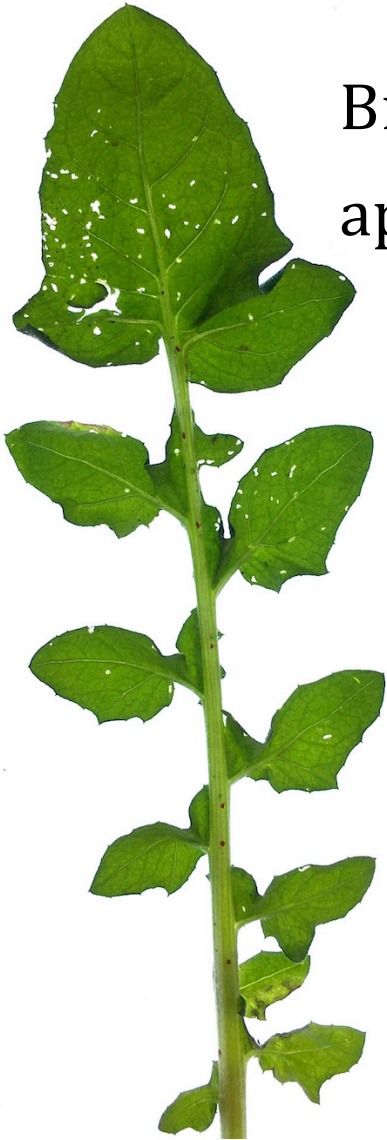


Biocontrol of yellow starthistle: Mass-rearing the newly approved agent, *Ceratapion basicorne*, for release

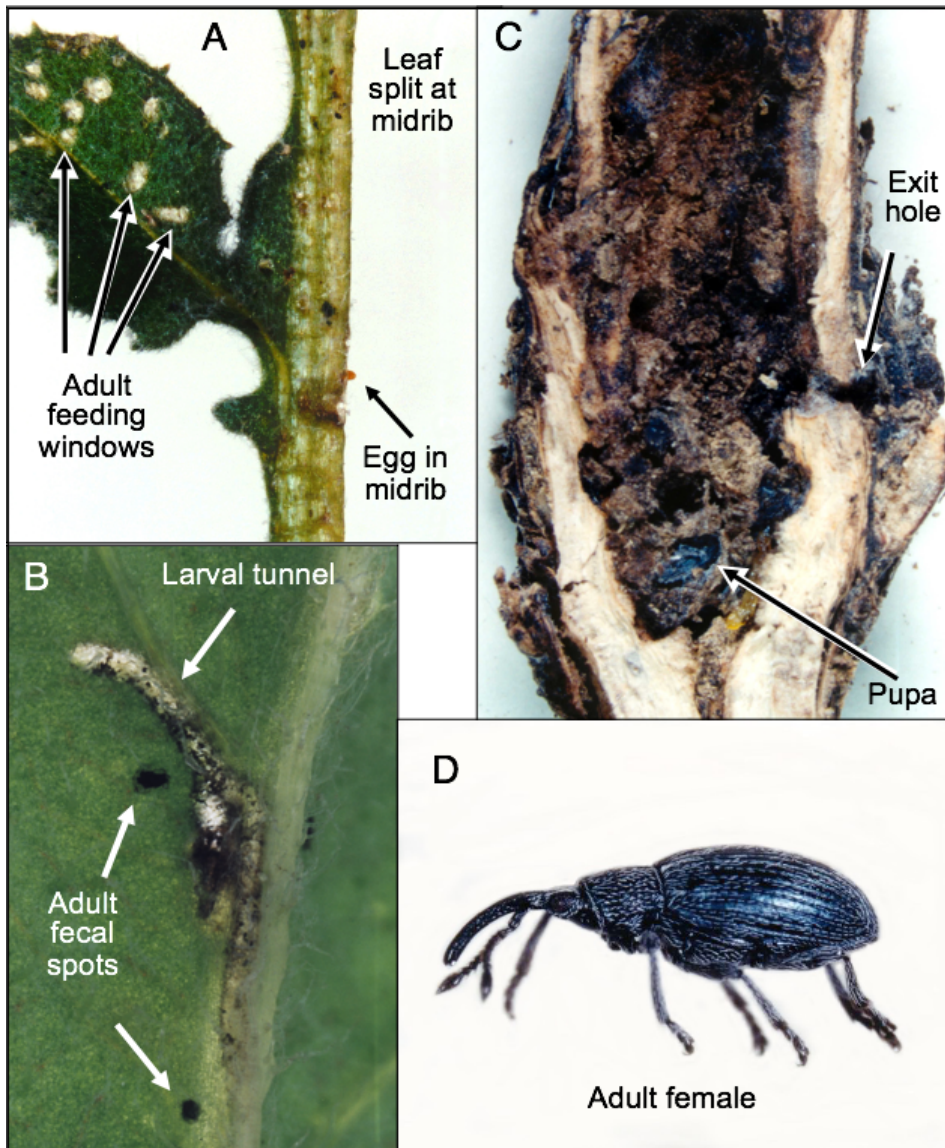


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Life cycle of *Ceratapion basicorne*

