



**SOUTH DAKOTA
STATE UNIVERSITY**

Impact of planting date on *Dectes* stem borer, *Dectes texanus* LeConte, (Coleoptera: Cerambycidae) infesting sunflowers in South Dakota

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INTRODUCTION

- *Dectes* stem borer, also known as long-horned beetle, is native to North America.
- The presence of *Dectes* stem borer in South Dakota sunflowers has increased by approximately 28% during the last four years. (source: NSA biennial survey)
- The girdling behavior of larvae causes damage through lodging prior to harvest.
- *Dectes* larval girdling causes a reduction of 34-40% in stalk-breaking force.
- *Dectes* is a threat to sunflowers in dryland fields and high-density planting areas.

Host-pest relation

Both sunflower and *Dectes* are native to North America.

Need for research

Lodging leads to significant economic loss in sunflower production.

Photo: Adam Varenhorst, SDSU



Figure 1.: Adult *Dectes* Stem Borer.

Photo: Adam Varenhorst, SDSU



Figure 2.: *Dectes* Stem Borer Larva.

MATERIALS AND METHODS



Field site:
Dakota Lakes
Research
Farm, Pierre,
SD

Two planting
dates: Early
May and Late
June

Data
collection:
Early and Late
October

Lodging
estimated as a
percent of
entire plot
affected

Stalks split
open and
examined for
Dectes larva/
tunnel

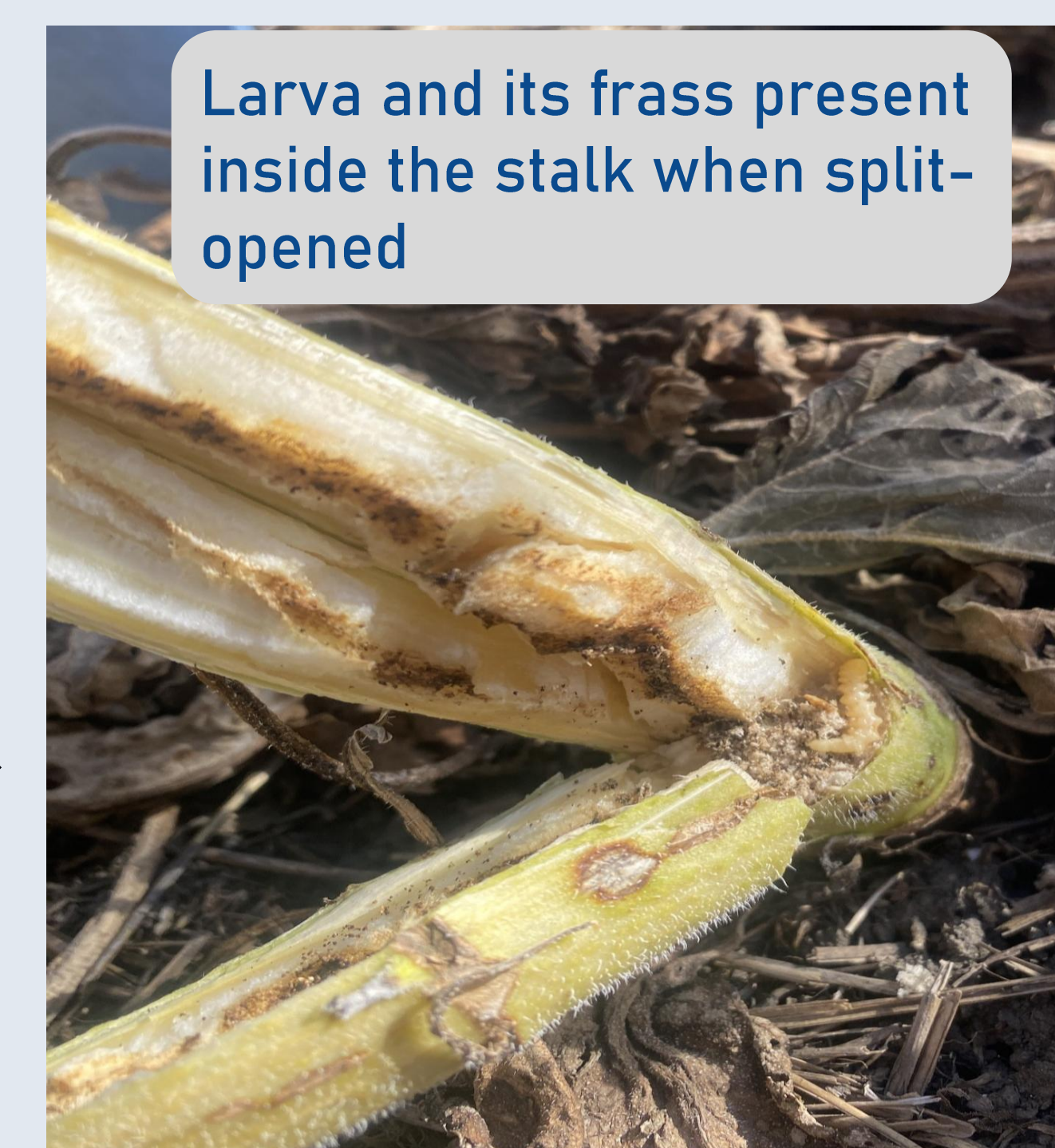
20 random
plants from
outer two
rows per plot



