The Effect of PrimaLac on Growth and Performance of Tilapia in earthen fish ponds in Ein Hamifrats Fisheries

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Presented By:

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Materials and Methods

This clinical trial took place at Ein-Hamifratz earthen fish pond named "B" (PrimaLac, total area – 45 dunam, dunam=1,000 m²) and "E" (control, total area – 40 dunam) and average depth of 2 meters. From 9/5/06 to 20/10/06. In the ponds there were automatic feeding tank and paddlewheels for water aeration (picture 1).

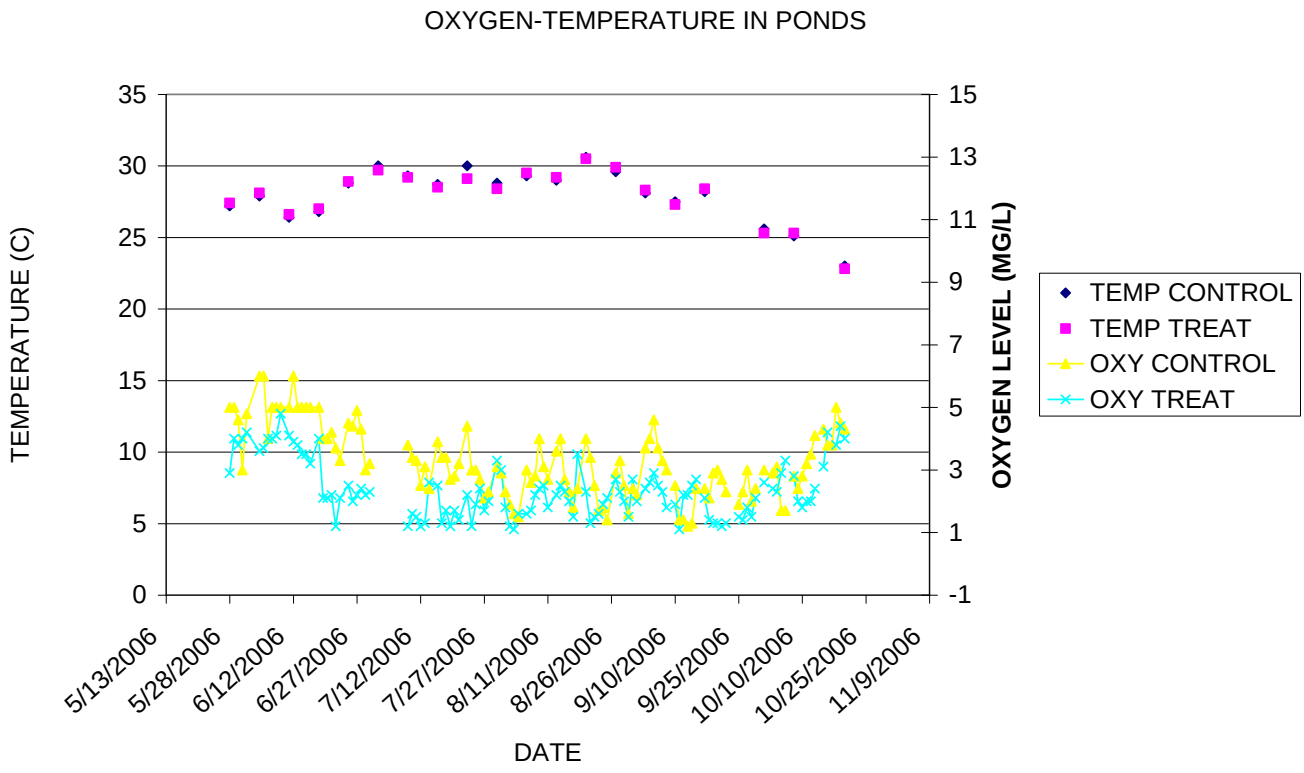
Picture 1: Pond "E"

Tilapia fry (*Oreochromis nilotica X aureus*) produced at the Ein-Hamifratz hatchery was used in the trial.
Water quality parameters (temperature, dissolved oxygen, ammonia and nitrite) were collected through the period of the clinical trial (fig.1-2).
The experiment included 1 pond ("B) supplemented with PrimaLac AQ additive at the dose of 2 kg per ton of feed and one pond ("E") with normal fish feed as control. The fish were fed with fish pellets manufactured by T.L.C. feed mill, code number 8218, (30% protein, 4% fat, 4.5 mm extruded floating pellets) at a ratio of 1.5-3.0% of the biomass daily for a period of 161 days in the ponds.
Initial stocking data in ponds are showed in Table 1.

