

DETERMINATION OF THE MEDIUM INHIBITORY CONCENTRATION OF VARIOUS ANTIBIOTICS TO CULTURED SYMBIOTES IN DACUS-CUCURBITAE

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Abstract : Physiological significant of the symbiotic Micro-organism can be studied if the host can made aposymbiotic in such manner that the host is not adversely effected. Experiment carried on the inhibition of symbiot through the use of Five Antibiotics proved very effective other of little or no value against the symbiotic Micro-organism. Among this hostacylin and Terramycin, give the report for growth observed within 72 hours and other like chlororamphenical and cannamycin could not show growth observed after ten days. According to table streptomycin could permit 70% of larval to pupate with the rise in concentration. The Motality among larval increase but symbiotic in mucetone contain unaffected.

Index Terms - Antibiotics, Sterlized egg, Artificial diet, Inhibition, Fruit Pulp, Symbiotes, Apo Symbiotes.

I. INTRODUCTION

Elimination of symbiotes is essential for study of the Trophic role of Symbiotes by rearing aposymbiotic and normal insects n chemically defined diet attempts were made to eliminate Symbiotes from body of insects by oral administration of different doses promising antibiotics of larval stages. The question arises whether antibiotics inhibited larval growth directly or indirectly dose to inhibition of symbiotes.

The symbiotic bacteria are not immune to direction to the action of antibiotics as soon by in vitro studies were different doses of antibiotics created clear zone on other plate indicating chemotherapeutic activities of their chemicals. Several methods viz, Ultraviolet rays, gamma radiation, Fumigation and chemotherapy have been used by various worked with varying Transmitted through gonads of the host is questionable issue.

II. MATERIALS AND METHODS

For eliminating symbiotes in D-cucurbiata drugs were used out of chemotheputic drugs were used. The minimum concentration of selected antibiotics were determined by dilution methods. In vitro effect of antibiotics of symbiotes. The sensivity of Microorganism to various antibiotics was tested First by filter paper disc-Method Baken (1967) and then Minimum inhibitory condition M.I.C. effective once was investigated to determine, the Amount of antibiotics to be orally administrated to the insects extents of inhibition zone of culture symbiotes in the centre of nutrient agar petri plates were incubated at 35°C for the development of inhibition zone for 72 hours. The diameter of each zones was measured.

The minimum concentration of selected antibiotics were determined by dilution method 10 ml of nutrient growth was taken in each test tube and minimum concentration of various antibiotics were studied. One drop of dilute suspension of bacteria was added to each of the tube. Effects of different doses of antibiotics were administrated through fruit pulp diet on larval and their symbiotes were studied. Brooks and Richards (1955, 59), Frank (1955).

III. RESULTS AND DISCUSSION

Effectiveness of antibiotics was assessed by the extent and clarity of inhibition zone produced on agar colony of cultural symbiotes. Five of antibiotics proved very effective and others of little or no value against the symbiotic Micro-organism. Chloramphnrical gave the maximum diameter of 32 mm. but was less transport of Ampicillin, Erythrocillin, Erythrolase and Sulfadiazine proved much less inhibitory. The findings of experiments concerning minimum selected of antibiotics determined by dilution method indicated growth of symbiotes within 72 hours (+) and growth no observed 10 days negative (-).

The results of findings antibiotics to larvae through least hydrolysate medium clearly indicate that Terramycin proved very highly toxic to larvae and in all other cases. Larvae survival to pupate but symbiotes could not be eleminated from the host. In the lowest concentration of Canamycin and Chloromphnrical larvae have developed through poorly on fruit pulp diet and in both there cases, symbiotes could be isolated to develop even through Micro-organism were response was observed upto 50 µg of Leucine. Hagen (1966), suggested that the microbes hydrolyse flash of olive fruit and thus make it more nutritious for the maggot to develop. Each of five promising antibiotics were mixed with artificial diet (yeast-agar) and sterilized eggs of *Dacus olae* were oculated aspectically. Ampicilin and Erythrolate were less effective and the symbiotes were practically immune to Penciline and Sulfadiazine.

