GROWTH PERFORMANCE OF *CATLA CATLA* UNDER DIFFERENT LEVELS OF SUPPLEMENTARY FEEDING IN FERTILIZED PONDS

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The response of *Catla Catla* towards different levels of supplementary feeding (rice polish) was studied. The results indicated that the maximum weight gain in fish was observed in that pond in which supplementary feed was done at the rate of 4% of wet body weight of fish per day, followed by 6%, 2% and 0%, respectively. Increase in body weight was positively and significantly correlated with temperature.

INTRODUCTION

Fish is an excellent source of protein. Jhingran (1982) reported that the production of major carps viz., *Catla catla, Labeo rohita* and *Cinhina mrigala* could be increased by making available adequate quantities of natural food and balanced artificial diet to them. Javed *et al. (1993)* observed the response of artificial feed (30% crude protein) in major carps. The result indicated the use of artificial feed in two ways: (i) direct utilization of feed, and (ii) indirect response of left over feed in terms of planktonic productivity. The above line indicates that the effect of artificial feed is of considerable importance in intensive fish culture practices, but no information is available that what level of supplementary feed is better for the growth of major carps. So a project is planned to study the "Growth performance of *Catla catla* under different levels of supplementary feeding in fertilized ponds".

MATERIALS AND METHODS

Four earthen fish ponds located at Fisheries Research Farms, University of Agriculture, Faisalabad were used for the experimental purpose. After preliminary preparations, these ponds were stocked with *75 Labeo rohita,* 37 *Catla catla* and 13 *Cirrhlna mrigala* in a ratio of 60%, 30% and 10%, respectively. Artificial feeding (rice polish) was done at the rate of 0%, 2%, 4% and 6% of wet body weight of fish per day in pond 1, 2, 3, and 4, respectively. About 25% fishes were netted out from all the ponds fortnightly to monitor the body weight. After recording the data fishes were released back into their respective ponds.

RESULTS AND DISCUSSION

The increase of weight in fish under different treatments was shown in Table 1. Analysis of variance shows that there was significant difference among TI. T2 and T3 while T3 and T4 and shows non significant difference. The comparison of means for fortnights shows that means sharing the same letter differ non-significantly while those having different differ significantly (Table 2).

The maxim urn weight gain in *Catla catla* was observed in pond 3, in which supplementary feed was done at the rate of

Table 1. Fortnightly incre:lse in body weight of *Cat/a cat/a* under different treatments.

No. of Obs.	Date of Obs,	Pond-l (0%)		l'ond-2 (2%)		Pond-3 (4%)		Pond-s (6%)	
		Total weight (gm)	Increases in weight (gm)	TOlal weight (gm)	Increase in weight (gm)	Total weight (gm)	Increase in weight (gm)	Total weight (gm)	Increase in weight (gm)
1	01.07.92	224.	-	224.	-	224.	-	224.	-
2	16.07.92	238.9	14.9	253.8	29.8	266	42.	261	37.
3	01.08.92	255.6	16.7	2H9.9	36,1	318	52.	308	47.
4	16.08.92	273.8	18.2	330.6	40.7	377.9	59.9	363	55
5	*01.09.92*	297.2	23,4	375.6	45.0	443.	65,1	422.7	59.7
6	*16.09.92*	324.2	27.0	425.8	50.2	514.4	71,4	489.1	66,4
7	01.10.92	355.2	31,0	479.8	54.	*590.2*	75.8	558.9	69.8
8	16.10.92	385.8	30.6	53K8	59.	663.8	73.6	627.6	68.7
9	01.11.92	412.6	26.8	581.S	43.	726.8	63.0	685.5	57.9
10	16.11.92	436.5	23.9	(d (,.7	34.9	*n2.5*	45.7	733.	47.5
11	01.12.92	451.7	15.2	MI.7	25.0	804.()	32.1	753.	20.0
12	16.12.92	459.2	7.5	656.9	15.2	821.3	16.7	768.	15.0
13	01.01.93	462.9	3.7	(,(.3.!)	7.0	929.6	8.3	*n7.3*	9.3

Table 2. Analysis of variance of body weij!hl of Calta carla under different treatments.

S.o.V.	DF	SS	MS	F-value
Treatment	3	350831.00	116943.667	32.98"
Fortnights	12	1368016.07	114001.339	32.15""
Error	36	127670.23	3546.395	
Total	51	1846517.30		

Comparison of means under different treatments

1	2	3	4
352.12	467.58 B	565.55 A	536.24 A

Fortnights

1	2	3	4
224.00 11	254.93 GII	292.88 GII	336.33 PG
5	6	7	8
384.63 EF	438.38 DE	496.02 CD	551.00 nc
9	10	11	12
601.50 AB	639.67 AB	662.75 A	676.35 A
13			
683.42 A			

4% of wet body weight of fish per day, followed by pond 4, 2 and 1, in which supplementary feed was done at the rate of 6%, 2% and 0% of wet body weight of fish per day. Trzebia *et al.* (1979) in their studies on carp recommended that daily feed allowances at the rate of 4.5% was the most effective. Ghosh *et 0/.* (1984) have reported almost similar results in their investigation when they studied the effect of artificial feed on the production of carp *[Cyprinus carpio).* They reported that feeding beyond 4% was wasteful, and accumulation of feed caused deterioration of water quality.

Maximum weight gain in pond 3 was noted during October and this was due to optimum temperature while the lowest weight gain was 8bserved during January and this was due to low temperature. The same results were also noted by Villaluz and Unggui (1983) who reported that low temperature (22.6° C) decreased activity

and food intake and high temperature (upto 33· C) has the opposite effect. They also reported that growth and development were faster at higher temperature.

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