

Project: Insects Lights Experiment

Name: Lux

Question:

Are night insect attracted to heat or lights?

Background Information:

If you are book reader you might have this experience where you turn on the lamp at night to read books and of course you might not be able to read for a long time because all those annoying insect come toward the lamp, you, and your book. If you spend much time at night you will see some of the insect attracted to the street light, house light, or campfire flame. One of the most popular theories scientist and people is that they think that the insects are attracted to lights because they use the light to navigate them self. But some said the insect attracted to light because of the heat of the light. To make the an appointment to this topic we first need to know the relationship between heat with insects and light with insects.

Like humans, insects are restricted by temperatures. An insect placed on a surface with a range of temperatures that includes dangerously cold and dangerously hot temperatures will move to find its ideal spot. Insects have a wide array of sensory hairs, sensilla, that give them information about the temperature. For biting insects like mosquito can feel heat by the carbon dioxide, that why the mosquito seem to bite at the most blood part of our body because carbon dioxide stay in our blood so the mosquito can find our blood by feeling to heat of carbon dioxide in our blood.

Yes the insects can see light but they not see as what we see. Most insect have compound eyes, Which are equipped to distinguish colors. This mean they have just two types of color pigment receptors, and, as a result, they are not so good at distinguishing pour colors form mixtures of colors. But some trichromatic insects, such as honeybees, have three types of pigment receptors, like we humans do. They can distinguish a wider spectrum of colors than bichromatic insects. However, their three pigment receptors do not coincide with ours. The spectrum of colors visible to insects is a little higher in frequency than what we humans can see. The lowest frequency of color we see is red but it invisible to insects. Oppositely, while violet light is the highest frequency of color human can detect on the electromagnetic spectrum, many insects can see a higher frequency of light invisible to us, ultraviolet light.

Hypothesis:

The insects will be attracted to the light because they easily see the light then feel the heat.

Experiment or Design:

Materials:

- Electric Lantern (Light)
- Gas Lantern (Heat)

Procedule:

1. Wait until night where insect come out most.
2. Place the lantern 1 meters apart.
3. Monitor both lantern.
4. Do an observation on both lantern, which one get more insect or count the number of insect for the data and graph

Materials:

- Light source
- Heat source

Procedule:

- Wait until night where insect come out most.
- Place the light source and heat source about 1 meter apart.
- Make sure the heat source and light source are doing their job
- Do an observation on both experiment, which one get more insect or count the number of insect for the data and graph

Data Charts:

Swimming Pool

Object	5min	10min	15min	20min	25min	30min	Total
Light	8	11	13	10	13	10	65(around 3 different types insects)
Medium Hot water	0	0	2	0	1	0	3(die in the water)

At Home

Object	5min	10min	15min	20min	25min	30min	Total
Light	5	7	4	58	9	6	39
Candle	0	1	0	1	2	0	4

At home

Object	5min	10min	15min	20min	25min	30min	Total
Light	4	6	9	11	7	8	45
Candle	1	0	2	1	1	0	5

Results:

The experiment was done three times in two different places. One of the experiments done in the swimming pool and also have the biggest number of insects attracted. The second and the third experiment done at the same place (home) but different date. All of the experiments take 30 minutes and do one minute observation in every five minutes. The first experiment has a total of 65 insects attracted to light and total of three insects attracted to the medium hot water. The second experiment has a total of 39 insects attracted to light and 4 insects attracted to candle. The third experiment has a total of 45 insects attracted to light and 5 insects attracted to candle.



Conclusion:

The first experiment has a total of 65 insects attracted to light and total of three insects attracted to the medium hot water. The second experiment has a total of 39 insects attracted to light and 4 insects attracted to candle. The third experiment has a total of 45 insects attracted to light and 5 insects attracted to candle. The hypothesis is right because as the result showed the insect is most likely attracted to light. This shows that the insects that attract to some light on street or at your home aren't attracted heat that the light have. This investigation raise another question which is why do insects attracted to light(only light sauce)?

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Source

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