	POND "B" PrimaLac	POND "E" CONTROL
AREA (DUNAM)	45	40
DENSITY (FRY/DUNAM)	1933	1750
FISH NUMBER	87,000	70,000
INITIAL BIOMASS/DUNAM (KG)	145	124
INITIAL FISH WEIGHT (g)	75	71

Table 1: Initial stocking data in ponds

Figure 1-2 Water quality parameters in fish ponds



Results

The FCR, survival, final weight, weight gain per dunam, and growth rate of tilapia fed PrimaLac supplemented diets for 161 days are presented in table 2, Fig. 3-7.

	Initial Fish number	Final fish number	Survival (%)	Initial avg Weight (g)	Final avg Weight (g)	Net harvest Gain per Dunam (kg)	FCR*
Pond "B" PrimaLac	**87,000**	**75,329**	**87**	**75**	**447**	**604**	**1.60**
Pond "E" control	**70,000**	**54,731**	**78**	**71**	**505**	**567**	**1.78**

Table 2

***FCR: Food conversion rate.** Feed conversion ratio (FCR) is calculated from the number of kilos of feed that are used to produce one kilo of whole fish.

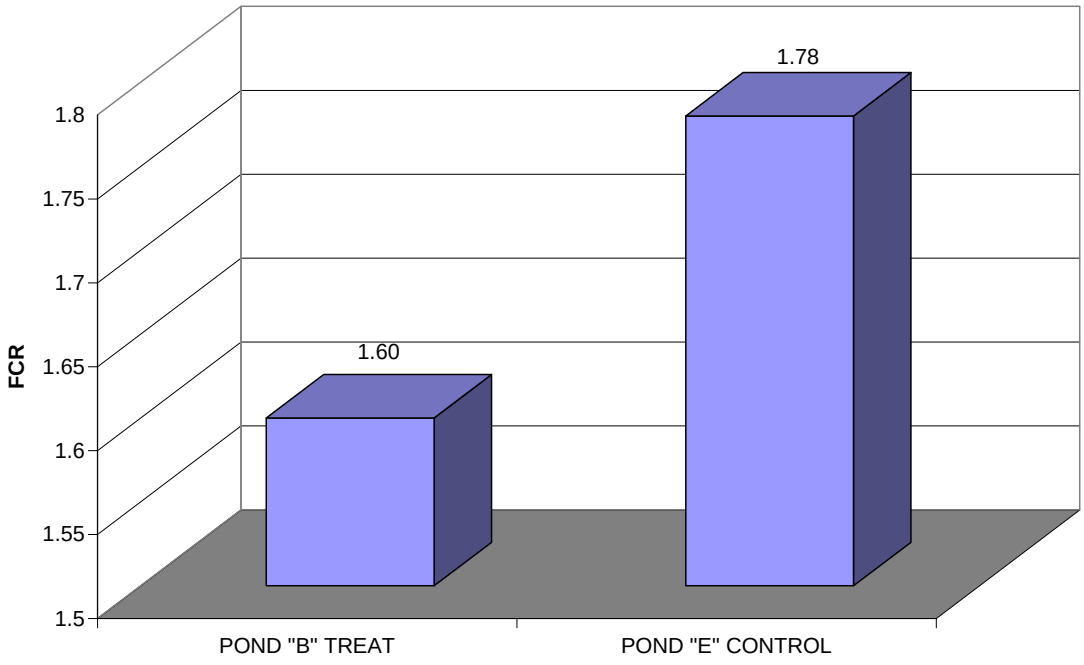


Figure 3: FCR of tilapia fed Probiotic supplemented diets for 161 days.

