

## EFFECT OF ETHER EXTRACTS OF SOME PLANT PRODUCTS ON GERMINATION OF COWPEA SEEDS

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### ABSTRACT

*The Pulse beetle Callosobruchus maculatus is an obnoxious pest of Several pulses and cereals which constitute the major portion of human diet. Pulses are the most important source of protein. In the present study, Ether Extracts of Neem Seed Kernel, Mustard seed, Black pepper seed, Annona seed and Groundnut seed were not found to impair the germination capacity of Cowpea seeds at the dosages of 0.06% N.S.K.E, 0.16% M.S.E., 0.18% B.P.S.E., 0.20% A.S.E., 0.22% G.S.E. The dosages of plant based toxicants (Ether extracts) were found out to give minimum 100% mortality of Callosobruchus maculatus.*

**Keywords:** Cowpea Seed, Neem Seed Kernel, Mustard Seed, Black Pepper Seed, Germination.

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### Introduction

The investigation was conducted to observe the effect of different plant product treatments with ether extracts on germination of cowpea seeds. All plant product extracts in ether were in ether was used at maximum 100% mortality of *Callosobruchus maculatus*. Hence the present study is aimed to show that there was no negative effect on germination of cowpea seeds when treated with difference plant material extracts in ether. In India pulses and cereals are main part of crop production in agriculture. Germination effect of five plant product extracts in ether represented above 90% germination of cowpea seeds.



**Cowpea Seeds**

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### Materials and Methods

All plant seed extracts were prepared in ether. Extraction was done by Soxhlet apparatus for 8 hours over a heating mantle at 70 Degree Celsius temperature in petroleum ether. All plant product extracts (NSKE, MSE, BPSE, MSE and GSE) in petroleum ether were used in ether were used at minimum 100% mortality of pulse beetle. In this respect 0.06% of NSKE, 0.16% of MSE, 0.18% of BPSE, 0.20% of ASE, and 0.22% of GSE were used to treat cowpea seeds to observe to germination capacity.



Plant Products



Soxhlet Apparatus

#### Percent germination capacity of cowpea seeds after treatment of different plant products ether extract.

S. No	Name of plant Product	% concentration	Number of seed Sown	Number of seed Germinated	Percent seed Germination
1	N.S.K.E. Ether	0.06	100	91.00	91.00
2	M.S.E. Ether	0.16	100	92.10	92.10
3	B.P.S.E. Ether	0.18	100	94.10	94.10
4	A.S.E. Ether	0.20	100	94.66	94.66
5	G.S.E. Ether	0.22	100	95.00	95.00
6	CONTROL		100	100.00	100.00

Percent seed protection in control 39.40

N.S.K.E.: Neem seed kernel extract

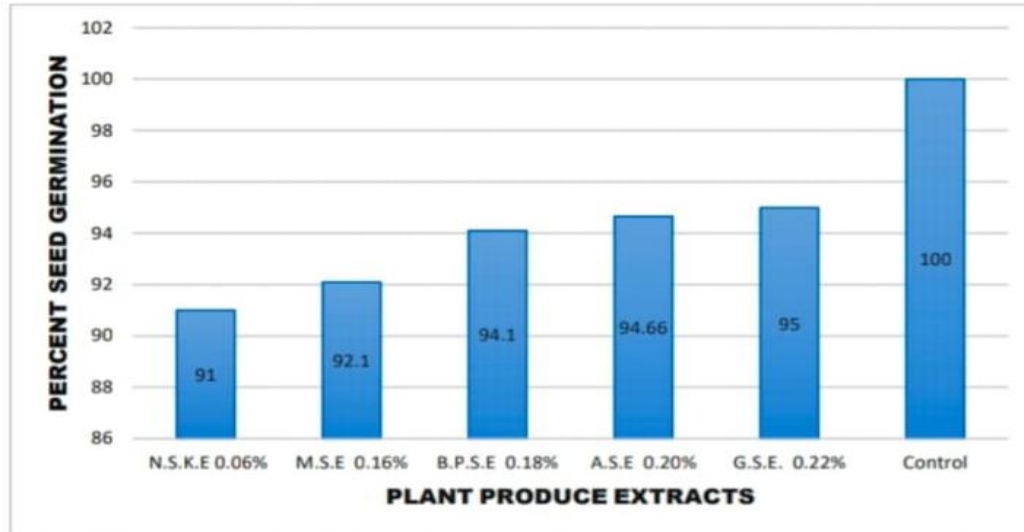
M.S.E.: Mustard seed extract

B.P.S.E.: Black pepper seed extract

A.S.E.: Annona seed extract

G.S.E.: groundnut seed extract

### Percent germination in ether extracts after treatment .



**N.S.K.E.:** Neem seed kernel extract

**M.S.E.:** Mustard seed extract

**B.P.S.E.:** Black pepper seed extract

**A.S.E.:** Annona seed extract

**G.S.E.:** Groundnut seed extract

#### Result and Discussion

- Neem seed kernel extract in ether (0.06%) resulted in 91% germination capacity of cowpea seeds.
- Mustard seed extract in ether (0.16%) was found effective to show 92.10% germination.
- With Black pepper seed extract in ether (0.18%) the germination capacity of cowpea seed was found 94.10%.
- Annona seed extract in ether (0.20%) was found effective 94.66%. for cowpea seed sprouting.
- Groundnut seed extract in ether (0.22%) showed germination capacity of cowpea seed upto 95%.
- Control experiments also conducted to see the germination capacity of cowpea seeds which was found 100%.
- Hence the percentage of germination with effect of different extracts was calculated with simple percentage formula.

#### Conclusion

The germination experiments show that there is no adverse effect of all plant extracts in the capacity of sprouting of the cowpea seeds. Hence they can be used of treatment of cowpea seeds.

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