



**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.

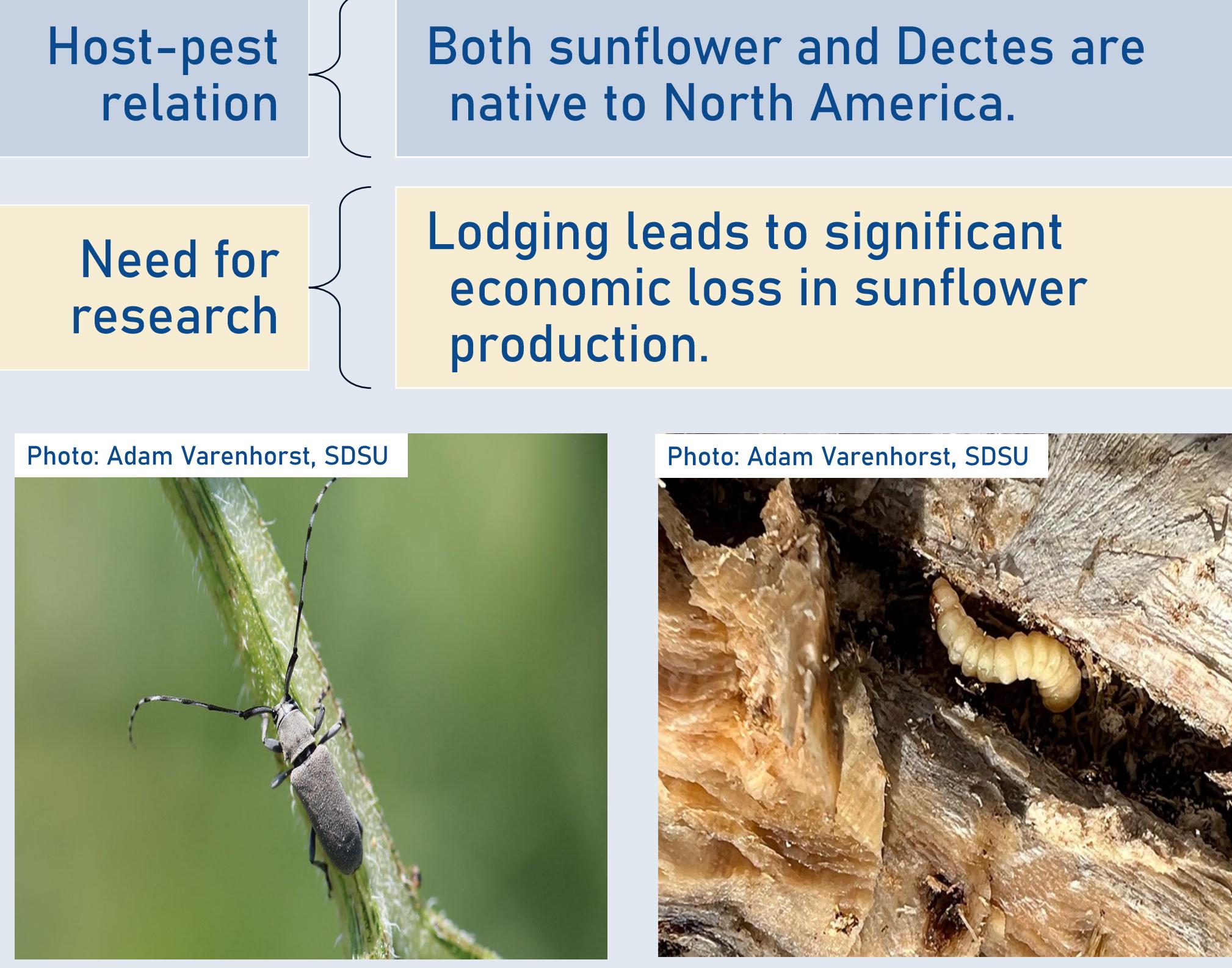


Figure 1: Adult Dectes Stem Borer.

Figure 2: Dectes Stem Borer Larva.