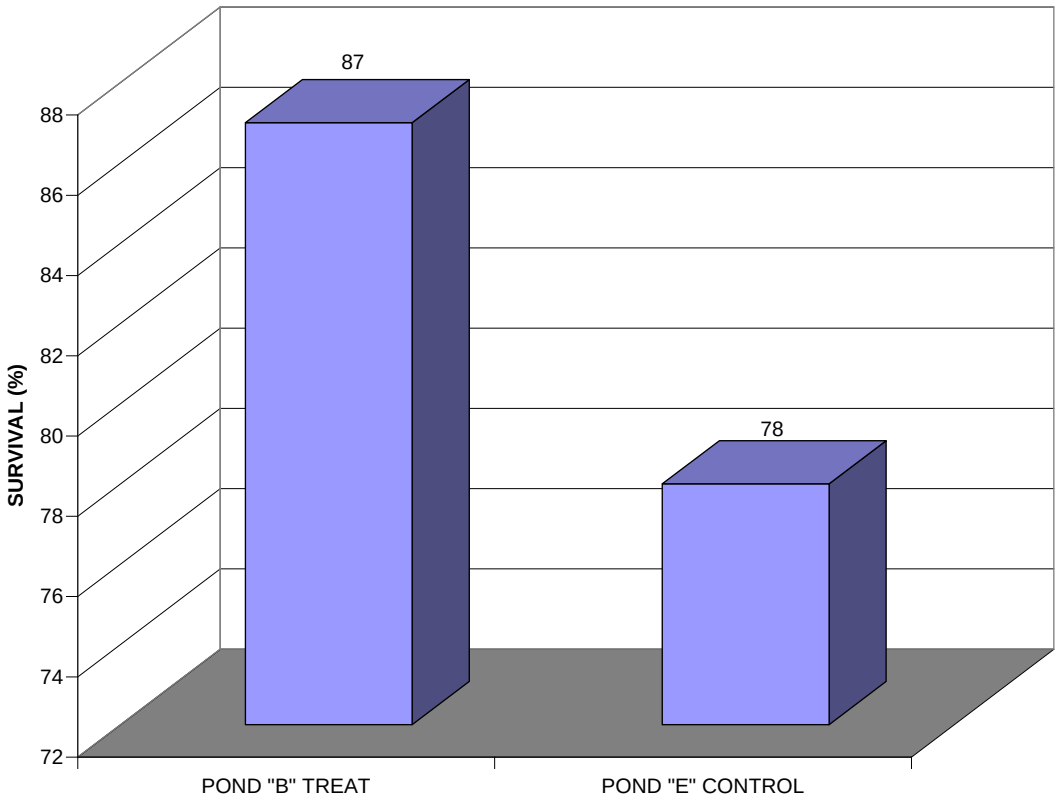


Figure 4: Survival of tilapia fed Probiotic supplemented diets for 161 days.

