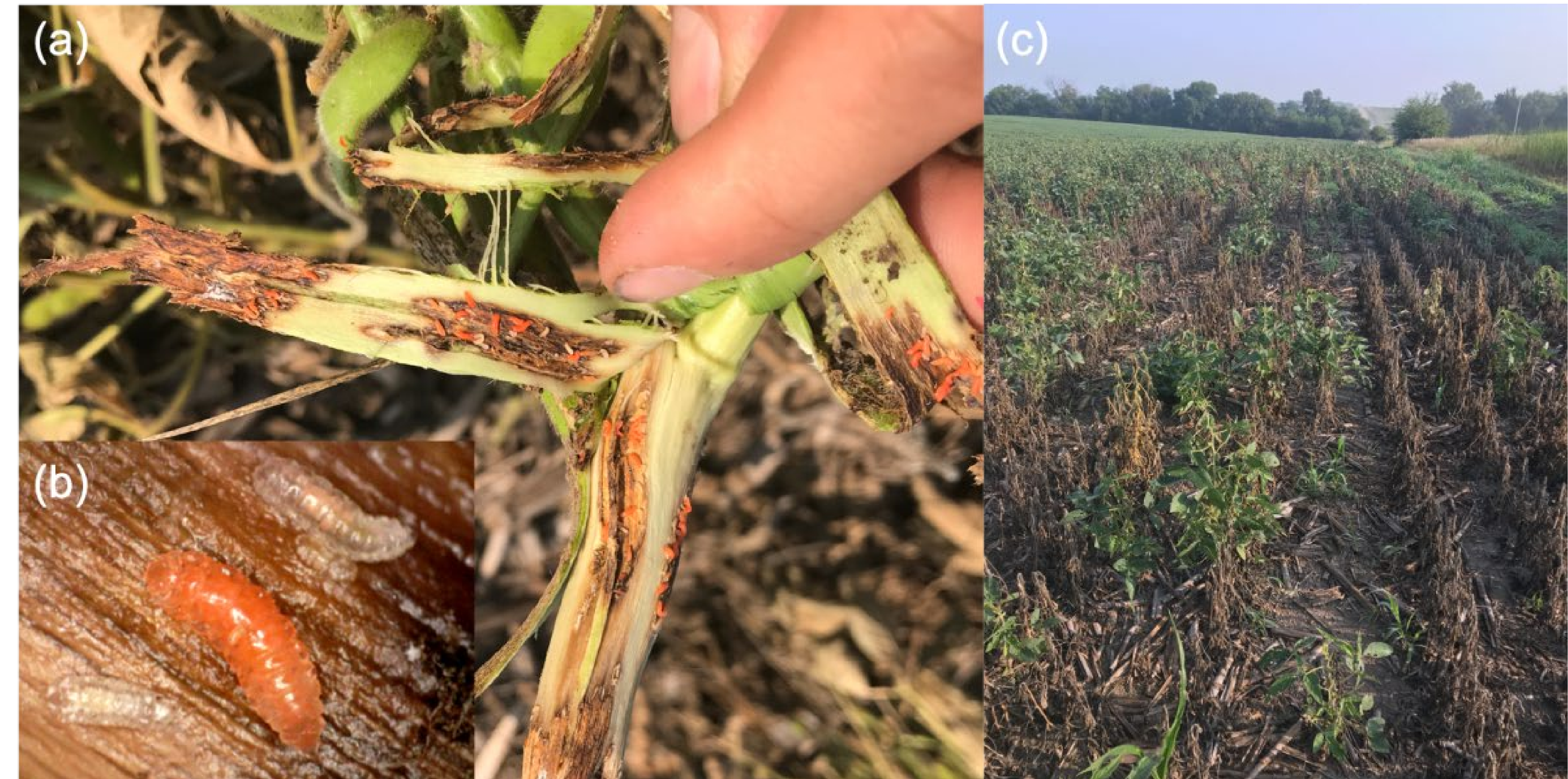
- Insecticidal seed treatments are effective unless there are very high densities of seed corn maggots
- Delay planting until soil temperatures promote rapid seed germination.
- Avoid planting for at least two weeks after fresh organic materials have been incorporated into soil.





