

Does *C. maculatus* have a preference for their natal bean when laying eggs?

Introduction :

The bean beetle, *Callosobruchus maculatus*, or cowpea weevil, is usually found in tropical and subtropical parts of Africa and Asia, and is considered an agricultural pest insect.

Aim: Two separate strains of beetles, one from black eye peas and one from mung beans, were used to investigate whether the bean beetle, *C. maculatus*, will have a general preference for its natal bean type when laying eggs.

Research question:

- On which beans does the beetles lay more eggs?
- Does natality have an effect?

Experimental design :

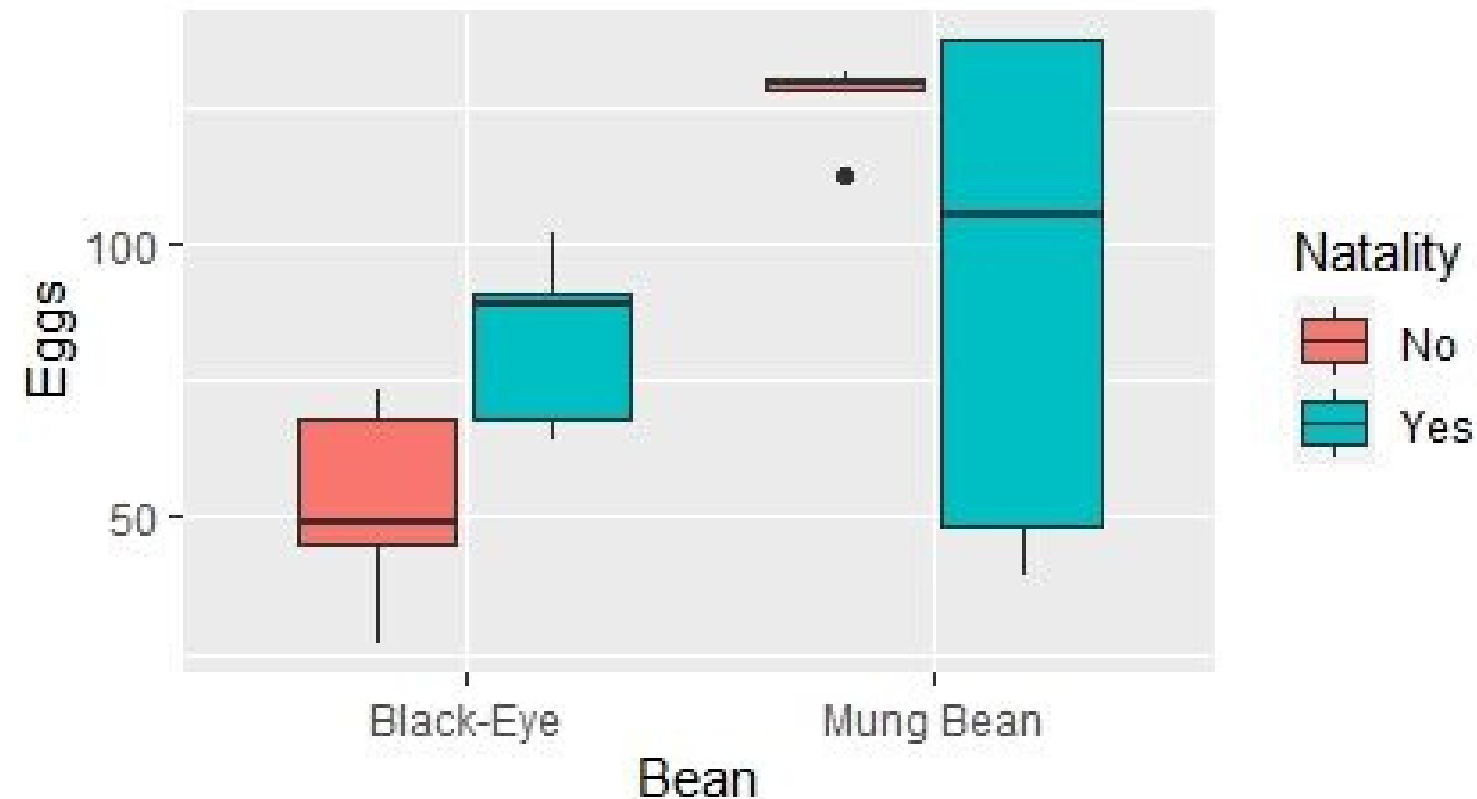
Mung bean (*Vigna radiata*) & Black-eyed pea (*Vigna unguiculata*) native beetles