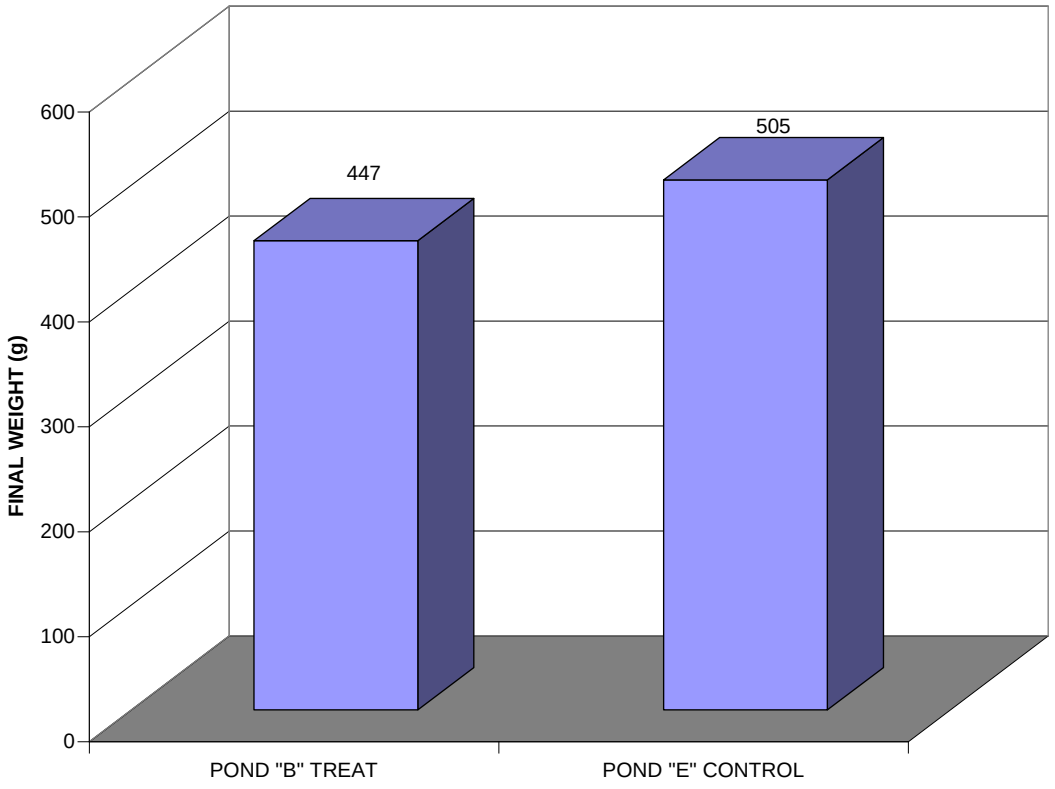


Figure 5: Final average weight of tilapia fed Probiotic supplemented diets for 161 days

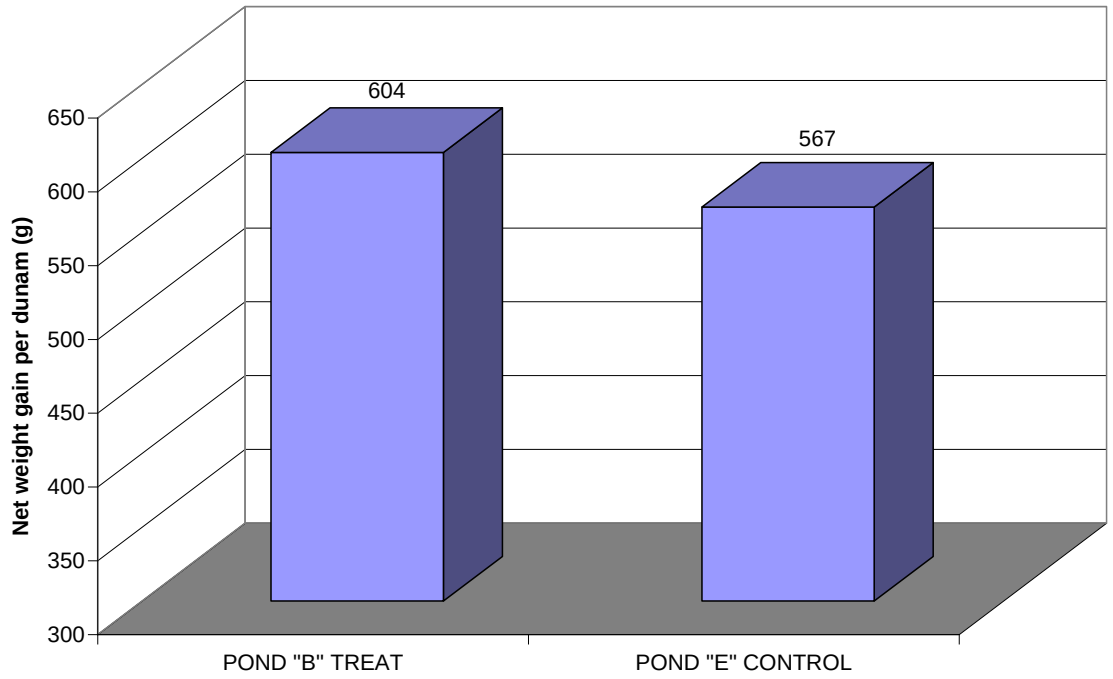


Figure 6: Average net weight gain per dunam of tilapia fed Probiotic supplemented diets for 161 days.