## Soybean gall midge

- Found in many Eastern Nebraska counties in 2020
- Typically most abundant in field edges
- Scout for orange larvae at base of plant
- See [soybeangallmidge.org](http://soybeangallmidge.org) for more information





## Soybean defoliators



Yellow woolly bear



Silverspotted skipper



Green cloverworm



Bean leaf beetle



Differential grasshopper



Japanese beetle



Southern corn rootworm



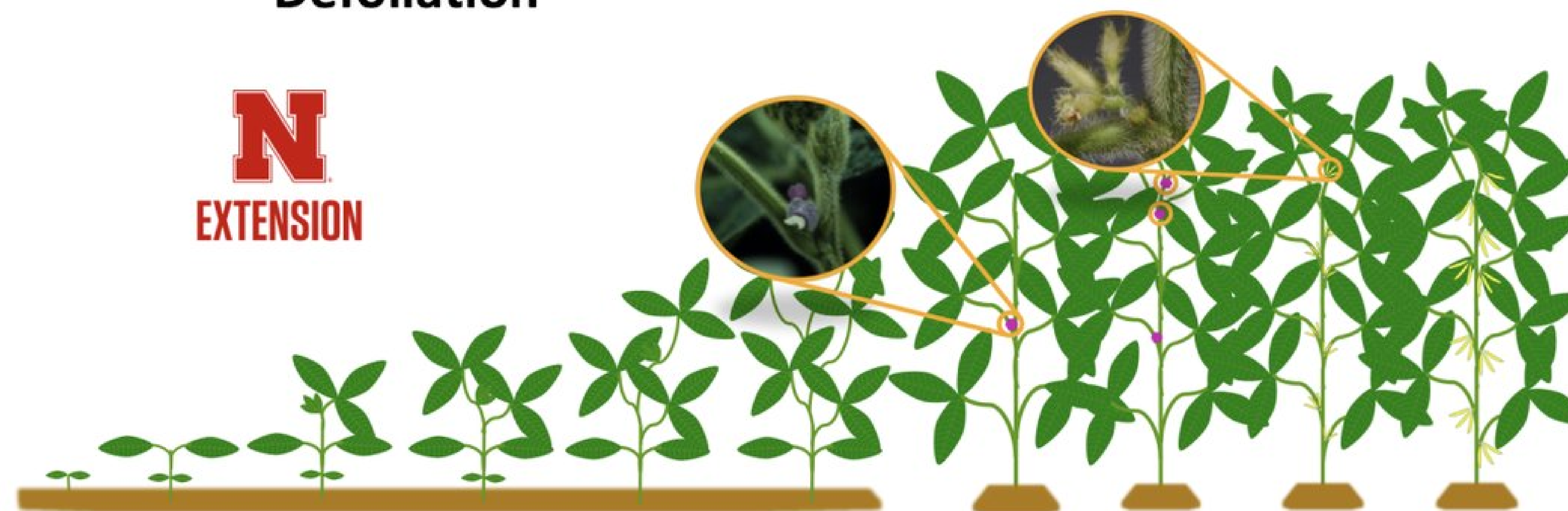
## Soybean Defoliators Thresholds

**Vegetative Stage**

**30%**  
Defoliation

**Reproductive Stage**

**20%**  
Defoliation

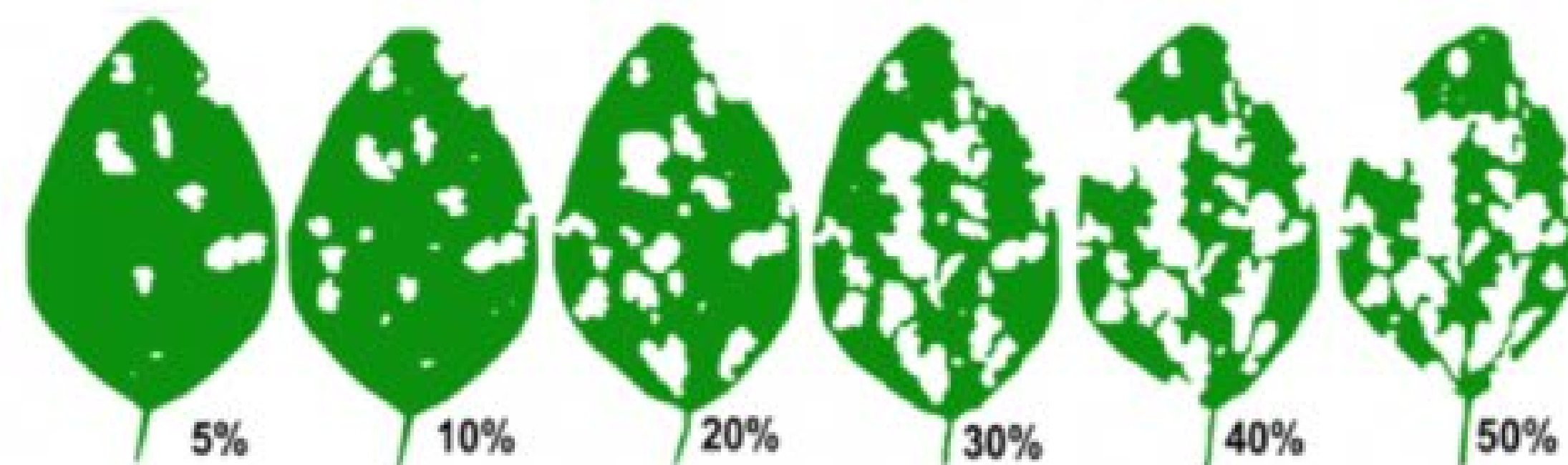


**% Defoliation: often overestimated**



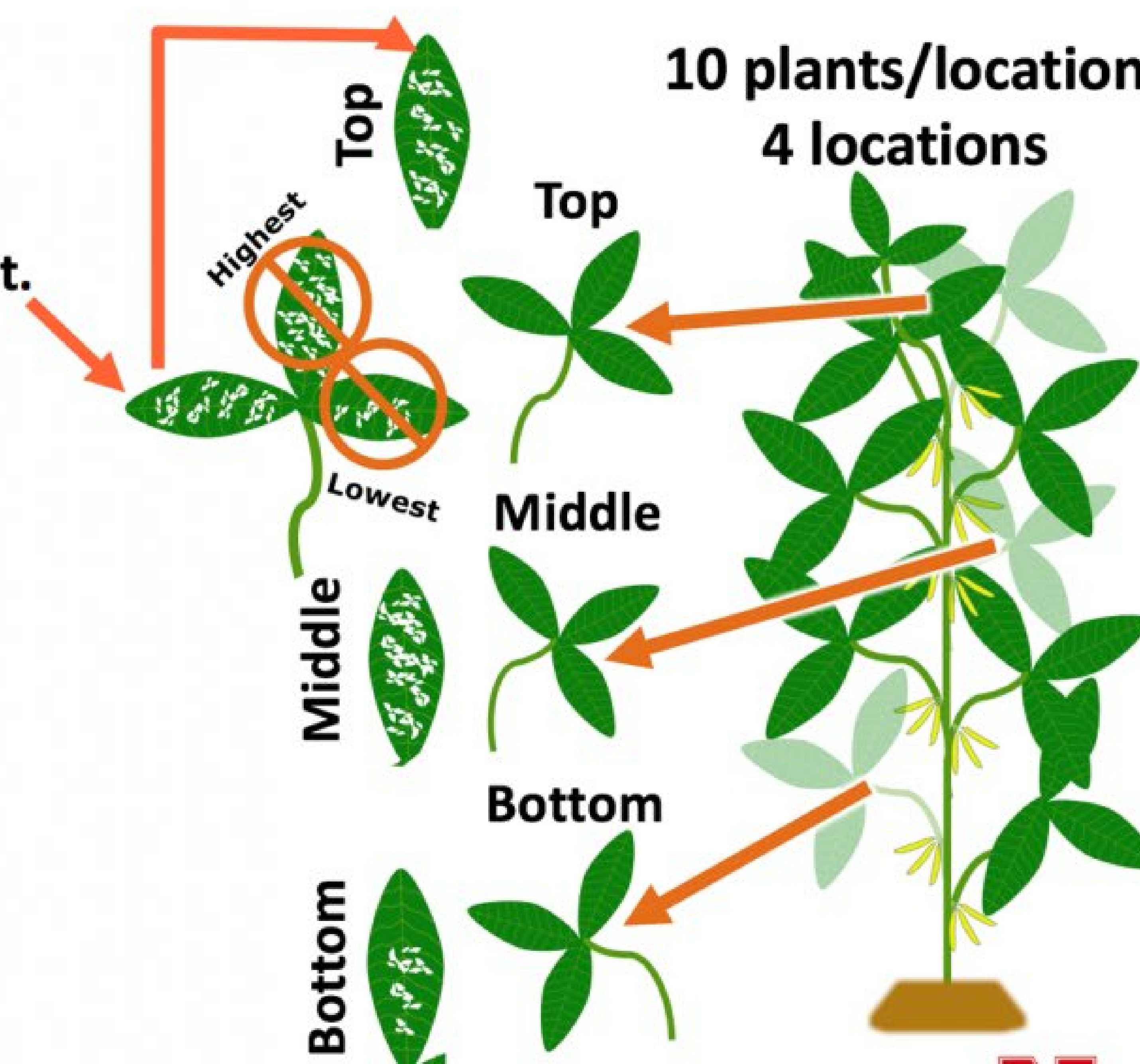
## Estimating Insect Defoliation in Soybeans

