

Lab3

Erika Bueno

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Table of Contents

- I CPB Life History
- II Insecticide Resistance
- III Stress and Epigenetics
- IV Research Questions
- V Experimental Design Flowchart

CPB Life History

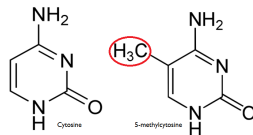
- Complete metamorphosis (Homometabolous)
- Females can lay up to 400 eggs in one season
- 4 larval stages known as instars
- 4th instar larvae burrow into soil where they pupate
- Adults emerge from soil and find host plants



Insecticide Resistance

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

Stress and Epigenetics



Environmental factors such as stress...

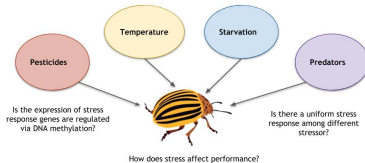
may play an important role in rapid evolution of adaptive traits...

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