MATERIALS AND METHODS

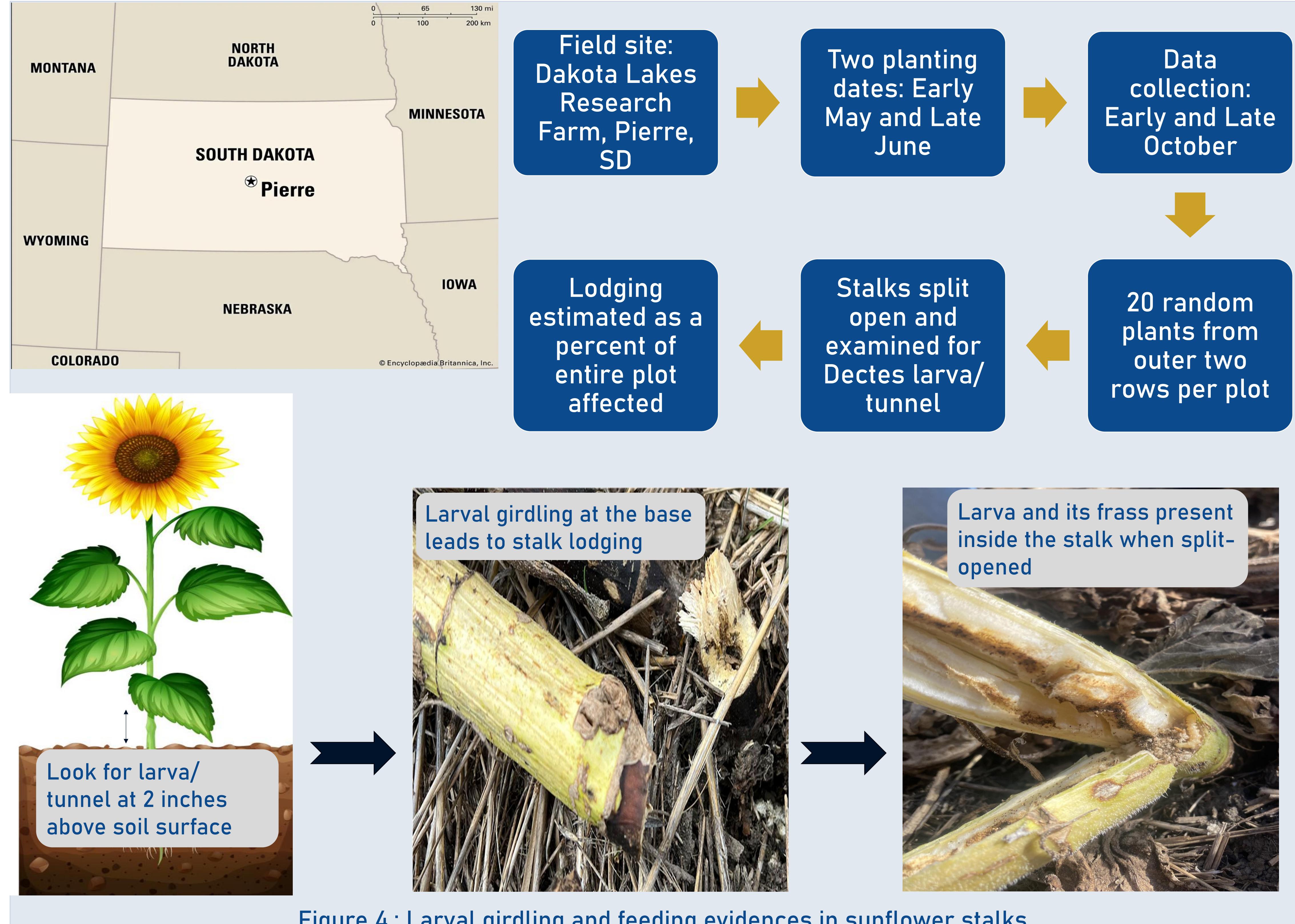
