



# Maximizing the effectiveness of mosquito chemical attractants using *Drosophila* as a model.

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**1-octen-3-ol attracted more *Drosophila* within 10 minutes of exposure. However, the calculated p-value was greater the significance level.**

## Graphical Abstract

Millions of people every year are affected by mosquitoes

Some species of mosquitoes blood-feed on humans

There are already several different methods of controlling mosquitoes. However, no optimal method has been developed.

## Researchable Question

Does utilizing a chemical attractant, like 1-octen-3-ol, of mosquitoes, make mosquito-killing devices more or less effective at attracting and killing mosquitoes?

## Hypothesis

The hypothesis of this project is that since 1-octen-3-ol was found to have the highest individual attractancy rating, it will also be the most attractive when present in an environment with other odors.

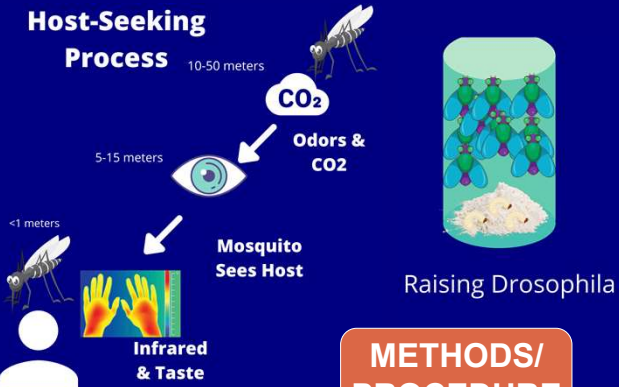
## Results- Data Table

Trial #	Time (mins)	0	5	7.5	10
1	1-oct.	0	3	6	8
	control	10	8	7	7
2	1-oct.	0	2	3	4
	control	3	2	3	2
1	lac. ac.	1	4	4	5
	control	3	4	3	4
2	lac. ac.	2	3	4	4
	control	2	1	2	2

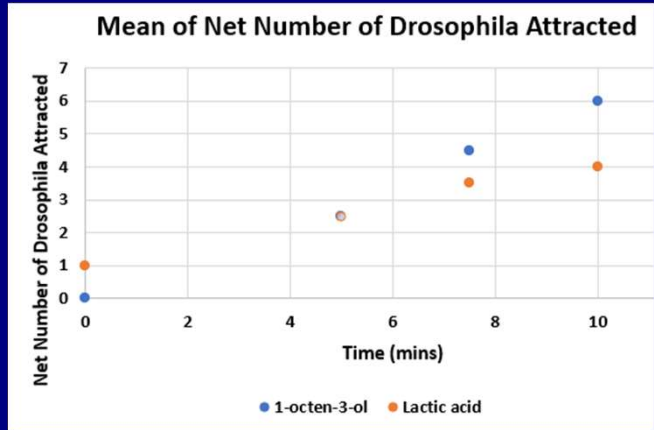
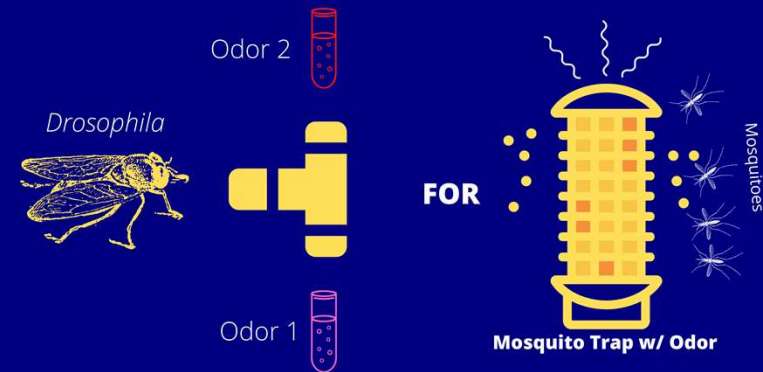
**Summary of Conclusions**  
Based on the data acquired through the trials, 1-octen-3-ol was found to attract more *Drosophila* in a 10-minute time span. Out of a total of 15 *Drosophila*, 1-octen-3-ol attracted an average of 6 of them. However, the p-value after performing a one-tailed paired t-test was calculated to be equal to 0.102416, which is greater than the significance level. Therefore, it is not certain whether 1-octen-3-ol is expected to attract more *Drosophila* than lactic acid every time.

## Background

### Host-Seeking Process



## METHODS/ PROCEDURE



## Future Extensions

- More trials and different chemicals
- Incorporate into mosquito traps
- Make available for widespread usage
- Test effectivity in environment

## Research needs to be done on...

- Chemical's effect on the environment
- How to incorporate chemical into electrocution trap
- Method to disperse odor and manual for how to use
- Effectiveness of other traps

## References

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## Results

- 1-octen-3-ol attracted more *Drosophila* when compared to lactic acid after 10 minutes
- 1-octen-3-ol was more effective at attracting *Drosophila* throughout the 10-minute period