Look for larva/
tunnel at 2 inches
above soil surface

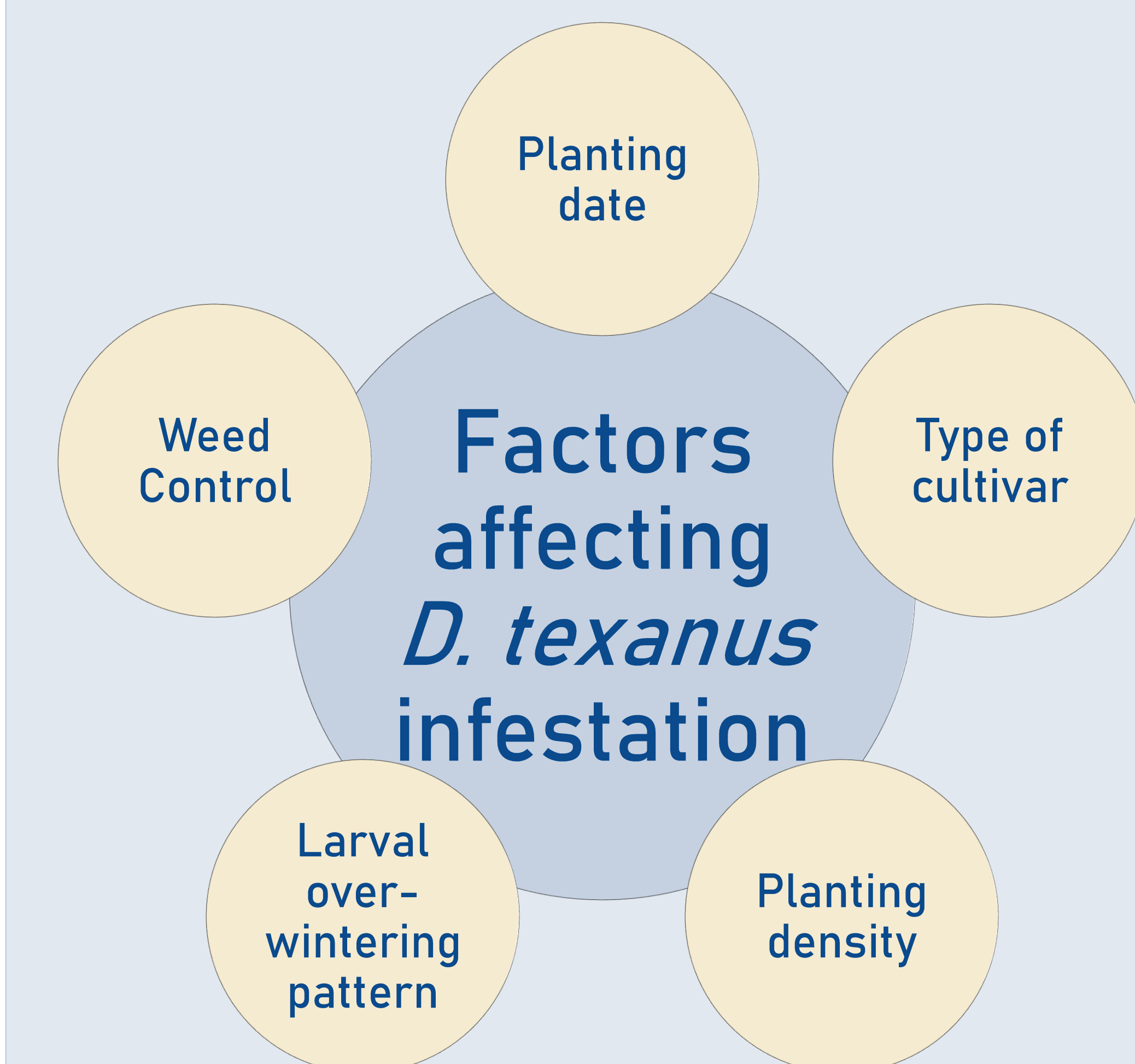


Figure 4.: Larval girdling and feeding evidences in sunflower stalks.