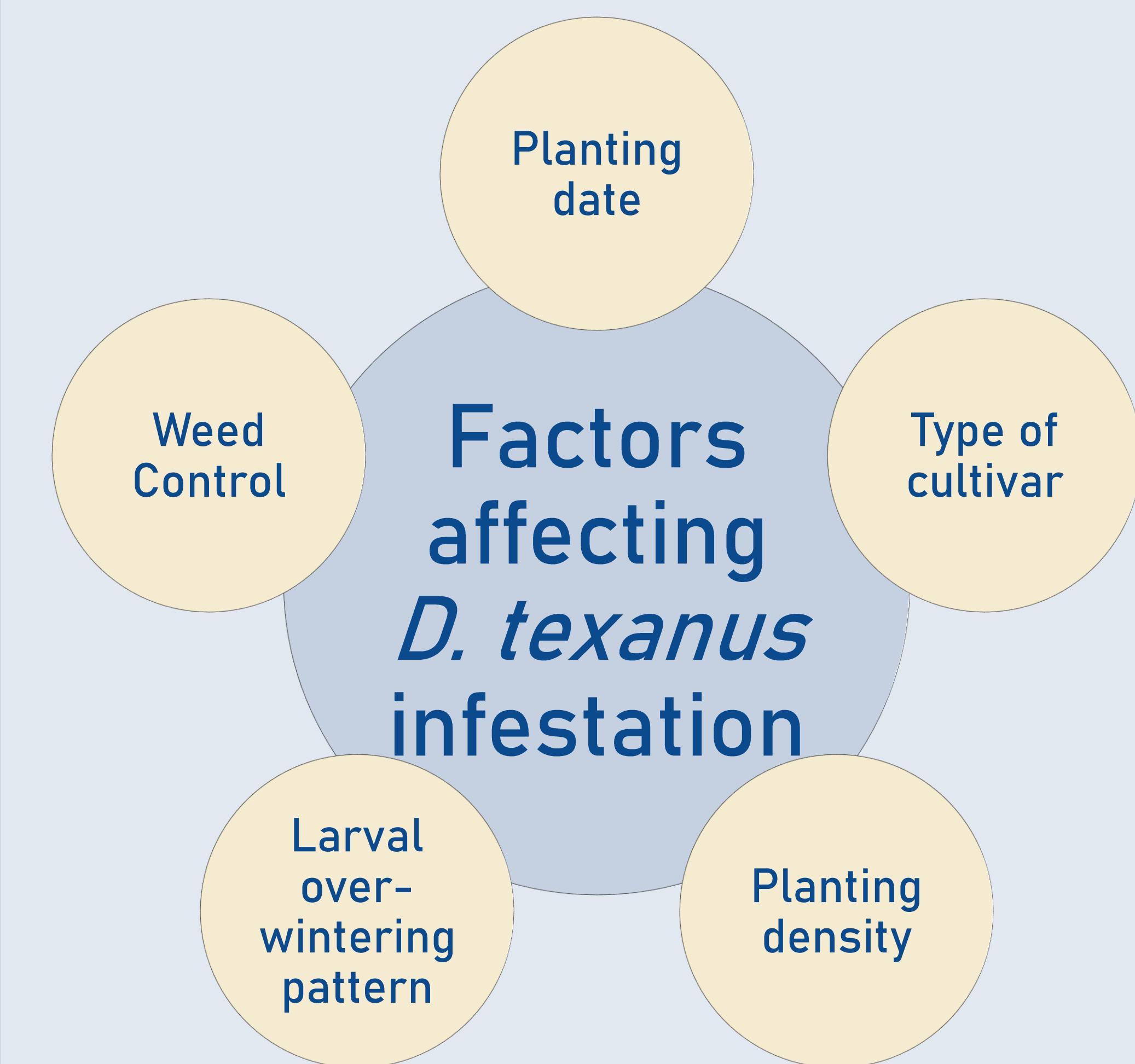


