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# INTEGRATED PEST MANAGEMENT TECHNIQUES OF BLACK PEPPER SEED EXTRACTS AGAINST *CALLOSOBRUCHUSMACULATUS* (FAB.)

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**ABSTRACT**

*Cultural Control plays a key role in keeping down the number of callosobruchus maculatus(F.) carry-over between cowpea seeds. The use of chemicals in agriculture fields for the management of various insect pest populations created many unwanted effects. Present study was based on integrated pest management techniques.*

***Keywords:*** *Callosobruchus Maculatus*, *Black Pepper*, *Antifeedent Activities etc*.

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## Introduction

The pulse beetle *callosobruchus maculatus*(Fab.) has consume, destroy and damage all kinds of growing crops and their valuable vegetation. In recent years, it has been realized that major emphasis should be given to plant-based grain protectants. Thus, this study is aimed at search of an eco-friendly pesticide as black pepper seed Kernel extract against *Callosobruchus maculatus.*

To combat these notorious insects, man has relied on the use of various measures such as mechanical, physical, biological and chemical control method.



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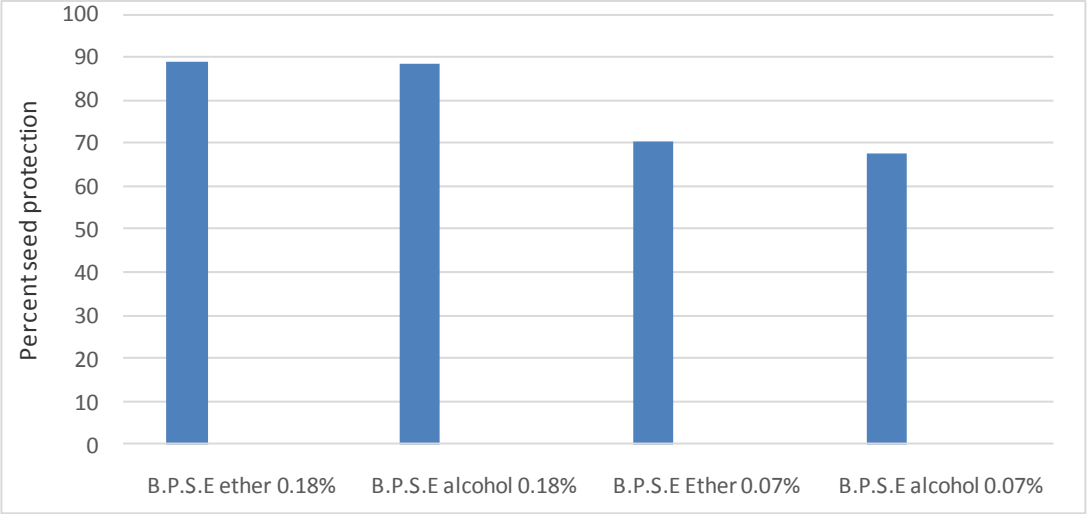
**Life Cycle of Callosobruchus maculatus**

**Methods**

Black Pepper, seed kernel extracts in ether and alcohol prepared through the soxhlet appratus. In antifeedent effect cowpea seeds were treated with two concentrations (at about 50% and minimum 100% mortality) of each extratcs of ether and alcohol. The both extracts of B.P.S.E sprayed seeds were observed till the mortality of *Callosobruchus maculatus* was seen**.**


**Graphs**

Antifeedent Effect of deposits of ether and alcoholic extracts of Black Pepper Seeds Kernel Extracts at minimum 100% and 50% concentrations.




**Results and Discussusions**

- Black Pepper Seed Kernel Extract in ether at minimum 100% mortality was found seed protection at 88.70%.
- In alcohol extract, the mortality was observed seed protection for 88.45% in lesser extent than in the ether extract.
- B.P.S.E in alcohol at 50% mortality was found seed protection 70.43%.
- In alcohol extracts, the mortality was found seed protection 67.76%.

Thus, the result show that the ether in all concentration are more effective than the alcoholic extracts.

**Conclusion**

Application of B.P.S.E has been found beneficial and alternative method to discourage the use of chemical pesticide and treating healthy atmosphere for wild and pet animals as well as for.

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