Placed in ten petri dishes:

- 6,35g of each bean type
- Mung bean native beetles in five of them, black-eyed pea beetles in the five others.

After the beetles laid their eggs (approximately seven days), they were removed and the eggs on each bean type were counted.

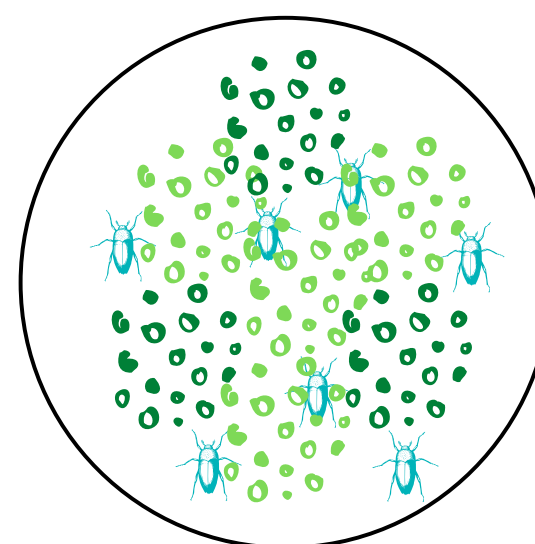
Results :



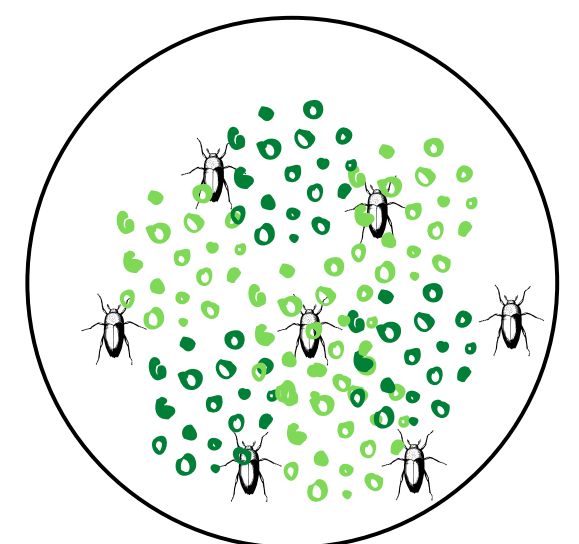
Both strains of beetles laid more eggs on the mung beans $0,01 < p < 0,05$.

There was no statistical difference in the number of eggs on natal vs non natal beans.

Mung bean native



Black -eyed peas native



Sources of errors :

- Unforeseen circumstances
- Change of objective during experiment
- Human errors

Discussion and conclusion :

Beetles laid more eggs on the mung beans than the black-eyed peas and that natality had no effect.

- Black-eyed peas are larger, with higher nutrient levels per bean, the females chose to lay the majority of their eggs on the mung beans
- Might be due to the quantity of beans
- Mung beans are smaller in size but larger in numbers, meaning that the beetles have the opportunity to lay fewer eggs per bean
- Thus, the larvae feed on the bean during development, and avoiding competition over resources from other larvae can be advantageous.

This means that given the choice, our beetles preferred the black-eyed peas regardless of natal strain.



Black-eyed peas

Mung bean