- Oviposits in rosette leaf
- Larvae tunnel into upper root
- Pupates inside plant
- Adults emerge as plant bolts
- Adults in diapause until following spring

Multiplying *Ceratapion basicorne*



New agent: YST rosette weevil (*Ceratapion basicorne*)



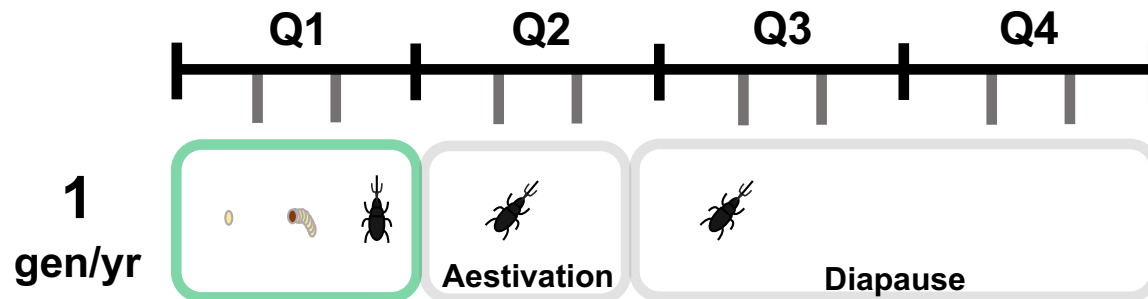
How to accelerate
the adult rearing
process?

approved in 2019 / One generation per year / slow to multiply for release

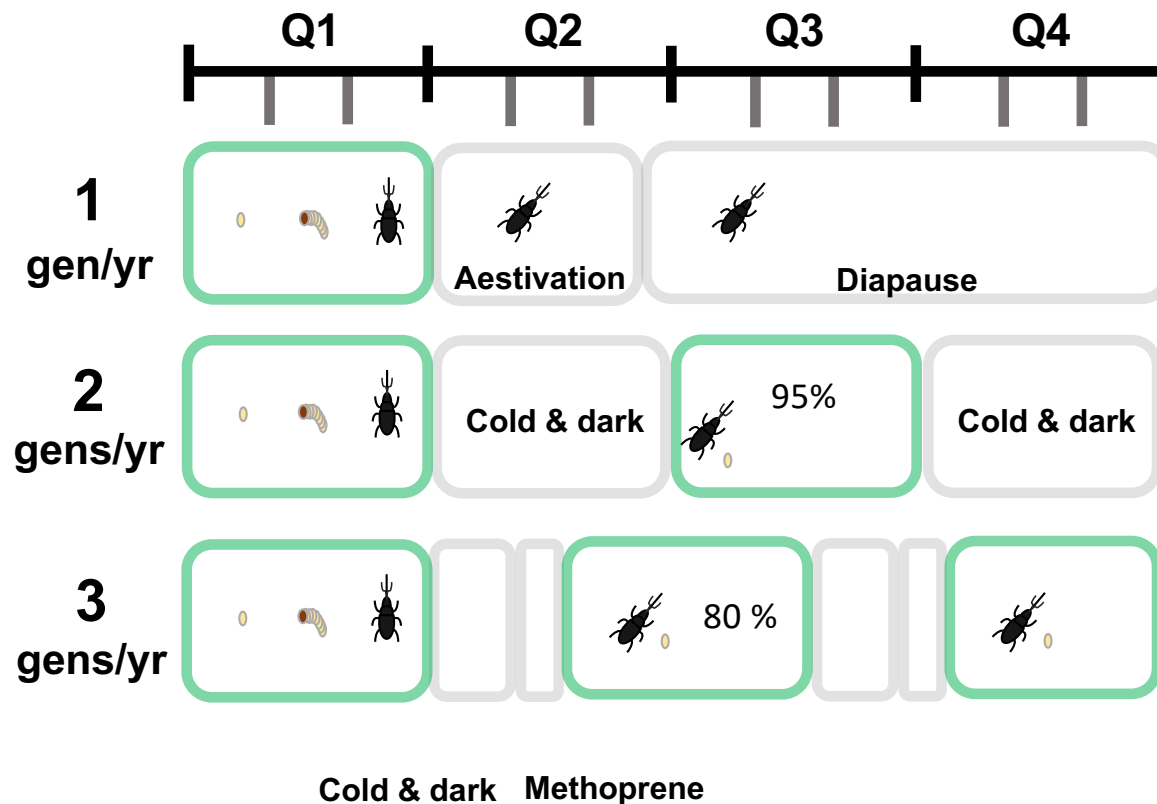
Research objective

Manipulating diapause to produce multiple generations per year

Approaches: cold-dark conditions & hormone analogs



Artificial environmental condition & hormones
= multiple generations per year



Conclusion

Rearing two generations per year would increase the production of adults by approximately 35 fold.

The protocol will be implemented for stakeholders to receive more weevils that suppress YST populations in California.

The weevil was first released in Solano county in April 2020.

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