B-99: Effect of botanicals as protectant of cowpea and greengram seeds against the pulse beetle *Callosobruchus maculatus*

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Powdered leaves of neem, gardenia bud and citrus peel were assayed for their ovicidal and protectant properties against the bruchids C. *maculatus* on greengram and cowpea under laboratory conditions at the Eastern University during the period April 1992 to July 1992 and their effect on the mortality, oviposition, hatchability and emergence rate of *C. maculatus* was compared with untreated control.

The botanicals used, increased the mortality of *C. maculatus* by 50% compared to the control.

Citrus peel powder (0.8 g/100 seeds), reduced the oviposition of *C. maculatus* by 65% and 45% on greengram and cowpea respectively. Cowpea treated with gardenia bud (0.8 g/100 seeds) reduced the oviposition by 60%. However, a higher concentration (1 g/100 seeds) was required to reduce the oviposition of *C. maculatus* by 66% on greengram. Cowpea treated with neem leaf (0.4 g/100 seeds) reduced the oviposition of *C. maculatus* by 42%. Greengram seeds treated with neem leaf (0.2 g/100 seeds) caused 50% reduction on the oviposition.

Citrus peel powder (1 g/100 seeds) reduced the hatchability of *C. maculatus* eggs by 31% and 25% on cowpea and greengram respectively. Cowpea and greengram seeds treated with gardenia bud showed 13% and 22% reduction of hatchability, respectively compared to control. Cowpea treated with neem leaf (1 g/100 seeds) caused 23% reduction on the hatchability, whereas only 5% reduction was observed on the hatchability of *C. maculatus* reared on greengram seeds treated with neem leaf (0.4 g/100 seeds).

Therefore, neem leaf, citrus peel, and gardenia bud could be used to control *C. maculatus*. Citrus peel powder was the most efficient botanical of the 3 products tested, to control bruchids under laboratory conditions.