

# Lab3

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# CPB Life History

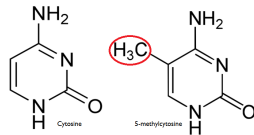
- Complete metamorphosis (Homometabolous)
- Females can lay up to 400 eggs in one season
- 4 larval stages known as instars
- 4th instar larvae burrow into soil where they pupate
- Adults emerge from soil and find host plants



# Insecticide Resistance

- Evolved resistance to over 55 compounds
  - Resistance reported for both conventional and organic compounds
  - Mechanisms for resistance
- 
- I Target site mutations
  - II Increased metabolic excretion rates

# Stress and Epigenetics



Environmental factors such as stress...

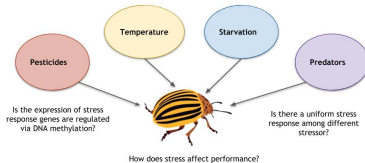
may play an important role in rapid evolution of adaptive traits...

via epigenetic processes like DNA methylation

# Research Questions

- Is the expression of stress response genes are regulated via DNA methylation?
- How does stress affect performance?
- Is there a uniform stress response among different stressor?

How does environmental stress influence the extent to which CPB rapidly adapt to unfavorable conditions?



# Experimental Design

Testing the effects of temperature and insecticide resistance on performance in CPB

