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Correlations Between Effects of Recognition Factors and
Feeding Habits of Yamato Termites

Abstract

We focused on the cannibalistic behavior of Yamato Termite against individuals with surface trauma, and researched the recognition factor used in this behavior. The results showed that there is a correlation between the effect of the factor and the feeding habit and nutritional status of the termites, and that the factor is non-volatile.

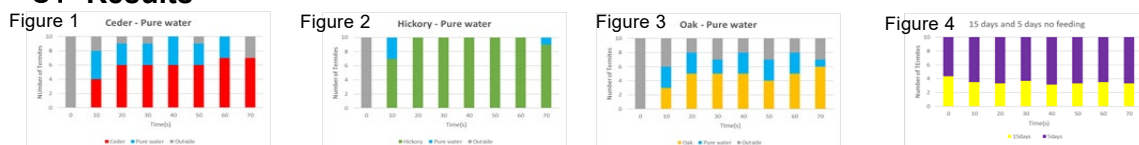
1. Introduction

We investigated whether the effects of substances in bodies of Yamato termite (*Reticulitermes speratus*) differ depending on the type of feed. Preliminary experiments have shown that there are substances in termites' bodies that attract other individuals. Based on previous studies, this substance is some kind of chemical used to recognize other individuals in cannibalistic behavior. We investigated this recognition factor.

2. Theory and Experiment

We prepared mixtures containing the body fluids of termites placed in cedar, oak, and hickory. We observed the effect of the mixtures on the attraction of other termites (Experiment 1). We also prepared mixtures containing the body fluids of the termites which were not fed for a while, and observed the difference in the attracting effect of the mixtures depending on the length of time the termites were not fed (Experiment 2).

3. Results



Figures 1-3 show the results of Experiment 1. Figure 4 shows the results of Experiment 2.

4. Discussion

Experiment 1 showed that different types of wood produced different attracting effects. Experiment 2 showed that the attracting effect decreased with the length of the foodless environment. This suggests that the effect is influenced by the metabolic activity of the termites. In addition, it was not confirmed from both experiments that the effect decreased as the time of feeding elapsed. Therefore, the factor is considered to be non-volatile.

5. Conclusion

Although previous studies have indicated that this factor may be hydroquinone, we cannot determine what it is from this study alone. However, there are similarities between the properties of hydroquinone and the recognition factor, so further research is needed.