**Carbohydrate Protein DIET helpful to Cybister Confusus eggs Development**

Akhileshwar Kumar (Research Scholar) BNMU Madhepura,

Dr. Arun Kumar Singh Reader in Zoology M.L.T College Saharsa.

**Abstract**

Cybister confusus is an herbivorous egg laying insect. It is a species of dystiscidoe family of insect commonly called water beetle found mostly in India (Bihar) This beetle is largely found in fresh water Ponds in Saharsa and Madhepura district of Bihar during rainy season this beetle is laying egg in pond water Cybister Confusus on the hormonal activity and found deposition of protein and carbohydrate in the yolk cell that is giving clear evidence of increasing it development in egg and their herd size carbohydrate diet helpful to growth of laying egg insect that has a complete life

**Introduction**

Cybister confusus is species of dytiscidoe family of classinsect commonly called dividing beetle found mostly in india Bihar it is an egg laying insect that has complete life cycle found in pond.

This beetle is largely found in fresh water pond & in Bihar During rainy season.

The animal classification and under following

**Kingdom –Animal**

**Phylum – Arthropoda**

**Class – Insecta**

**Order – Coleoptore**

**Family – Dydiscidoes**

**Genus – Cybister**

**Specics – C.Confusus**

**Objectives**

The experiment was designed in this way that we can observed the hormonal regulation of Juvenile hormones in the metabolism of insect and its maturation as well as how insect hormone regulate its reproductive pattern and what are the effect of such chemical in the regulation of carbohydrate, protein, alkaline phosphate and lactate dehydrogenase activities.

**Material method**

**Test animal** is **Cybister confusus** which is taken from the different areas of ponds of Muzaffarpur, Saharsa and Madhepura district.

The insects were disinfected and kept in control surrounding where necessary nutritional vegetation were supplied for further growth and reproduction according to molar mass 310.68 gram.mol-¹ and solubility in water is 0.08mg/L.

**Test Chemical**

Diflubenzuron which chemical formula is C14H9ClF2N2O2 an insecticide used in agriculture pesticide approved by WHO and used in America and India in restricted way. Juvenile hormone of insects released by the neurosecretory cells of the brain from corpora allata directly influenced this hormone to reproduction cycle in respect of yolk development while the test chemical has also contain juvenile hormone

The mode of action of test chemical is that it inhibits the production of chitin due to presence of regulatory hormone that triggers insect larvae to molt early without forming exoskeleton resulting death of larvae. The product is easily water soluble and enter into the waterbodies through rain water and cause impact on the reproduction of Cybister confusus.

**Process**

Juvenile hormone (JHs) a group of sesquiterpenoids that regulate insect physiology (first discovered by Wigglesworth) this hormone regulates the development and reproduction growth of insect.

Juvenile hormones are secreted by corpora allata and also responsible for production of eggs and yolk formation in the insects. As we have discussed earlier that test chemical contains regulatory hormone therefore increase level of this hormone present in water cause consumption of more hormones by the insect that trigger the neurosecretory cells of the brain.

When LC50 of chemical is exposed to the animal more than 50% of the insects died. When dose dependent experiment was proceeding slowly and gradually the tendency of insects changed and reproduction of the test insect started.

The rearing of insect divided into two groups of 100 insects, within few hours hatching started that was transferred into solo cup by means of paint brush, eggs were obtained from Heliothis virescent culture reared on corn soy-milk that was based on Burton (1970) and experimental design of food of control carbohydrate and protein was given and covered the lid for observation.

Now some insects were injected 0.025ml acetone and with distilled water in ratio of 1:4 while other group was injected by brain extracted growth hormone with 0.025 acetone, after treatment quantitative estimation of carbohydrate protein lactase dehydrogenase and alkaline phosphate was observed by obtaining its haemolymphs

**Result**

Larval survival was totally different in treatment it was highest in p175:c245 and fastest on p245: c175.The mating pairs also affected p/c ratio of diet (ANOVA)F530,408, p=0.006

**Discussion**

Cybister confuses was regulating by carbohydrate and protein diet high p/c ratio ingested high protein due to regulatory hormone present in their haemolymph that cause high protein consumption and thereby presence of protein in egg yolk that absorbs through gut lumen and then into the haemolymphs and into amino acids

**Method used**

Quantitave data collection on haem78atological and biochemical parameters etc.

**References**

1. Highnam K.C. 1962 neurosecretory control of ovarian development in deseret locust Mem.soc.insect reproduction symn.2.26-42
2. Engelmann F.1970 b. The physiology of insect reproduction academic peris, newyork P.p 307. Etc.
3. Adiyogi KG and Adiyogi R.G. 1974 I.sc. and Indus research 33:343- 558.

Abou El-Ela,R. G. Taha.