DISCUSSION

- The girdling behavior of *Dectes* larva starts with desiccation of the host plant's stem (Michaud et al., 2009).
- Early-planted sunflowers has more *Dectes* larval infestation and lodging (Rogers, 1985).
- *Dectes* stem borer prioritize sunflowers over other alternate hosts (Michaud et al., 2009).
- Delayed planting can help reduce the damage caused by *Dectes* stem borer (Charlet et al., 2007).



OBJECTIVES

Objective I

To assess the
Dectes stem borer
larval infestation in
sunflowers

Objective II

To determine the
lodging percentage
due to *Dectes* stem
borer larval
girdling

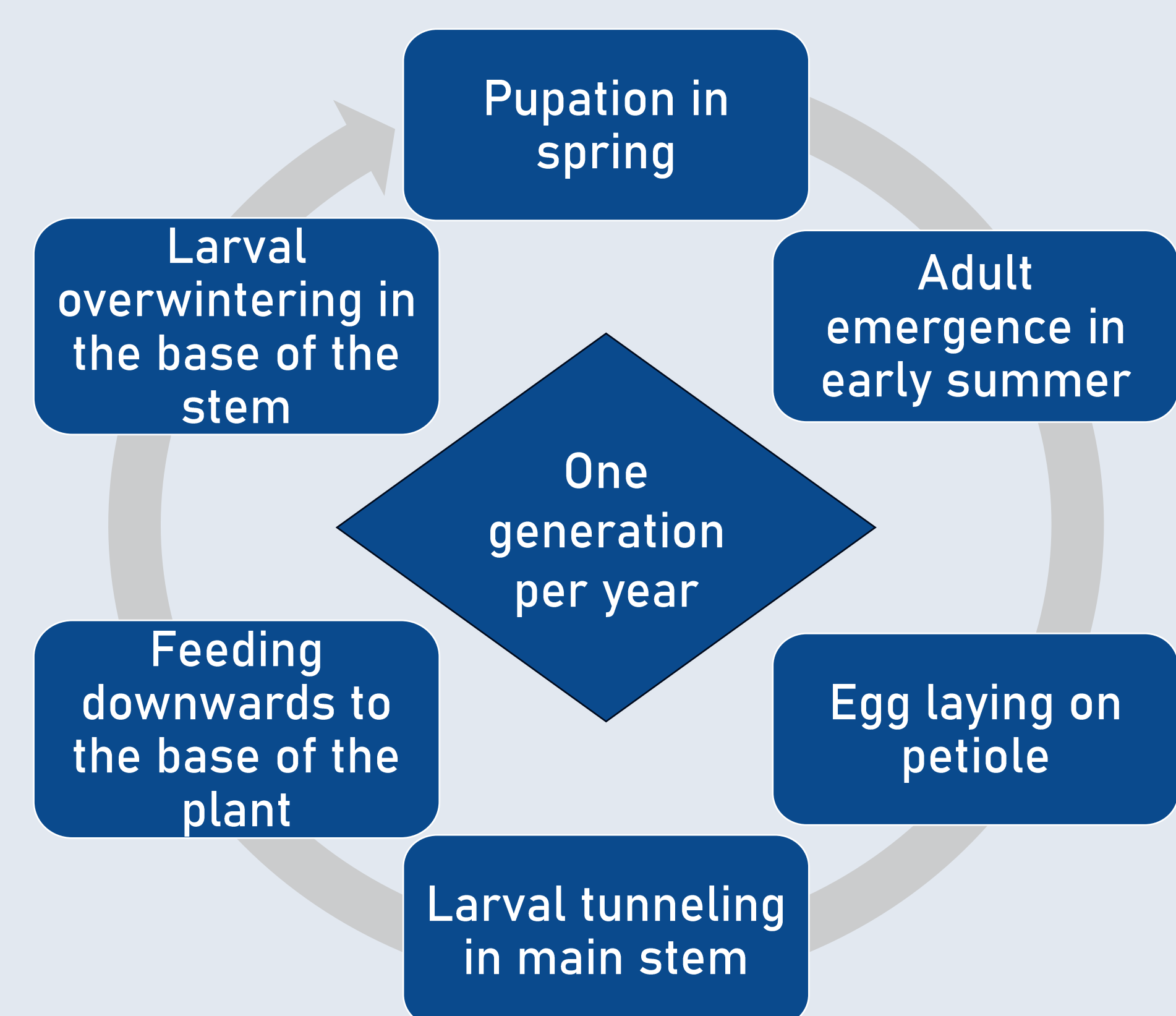


Figure 3.: *Dectes* stem borer biology

RESULTS

2024 *Dectes* Infestation

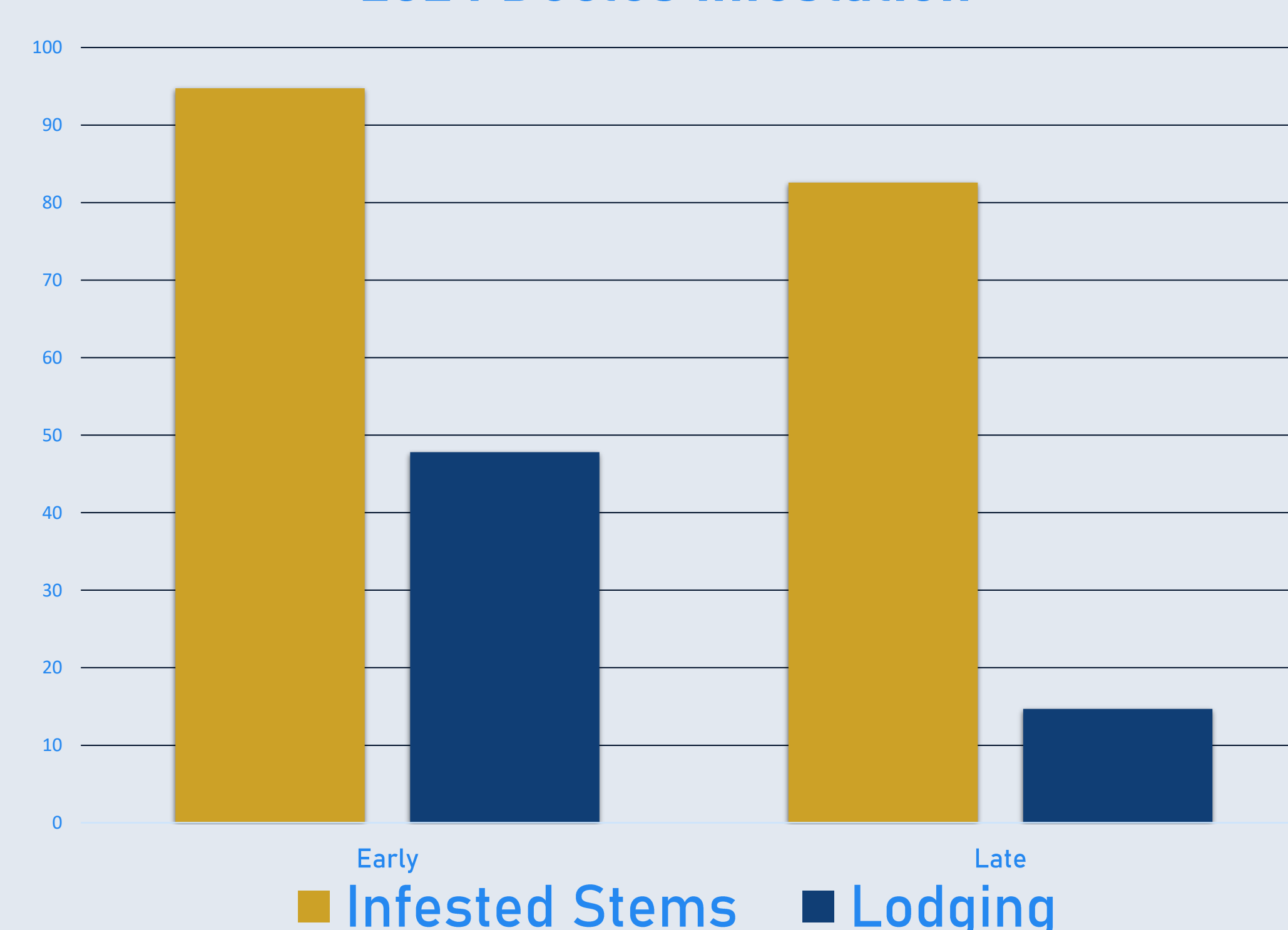


Figure 5.: *Dectes* infestation results in 2024.