- 1 Remove leaves from top, middle and bottom of plant.
- 2 Remove the highest and lowest defoliated trifoliate. Keep other leaflet.
- 3 Repeat for the middle and bottom leaves on the same plant.
- 4 Repeat 1 - 3 on 10 more plants.
- 5 Repeat at 4 more locations and take average defoliation of all 40 leaves.



Levels of soybean defoliation. Injury is often over-estimated.

NebGuide G2259



Thresholds: Vegetative Stage: 30%  
Reproductive Stage: 20%



- Dectes stem borer continues to expand its range in Nebraska as a pest of soybeans
- Early harvest of infested fields can reduce harvest losses due to stem breakage/lodging





# Crop Production Clinics

- Western bean cutworm was abundant in parts of Nebraska
- Degree-day model can help target when egg mass scouting should begin
- Use of economic thresholds and proper insecticide timing important for control
- Bt hybrids with Cry1F have reduced efficacy in parts of NE; hybrids with VIP3a protein highly effective





- Corn rootworms continue to be a problem in corn after corn
- Resistance to Cry3 proteins in Bt corn hybrids is present in parts of Nebraska
- Resistance to bifenthrin insecticide is present most commonly in SW NE
- IPM approach needed utilizing crop rotation, Bt corn and insecticides when needed





For more information see

## Handy Bt trait table for US Corn Production

[https://agrilife.org/lubbock/files/2020/02/BtTraitTable\\_FEB\\_2020.pdf](https://agrilife.org/lubbock/files/2020/02/BtTraitTable_FEB_2020.pdf)

## National Corn Growers Association

<https://iwilltakeaction.com/uploads/files/57471-1-ta-irm-factsheet-cornrootworm-bmps-final8.pdf>

**Corn Rootworm Best Management Practices**

Take ACTION  
Insect-Resistance Management

To effectively manage corn rootworm (CRW), implement a multiyear plan that includes a variety of tactics.

**CROP ROTATION**



**PRODUCTS WITH MULTIPLE CRW Bt TRAITS**



**SEED, SOIL OR FOLIAR-APPLIED INSECTICIDES**



**ASSESS RISK:**

- Did you plant the same CRW traits for consecutive years in the same fields?
- Did you notice large populations of CRW beetles?
- Did you observe root injury from CRW larvae?
- Are your fields planted to continuous corn?



## Take Home Points

- Be aware of resistance status of insects in your area to Bt corn hybrids and insecticides; modify management plans as needed
- Watch for defoliating insects in soybeans; species vary by year and location. Understand their life cycles and use defoliation thresholds
- Every year is different; read <http://cropwatch.unl.edu> for updates on 2021 crop pest issues



## Frequently Asked Questions

- Include 2-4 FAQs with answers for your presentation. These will help moderators facilitate discussion.
- These can be provided separate from presentation