Figure 4: Larval girdling and feeding evidences in sunflower stalks.

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

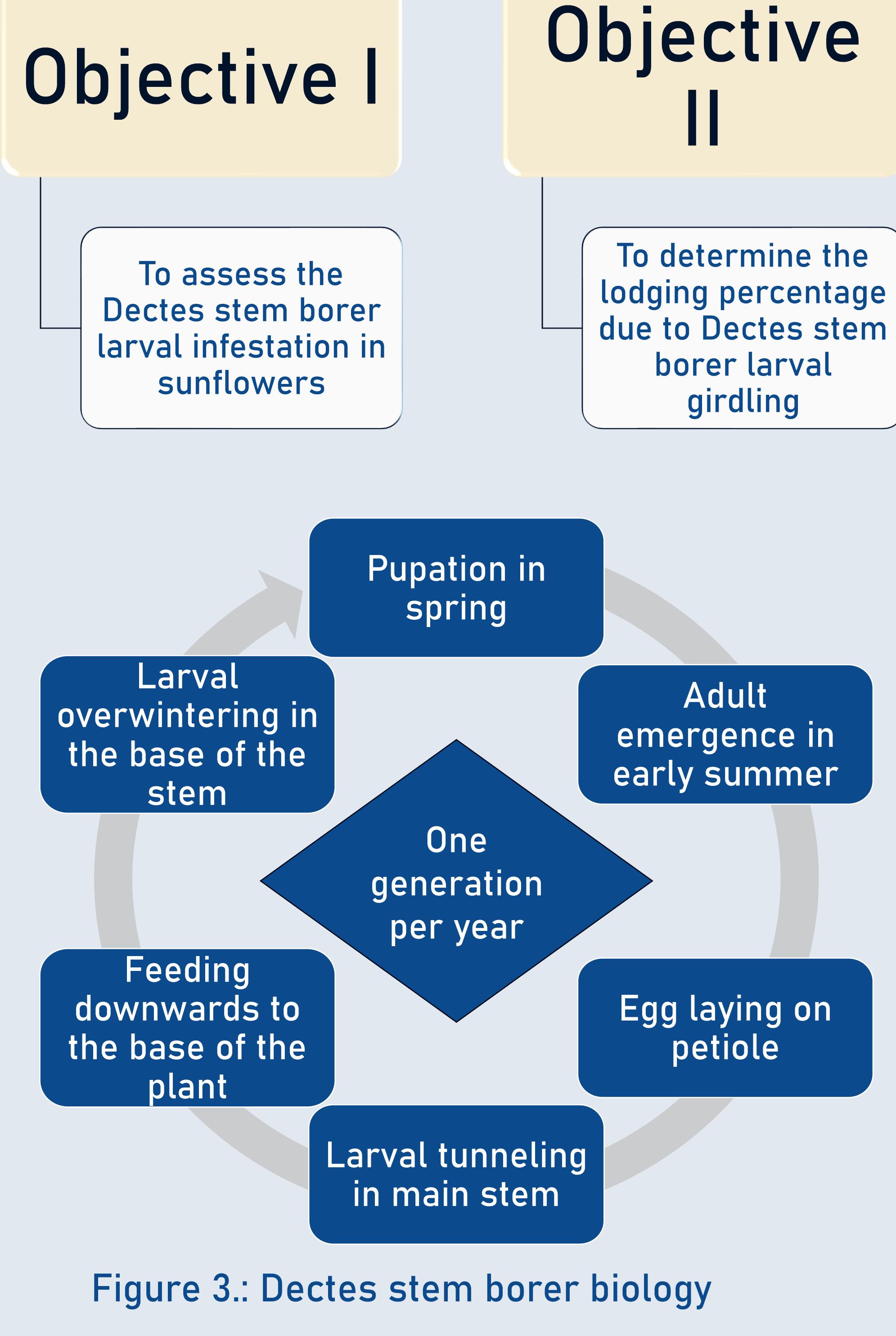


