STUDY OF THE FUNCTION OF SYMBIOTIC MICRO ORGANISM OF DACUS-CUCURBITAE

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Abstract : Study of Nutritional, Physiology of Insects containing intercellular symbiotic flora without reference to its symbiotic organism may lead to erroneous Interpretations. Experimental evidences are available to demonstrate get Apo symbiotic organism of the test insects demonstrated the synthesis of Nutrients life vitamins of Bcomplex by the Symbiotic bacteria in vitro Dang 1970, Singh 1971, Bucher 1953 and Henery 1967 have given a comprehensive account of Symbioses on different insects. Several review have appeared from time to time on Morphological and Physiological.

Relationship of Symbiotes in insects four essential amino acids viz. Arginine, Histidine, Isoleucine & Leucine for this Leuconostoc - Mesentrodies ideas are was used in the Microbiological assay of the test organism.

Index Terms **- Leuco Nostoc-Mesentroides, Symbiotes, Microbiological assay, Hydrolyzed yeast, Ovarian development.**

I. INTRODUCTION

The relationship between the Microbes and the host has been the subject for the investigation since beginning the century, very title is known about the symbiotes mode of Transmission and function of bacterium life symbiot of D. cucurbitae. The present work therefore taken up with view to investigate the function of symbiotes in the body of host due intimate relation & presence of highly efficient and complicated mechanism of transmission. It was presumed that Microbes must be carrying out some function for the benefit of the host. The ovarian development needs a special type of food rich in source of inertial amino acids. It is obtained from honeydew and Extra floral Nestories which files visit prior to ovi position.

II. MATERIALS AND METHODS

In order to study the amino acids requirement for the ovarian development of adult D-Cucurbitae a Chemically defined artificial diet was prepared. The basic diet used was the same as suggested for R. Pomonella. By Bush at dated 1969. The basic diet in its composition consists of amino acids (Essential & Non-essential amino acids) Carbohydrate, Sucrose, In organics salts, Mixture and Vitamins in growth factor. In laboratory enzymetically hydrolyzed yeast, Sugar and water was used for ovarian development. Experiments were conducted in which different diet were offer to the Fly and their effects on ovarian development were studied.

A control diet containing sugar, water and enzymetically hydrolyzed yeast proved the best acidimetric methods in microbiological assay techniques was fallowed to study the IN Vitro synthesis of essential Amino Acids by the symbiotes for determining the volume of amino acid amino acids by the symbioses. A standard curve was prepared by plotting different volumes of arginine used in assay medium against the acidity produced in the same medium. It was thus possible from this graph to rest the values obtained in the above tests in terms of amino acids synthesized.

III. DISCUSSION

The adult fly requires all the ten essential amino acids but when Agrinine, Histidine, Isoleusine or leucine where omitted one at a time. The flies could still complete the ovarian development. The deficiency of there amino acids in fact was made good by the synthesized capacity of the symbiotes. When all the attempt to make foesymbiotic individuals failed in vitro investigations were made to demonstrate trite that P. Pseudomallie, Symbiotes of D. cucurbitae are capable to arginine, Histidine, Isaleucine, leucine for this lest leuconostoc Meretroid was used in the Microbiological assay of the test organism.