- Both lodging and larval count were more in early-planted plots as compared to late-planted.
- Comparing the two years, the difference in infested stems was more pronounced in 2024.
- *Dectes* stem borer larval girdling symptoms were less pronounced in stems with higher stalk diameter.

2023 *Dectes* Infestation

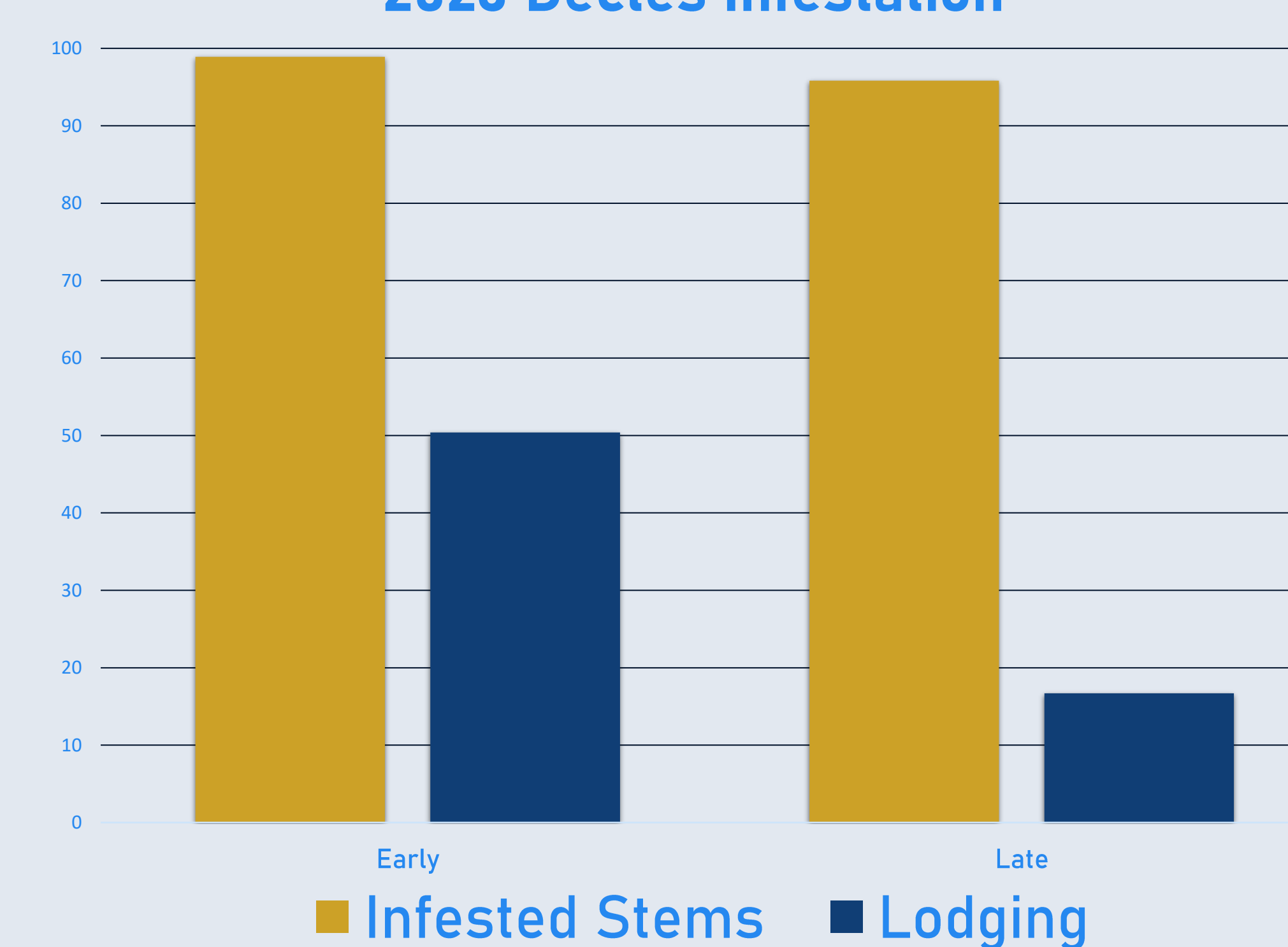