Figure 3: Dectes stem borer biology

RESULTS

2024 Dectes Infestation

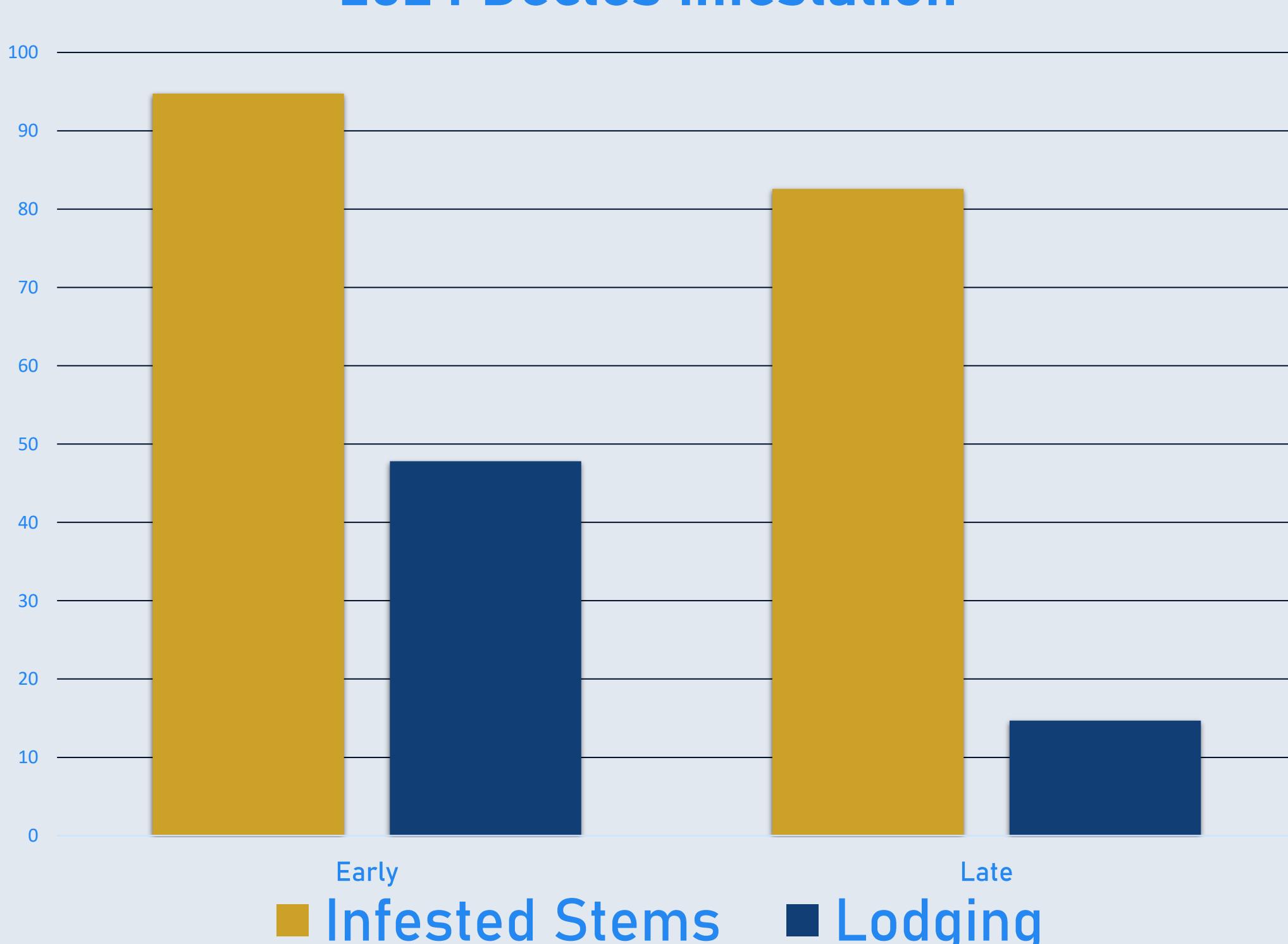


Figure 5: Dectes infestation results in 2024.

