**Undergraduate Summer Project 2018**

**LN 🡪 Wandering Stage 🡪 P**

***Wandering stage*** involves slowing down of feeding and development

**Larvae Allocation:**

1. **Maintenance** 
   1. Metabolic processes, immunity, etc.
2. **Somatic Growth**
   1. Tissue growth, development
3. **Storage**
   1. Energy reserves for later life stages

*Slowing down of maintenance 🡪 effect on metabolic activity*

*Variation in somatic growth 🡪 effect on size and physical state of larvae*

**ECB Storage:**

Decrease diet 🡪 Decrease maintenance 🡪 Decrease somatic 🡪 Increase storage (Insurance)

Decrease diet 🡪 Decrease maintenance 🡪 Decrease somatic 🡪 Decrease storage (Shock, slow-down)

Decrease diet 🡪 Increase maintenance 🡪 Increase somatic 🡪 Decrease storage (Rush to next stage)

Decrease diet 🡪 Increase/Decrease maintenance 🡪 Increase/Decrease somatic 🡪 Stable storage

Results will show the trade-off between ***Digestion vs. Ingestion***

**Parameters to Consider:**

Independent Variable 🡪 Treatment: diet amount

Dependent Variable 🡪 Timing of wander

Weigh diet limit (pre-weighed diet for trays)

-Need to consider if they will eat their own poop

1 strain, climate controlled

Observation timing

5th Instar 🡪 Start treatment

Daily monitoring (use historical data as reference)

Synchronize worms at 5th instar using protocol

1. 5th Instar ad libitum
2. Starve 30 minutes-1 hour
3. Pre-weighed diet

**Design:**

***Start diet at 5th Instar***

Day

1 Tr 10 larvae 🡪 Empty trays

2 Tr 10 larvae 🡪 Empty trays

3 Tr 10 larvae 🡪 Empty trays

4 Tr 10 larvae 🡪 Empty trays

5 Tr 10 larvae 🡪 Empty trays

6

7

8

9

10