



**EFFECT OF SOME INDIGENOUS PLANT PRODUCTS ON THE FECUNDITY RATE OF
ALMOND MOTH, CADRACAUTELLA (WALKER)**

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Ten pairs of newly emerged adult females test insect were introduced into treated grain seed jars for observing the fecundity rate. Five plant products (Powder and extract) viz., *A sativum*, *C. anthelminticum*, *G. gynadra* *T. indica* and *Zofficinalis* were mixed @ of 50 gm powder and 1.0 extract per kg of Crushed jowar seeds respectively. The results showed that *Z officinalis* was most effective in lowering the fecundity rate in both powder and extract forms.

Keywords, Fecundity, Indigenous, Almond moth

INTRODUCTION

All developing Countries face major challenges to achieve food security in a sustainable manner, Considering, the increasing load of population limited land and water resources, the most important challenge facing human kind in the new millennium is to ensure that all people have access to enough food for a healthy and productive life. Almond moth, *Cadracautella* (walker) belong to the family Pyralidae of Lepidoptera order of class insecta is a stored grain pest. In our country, the state of increase in the production of food grains is not equivalent to the rate of increase in human population. So, first step towards solving this problem is to prevent wastage of food grains during storage, Unfortunately, the climatic conditions in our country during certain months of the year are extremely favourable for the growth and development of insects in food grain stores. These stored grains pest destroys about 5% of total food production. The insecticides offer a very good control of the pest but these are directly or indirectly harmful to mankind. So, it has become necessary to evolve control measures, which may be selective in action and relatively harmless to

non-target organism and human being. Thus insecticides of plant origin are preferred over chemical insecticides because of nontoxic to human beings.

MATERIAL AND METHODS

A mass culture of test insect, *Cadracautella* (walker) obtained from I.C.A.R., Delhi) was maintained in the laboratory under controlled conditions 27.0:t 1.15 DC temperature and 70.0 : t5 percent relative humidity in glass jars their mouth were tied with muslin cloth) on crushed seeds of jowar. The bulb of *Allium sativum*, seeds of *Centrathemanthe/ minticum* and *Gynandropsisgynandra*, leaves of *Tagetesindica* and rhizomes of *Zingiberofficinalis* were dried in shade and powdered with the help of common domestic grinder, passed 30 mesh sieve and used for experimental treatments. The extraction of various plant materials was carried out with the help of soxhlet apparatus and by using petroleum ether B.P. (40-60⁰C), benzene and triton water (x-100) as chemicals. To observe the various botanical indigenous plants insecticides on fecundity of almond moth, the powder and extract were mixed with jowar seed as treatment in the ratio of 0.5., 1.0 and 2.0 parts per 100 parts of the seeds. The adults thus emerged in glass jowar were then transferred in egg laying apparatus for the collection of eggs laid by the newly emerged females. The number of eggs laid was recorded with the help of 10 x handlens. The data collected were subjected to the "Analysis of Variance" and result obtained have been summarized in Table.

Observation Table

Average Number of Fecundity rate (eggs laid by 20 Female Cadracautella (Walker)

Results and Discussions

It is obvious from the Table that fecundity (in the form of egg laying) rate was inhibited by plant materials. Extract from of all the plants material at different concentrations in general proved superior to powder from *Z. officinalis*, in extract from at 2.0% concentration seeds, less number of eggs were laid (29 eggs) as compared to other treatments which are at per with *A. sativum*, *C anthelmintieum*, *Ggynandra* and *T. indica* were 79.00, 63.35, 64.00, 72.18 eggs at 2% concentration in of extract, respectively. Egg laying on the grain treated with *A. sativum* and *T. indica* did not differ significantly in powder treatments. The ten number of egg were laid (33.40) in *Z officinalis* at 2% concentration again. Eggs layng on other grain treatments *A. sativum* *C. anthelmintieum*, *G. gynandra* and *T. indica* at 2% csoncentration were 82.00, 78.98, 66.00 and 74.28 eggs, respectively. Egg laying in the grains treated with powders and extracts did not differ significantly. The rate of egg laying decreases with increasing the concentration of powder or extract of plant products. The egg laying was recorded (125 eggs) in untreated grain (control) i.e. maximum.

References:

1. Pradhan, S. Jotwari, M.G. and Prakash, S (1964): Relative Efficacy of different Insecticides to the Grubs of Singhara Beetle, *Galerucellabivmanicajacoby*, Indian J. Ent., Vol. 26(1), pp 9296.
2. Ibid.
3. Randhawa, M.S. (1079): In Preface of History of Indian Council of Agricultural Research, Published by L.C.A.R., New Delhi.
4. Singh, S. (1956) : the Punjab Plant Protection Service, Government of Agriculture College, marg-3, Ludhiana, Vol. 4(1).
5. Ansari K.K. Prakash, S. and Pandey, P.N. (2004), Effect of some plant products on oviposition period, fecundity and percentage of hatching of rice moth, *Corcyra cephalonica* (Station) Flora and Fauna 10 : (2) : 159-160.
6. Teotia, T.P.S. and Tiwari, G.C. (1971) : Insecticidal Properties of Drupes of Dharek and Rhizomes of Sweet Flag Against Adults of *S. cerealellaoliv*. Indian Journal Ent. Vol. 39(3), pp-222-227.