2023 Dectes Infestation

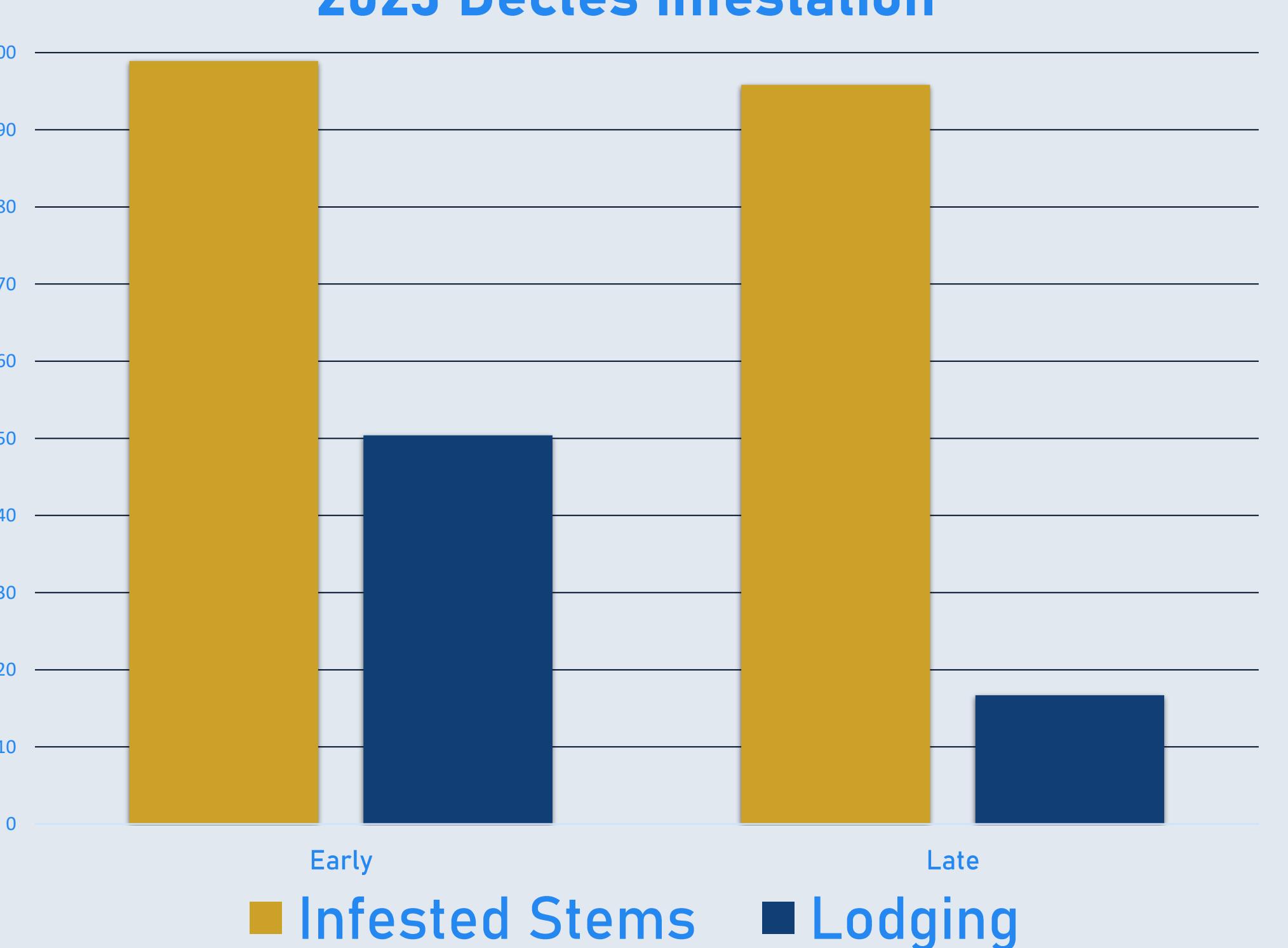
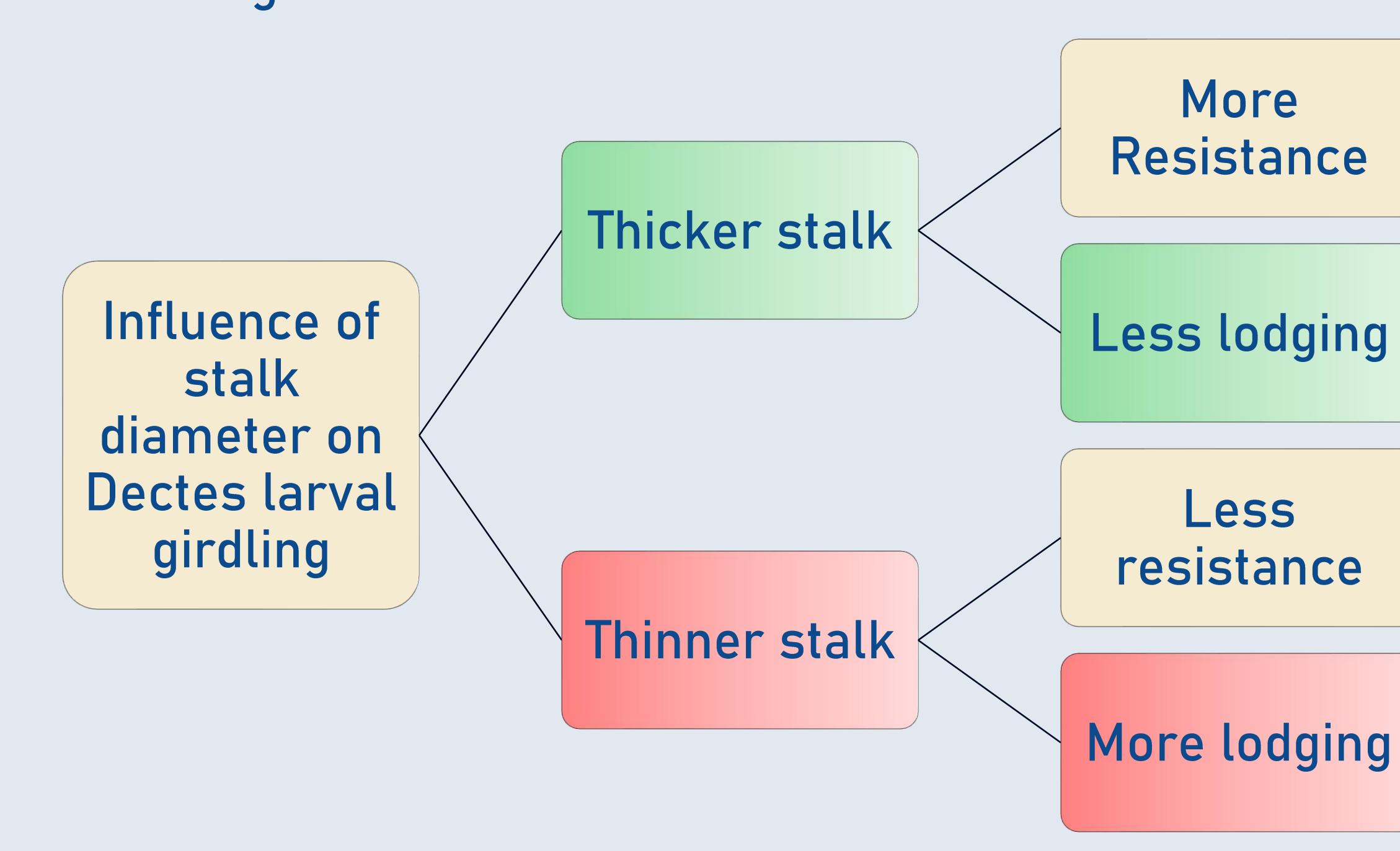


Figure 6: Dectes infestation results in 2023.

- 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.



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

- Michaud, J. P., Stahlman, P. W., Jyoti, J. L., & Grant, A. K. (2009). Plant spacing and weed control affect sunflower stalk insects and the girdling behavior of *Dectes texanus* (Coleoptera: Cerambycidae). *Journal of economic entomology*, 102(3), 1044-1053.
- Rogers, C. E. (1985). Cultural management of *Dectes texanus* (Coleoptera: Cerambycidae) in sunflower. *Journal of Economic Entomology*, 78(5), 1145-1148.
- Charlet, L. D., Aiken, R. M., Meyer, R. F., & Gebre-Amlak, A. (2007). Impact of combining planting date and chemical control to reduce larval densities of stem-infesting pests of sunflower in the central plains. *Journal of economic entomology*, 100(4), 1248-1257.