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JUBENO MIMETIC ACTIVITY OF PLANT COMPOUND AGENTS CULEX QUINQUFASCIATUS

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Introduction

Mosquitoes are the major vector for the transmission of malaria, dengue fever. Yellow fever .filariasis, schistosomiasis and Japanese encephalitis (JE): in India. Malaria is one of the most important caused of direct or indirect infant, child and adult mortality with approximately two to three million new cases arising every year. Anopheles subpictus grassi is distributed throughout India. Afghanistan, Borneo, china, malaysia, philippines, Sri lanka. Java and indonesia.it is a dominant species in Haryana and Uttaranchal states. Thought it is a non - vector species same infected specimens with malaria parasite have been reported from India, Indonesia and java An. calicifacies
Is the main vector of malaria and An. subpictus is a significant secondary vector in Sri lanka. An subpictus is recognized as the secondary vector of malaria in south East Asia with a large number of cases being reported from India.2400 million (about 40 x) of the world`s population India contribution 77 percent of the total malaria in solution Asia. Ex-tritaeniorhynchus is a primer vector of Japanese encephalitis (JE) virus with a distribution throughout Southeast Asia and south Asia. Keiser *et al* have reported thout global annual incidence and mortality estimates for JE are 30,000 to 50,000 and 10,000 respectively.

Material & Methods-

Collection of plant material leaves of *Annona Squamosa* L. (annonacea) was collected from college campus at Khargone. The taxonomy identification was made by Dr. S.K.Jain of Botany S.S.L. Jain College Vidisha. A Boucher specimen was Capt. in the research lab the leaf

dried for 7-10 days in the shade at the environment temperature (27-37ºC days time). The leaves (700g) were powdered mechanically using commercial electrical stainless steel blander and extract with hexane (2,200 ml, fine chemicals, Mumbai), chloroform (1000ml fine chemicals Mumbai), ethyl acetate (2,500ml qualigens, fine chemical Mumbai India) acetone (100 ml qualigens) and methanol (2,800 ml. qualigens) in a soxhlet apparatus (boiling point range 60-80) for 6h.the extracts were filtered through a Buchner funnel with what man number 1 filter paper. The extract was concentrated under reduced pressure 22-26mm hg at 45ºc. The residues were acetone (stock solution). From 1

percentage stock solution serial dilution of 200-500ppm was made which tested agents II instar larvae.

Test insect- Laboratory colonized culex quinquefasciatus second and fourth instar larvae were wed for the experimental purpose. Larval bioassay was conducted according to standard WHO procedure (1981). Different concentration ranging from 20 to 50ppm was used. 1ml of each concentration was mixed thoroughly with 249 ml of top water in 500ml glass beakers, 25 second and early fourth instar larvae were taken in each test concentration. The treatment was repeated three times for each concentration along with control. Percentage of mortality was observed at 24 hrs. Period and mortality was corrected according to Abbott formula (1925).

Fecundity and fertility experiment was conducted by talking equal number of male and female mosquito which has emerged from the treated and untreated sets and mated in cages which were place into following groups-

I) Treated females with treated males,
II) Treated females with treated untreated males,
III) Untreated females with treated males,
IV) Untreated females with untreated formula.

Tables- Effect of purified fraction E2 of Eupatorium on Development, molting, metamorphosis of Culex quinquefasciatus

S.N.	Conc.ppm	Larval mortality (%)	Average larval period (days)	Pupal mortality ((%)	Average pupal period	Adult emergence (a)	Average development period (b)	Total mortality ((%)	Growth index (a/b)
1	200	36	13.5	4	1.5	60	15	40	4.00
2	300	45	14.5	6	2	49	16.5	51	2.96
3	400	54	14.5	8	2.5	38	17	62	2.23
5	500	60	14.5	12	2.5	28	17	72	1.64
6	Control	4	15	2	2.5	94	17.5	6	5.52
7	untreated	0	15.5	2	2.5	98	18	2	5.44

Observation and result –

When IInd instar larvae Culex quinquefasciatus were treated with different concentration test solution in three replicates along with a control an untreated the average development period which was noticed was 17 days in 500ppm concentration. How it was cases 60% percentage larval mortality the growth index was pound to be 1.64 in higher concentration. This shows enrollment of growth inhibitory activity beside growth inhibitory compound the plant extracts also showed Jubeno mimetic effects. The stages obtained one age under

I) Larval pupae intermediate,
II) Half eddied didalt and
III) Dmelanised pupae.

Discussion –

The activity of crude plant extracts in often attributed to the complex mixture of active compounds. In the preliminary screening potential larvicidal activity of plant, different solvents crude extract of the plant.

Similar larvicidal and chemosteritant toxic effect of *Anona squamosa* have been reported carliar by Krishna *et.al.* (2008) and saxena *et.al. (1993)* have also reported the larvicidal and chemosteritant activity of *Anona squamosa*. The growth index in the present study was found to be quite significant at 500 ppm. Con. (5 α 0.05) the qurqge developmental period was found to be reduced. Besides growth inhibitory activity, involvement of Jubeno *mimetic* effects was also noticed. This is quite similar with the findings of Spielman and Skaff (1967) who reported that a butanol extract of the soqpberry plant, *Phytolacca dodecandra* ,induced morphogenetic aberrations, in Adees *qegypti* (linn.),The present study report the half ecdysed qddutt which could not come out of the pupal exuvea . Larval pupal inter mediate was also observed in the present study clearly indicating the J.H., analogus fructose present in the extract on plant.

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