

Jackass Bitters, *Neurolaena lobata*

I. Introduction

As I read about the medicinal plant *Neurolaena lobata*, or more commonly named Jackass Bitters, and its use as an insecticide on diseased plants and the treatment of malaria (Arvigo and Balick 1998) I wanted to prove its use as a border pesticide. Some evidence has shown its leaves contain an anti-parasitic agent (sesquiterpene dialdehyde) that is active against amoebas, *Candida*, and intestinal parasites {Wagner, 2000}. The sesquiterpene's content is also associated with activity against insects such as mosquitoes {Drugs.com}. *N. lobata* has been used for the eradication of mosquitoes that carry malaria {Walsh, 2003}. Because Jackass Bitters leaves have an extremely bitter taste, it can also be used as an insect repellent {Discovery Channel, Dual Survival, 2010}. It stands to reason that Jackass Bitters could be used as a border pesticide around a home to prevent pests from entering.



II. Methods & Materials

1. Gather a few leaves from the Jackass Bitters plant.
2. Break up the leaves into small pieces and weigh them out to 5.3 grams.
3. Grind them up using the mortar and pestle to excrete the moisture from the leaves.

4. Add 30 ml of stream water to the ground up leaves to form a liquid concoction.

The liquid had a greenish tint that resembled a commercial poison.

5. The total materials used were one mortar and pestle, a scale, a 1ml pipette, 5.3 grams of Jackass Bitters leaves, and 30ml of stream water.

Due to the large amount of black ants roaming the field lodge, they were my pest of choice for my experiment. Instead of trying to lure the ants with bait, I found a trail of ants marching off the leaf of a palm tree onto the wooden ledge of the deck. Because the ants were walking in both directions, it was the perfect setting to place my Jackass Bitters mixture and interrupt their path. I used the 1 ml pipette to soak up the greenish liquid and released it onto the wooden plank. It wasn't quite enough to saturate the whole width of the wood so I used one more ml of the Jackass Bitters, totaling 2ml. This formed a rectangular shaped spot about 3 inches long and almost the whole width of the board, approximately 2 inches wide. As soon as the wood was soaked with the liquid, the ants immediately began turning around. It didn't matter which direction the ants were going, they avoided the greenish wet spot on the wood. Some ants did manage to find a narrow strip along the edge of the board where the Jackass Bitters did not spread out, and they were able to cross it in a hurry. However, the majority of the ants crossed on the outside or the underside portion of the board avoiding the Jackass Bitters altogether (as shown in pictures).



III. Results

I began the experiment at 4:00 p.m. and after one hour the ants were still avoiding the tainted area. Very few ventured across the narrow gap left where the liquid did not spread. The color of the saturated wood changed to a light green, making it easy to see the border where the ants were not crossing. Two hours after the first drops touched the wood, approximately 6:00 p.m., the ants were still not crossing the green patch. At 6:00 a.m. the next morning, I checked the green border and the ants, while still avoiding the majority of the test area, were crossing the narrow gap in greater numbers. By 5:00 p.m., the green color had faded, and ants were crossing the entire area with no hesitation.

IV. Conclusion

I feel I proved my hypothesis was correct because I observed the ants instantly avoiding the Jackass Bitters by finding alternate routes or completely turning around. Because I tested a small area it only required a little amount of Jackass Bitters to block the ants. Perhaps the border pesticide could be tested again by using a higher concentration of stock liquid across a larger area to find out if the poison would last longer than 24 hours. Also, due to the anti-malarial and anti-insect agent contained in its leaves {Drugs.com} one may even theorize the Jackass Bitters could repel insects other than the black ants.

REFERENCES

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