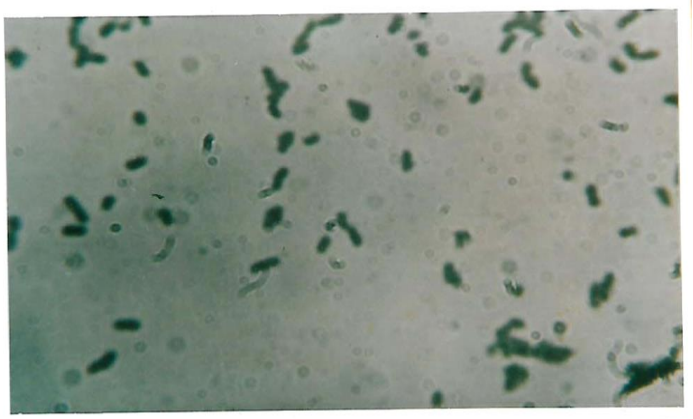

Fig.1 : Smear showing cultured symbiotes of egg X 900

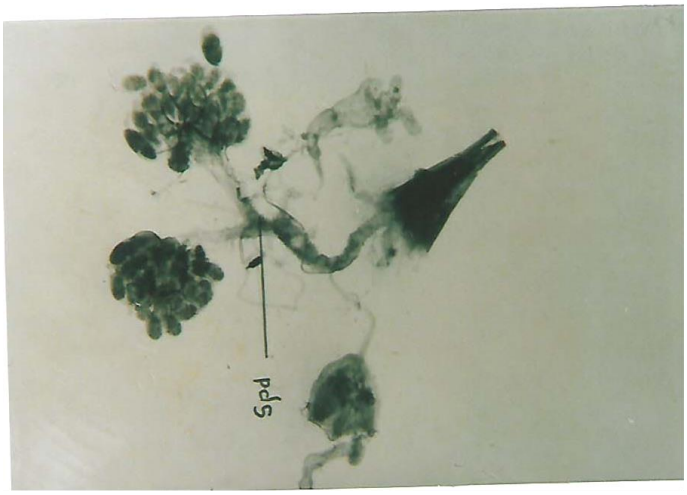

Fig. 2: Female reproductive system and Hind gut of D. Cucurbite, Spd = origin of spermathecal duct.

It is evident from the table that ovarian development and ovipositor can take place in the absence of all non-essential amino acids from the basis diet. When essential amino acids were omitted from the diet one at the time no ovarian development took place in the absence of lycine, methionine, Phenyl alanine, thionine, tryptophan or valine. In the absence of orbinine or hisidine although there was oviposition but the average the noof egg per female per day were reduced significantly obsence of I so levcine from the basis diet had low advance effect on ovarian development of dacus adults. Synthesis of Vitamin by Symbiots have been reported by several workers parts & Richards 1955 frank 1956, Selmis 1962, in Blathids 1971 PN signets and many others.

Table 1 : Effect of yeast hydrolysate and all amino acids on the fecundity of D. Cucubitae also in different diets. Each diet was Supplements with Sugar and Water.

Diet	Total No. of X/Female in 4 repliate	Average No. of eggs / Female replicate
Basic Diet	30.75	7.69
No Non-Essen		
Amino Acid (in 2)	29.67	7.41
No. Arginine (in 3)	17.55	4.39
No. Histi dine (in 3)	29.67	4.96
No. Insole cine (in 3)	29.20	7.30
No. Lev cine (in 3)	29.47	7.37
C.D. at 5%		1.09
C.D. at 1%		1.46
No. Lysine (in 3)		No ovarian development
No. Threonine (in 3)		No ovarian development
No. Methionine (in 3)		No ovarian development
No. Phenlala nine (in 3)		No ovarian development
No. tryptophance (in 3)		No ovarian development
No. Valine (in 3)		No ovarian development
Control yeast)	30.75	769
Hidrolysate Sugar + water		

Table - 2 : The Synthesis of essential amino acids demonstrated by the growth of the lest Microorganism Leuconstoids Mesenteries Atoc 8042.

Glucose	0.5%
Lactose	0.5%
Liver Extract	600 mg
Yeast extract	500 mg
Salt A	0.5 ml
Salt B	0.5 ml
Volume made upto 100 and pH 7.6	

Salt A

KH_2Po_4	25 mg
K_2HPo_4	25 mg
Distilled water	250 ml

Salt B

Mg 504	10 gm
NaCl	133 mg
MN SO_4	133 mg
$FeSO_4$	133 mg
Distilled water	250 ml

IV. RESULTS

The acidity in the medium increased with growth of Microorganism. The growth increased with the concent Mesentroides different. There was no growth in the absence of arginine. Growth of L. was added to the Medium increasing concentration to obtainresponse curve of L. Meren troids different concretion of his dines. Histidine Mono chloride was added to the Medium increasing concentration to obtain response curve of L. Meoon troids with the increasing concentration of L. Leucine is given. There was no difference in the growth response where Levine concentration was raised 10 µg to 20 µg and a very slow growth responses was observed upto 50 µg of leucing. After this there was a good response of the growth of the Micro-organism no defiance in growth was observed between 80 and 100 µg of leucine in the medium. The ovarian development and variable egg production of D. Cucurbitae could take place in the absence of the essential amino acids, arginine, hisdine, I so leucine or leucine from the chemically defined diet. The absence of essential and non-essential amino acids also do not wider in ovarian development and egg production the experiments conducted show that the symbiotes, however are unable to fix atmospheric nitrogen in vitro unlike other insects were nitrogen synthesis has been reported.

The ovarian development and variable egg production of D-cucubitae could take place in the absence of the essential amino acids. The absence of essential and non-essential amino acids also do not wider in ovarian development and egg production. The expeiments conducted show that the symbiotes may be supplementing the amino acids to their host the symbiotes however one unable to fix atmospheric nitrogen in vitro unlike other insects were nitrogen syntheses has been reported.

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