

# Red is the New Black

*When presented with the option to discriminate between the red adzuki bean and the black-eyed bean, the female *Callosobruchus maculatus* will choose the red adzuki bean.*

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## Introduction

The bean beetle, *Callosobruchus maculatus*, is a small brown beetle that exclusively lays its eggs on beans. Different beans may provide different nutritional values for the emerging larvae, and in this study we used red adzuki and black-eyed beans. Red adzuki bean is the natal bean of the bean beetles in this experiment.

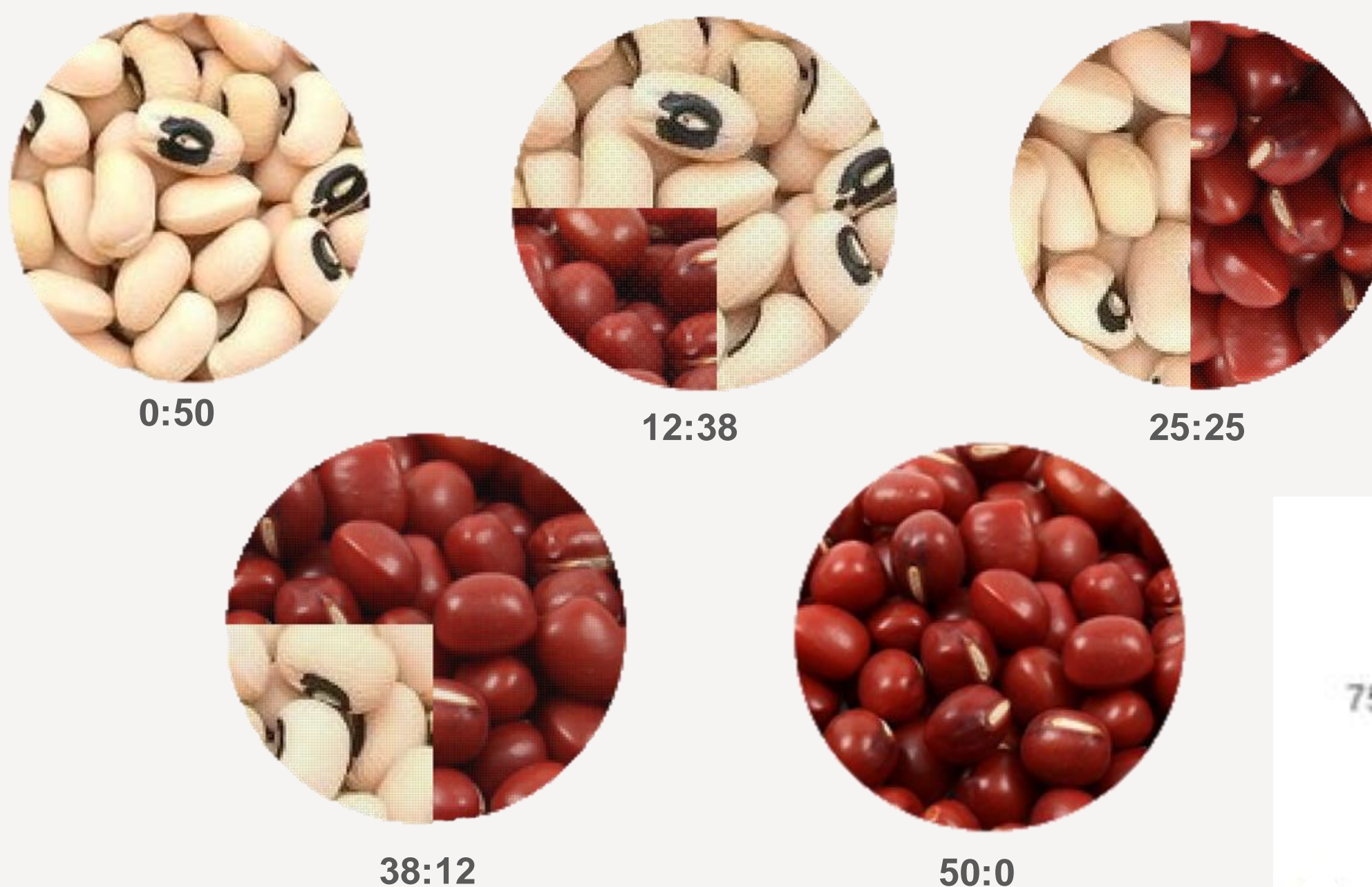
Which beans will the female bean beetles lay their eggs on?

**We predict that the female bean beetles will lay their eggs on the red adzuki beans because it's their natal bean.**



## Experimental Design

We put a pair of bean beetles in petri dishes with **five different rates of red and white beans**. The ratios used can be seen on the figure below. After two weeks the eggs were counted.



## Results

The results show that the **female beetles preferred the red adzuki bean (AB)** over the black-eyed beans (BE), even in dishes with a higher ratio of BE. Running statistical analyses (generalized models with Poisson distribution) we found that number of eggs deposited on AB compared to BE was statistically significant ( $p$ -values  $< 0.05$ ).

## Discussion

The female bean beetles preferred the red beans as a higher number of eggs were deposited on them compared to white beans. The preference could be a **response to the cultivars** where these individuals were raised, as they all originate from red adzuki beans.

However, whether the red bean is preferred due to **natal preferences or bean-quality**, needs further investigation.