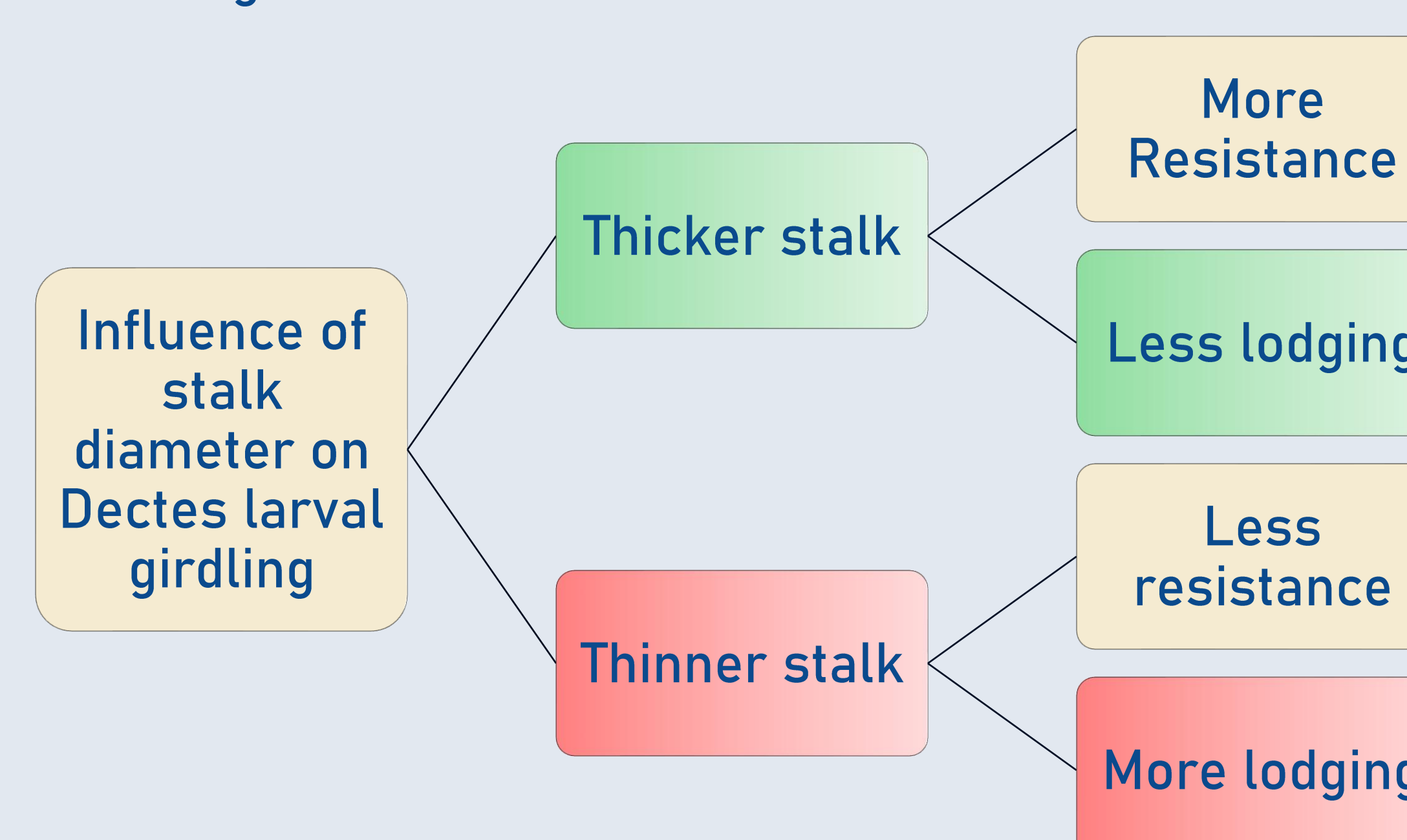


Figure 6.: *Dectes* infestation results in 2023.



CONCLUSIONS

- *Dectes* larval infestation and lodging due to larval girdling is worse in early-planted sunflowers as compared to late-planted ones.
- Sunflowers with smaller stalk diameter are likely to be girdled by *Dectes* larva.

REFERENCES

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