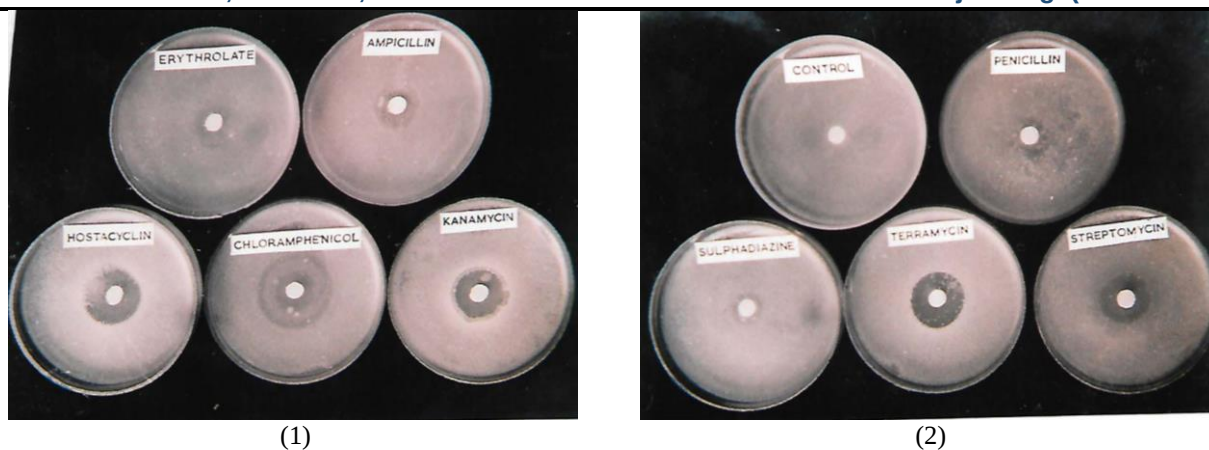


Fig. 1 & 2 : Petriplate showing the inhibition zones caused by different antibiotics on the growth of micro-organisms cultured from egg of *D. cucurbitae* Control had no antibiotics.

Table 1 : The minimum concentration of various antibiotics required to inhibit cultural symbiotes of *D. cucurbitae* at 35°C

Antibiotics 5	Antibiotics Concentration $\mu\text{g./ml.}$							
	10	25	50	75	100	200	400	800
Hostacyclin	+	+	+	+	-	-	-	-
Streptomycin	+	+	+	-	-	-	-	-
Chloramphenicol	-	-	-	-	-	-	-	-
Kanamycin	-	-	-	-	-	-	-	-
Terramycin	+	+	+	+	-	-	-	-
Control	+							

+ = Growth Observed within 72 hours.

- = Growth not observed even after 10 days.

Table - 2 : Effect of different doses of various antibiotics administered through yeast agar diet on larvae of *D-Cucurbitae* and their symbiotes.

Antibiotics	Concen. in %	Average % age (Pupation)	Presence/Absence of Symbiotes diet gut mycetome
Chloramphenicol	.00025	66	- + +
	0.001	56	- + +
	0.2	53	- - +
	0.4	23	- - +
Kanamycin	.00025	70	- + +
	.001	63	- - +
	0.08	20	- + +
Terramycin	0.01	Larvae diet Young	- 0 0
	0.04	„	- 0 0
	0.1	„	- 0 0
Streptomycin	0.005	70	- + +
	0.08	63	- - -
	0.2	33	- - +
Hostacyclin	0.01	17	- - +
	0.08	No Pupation	- - +
Control	No	80	- + +
	Antibiotics		

+ = Growth

- = No Growth 0 = Not Tested

Table 3 : Effects of different doses of various antibiotics administrated through fruit pulp diet on larvae of *D. cucurbitae* and their symbiotes.

Antibiotics	Concen.in %	Average %age (Pupation)	Presence/Absence of Symbiotes diet gul Mycetome
Chloramphenical	3E-04	23	+++
	0.001	3	--+
	0.2	3 Larvae	--+
	0.4	Larvae died young	-00
Kanamycin	0.003	23	+++
	0.001	Larvae died young	-00
	0.08	Larvae died young	-00
	0.2	Larvae died young	-00
Terramycin	0.01	Larvae died young	-00
	0.04	Larvae died young	-00
	0.1	Larvae died young	-00
Streptomycin	0.005	Larvae died young	+00
	0.08	Larvae died young	-00
	0.2	Larvae died young	-00
Hostacyclin	0.01	Larvae died young	-00
	0.08	Larvae died young	-00
Control	No Antibiotics	47	+++

+ = Growth

- = No Growth 0 = Not Tested

IV. CONCLUSION

Complete elimination of symbiotes that were transmitted through the gonads of hosts is a questionable issue. This would be possible only if the symbiotes during transportation from Mycetome to gonads through hemolymph is killed by antibiotics present in hemolymph.

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