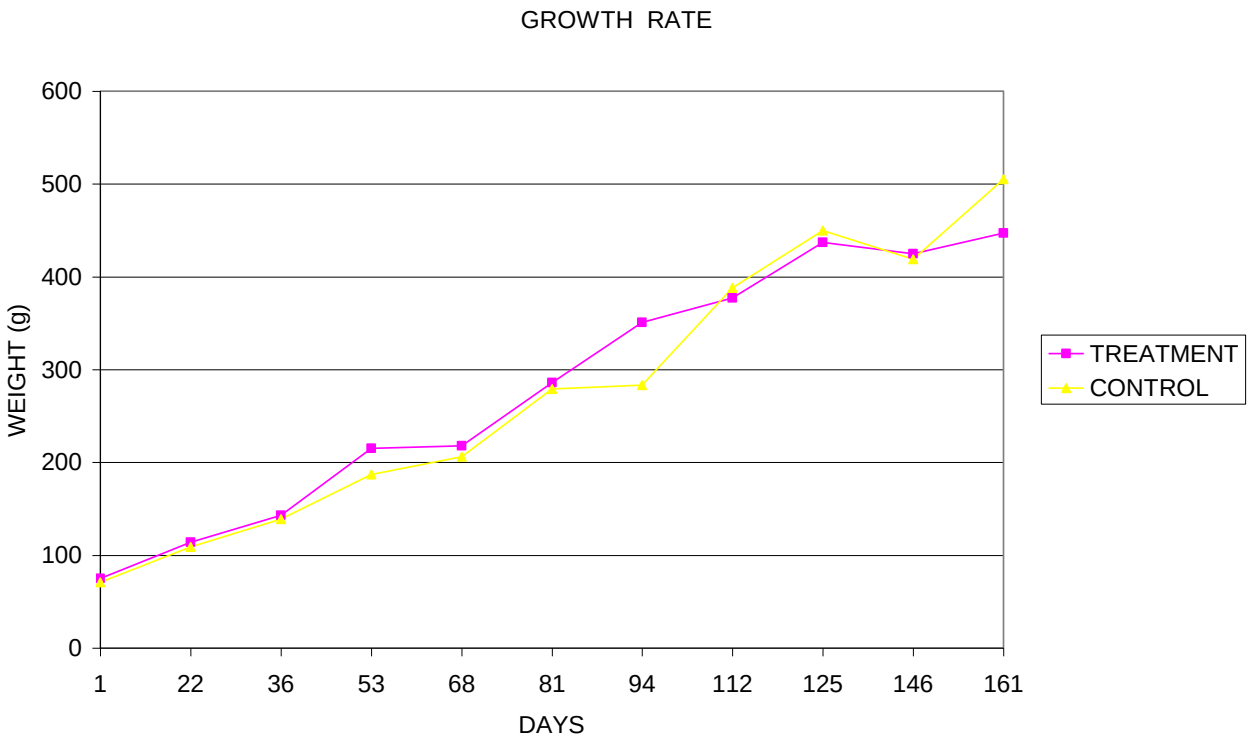


Figure 7 : Growth rate of tilapia fed Probiotic supplemented diets for 161 days. The last weighing point (day 161) result of final mean weight of all fish during ponds dismantling.

The diet supplemented with PrimaLac improve performance in tilapia specially in FCR (1.6 treatment – 1.78 in control), yield per dunam (604 kg/dunam treatment- 567 kg/dunam control) and survival (87% treatment- 78% control).

Diagnosis of disease during the experiment

Morbidity levels:

Very low
Low
Medium
High
Very high

Pond "B" PrimaLac

Centrocestus: (Digenea parasite) low level
Trichodina: very low level

Pond "E" Control

Trichodina: medium level (the pond was treated once with copper sulphate, 2.5 ppm)
Gyrodactylus: very low level
Sessiline: low level

Conclusion:

No differences between ponds were found related to disease causing organisms.

Analysis of economic profitability of the results

Data for calculation:
Value of 1.0 Kg tilapia (400-450 g): $ 3.00 USD
Net increment in body weight (37 kg/dunam X 45 dunam (Of Pond B) =1,665 kg Value = 1,665 Kg. X $ 3.00 USD/Kg. = $ 4995 USD

Treatment cost:

Estimated cost of PrimaLac AQ feed additive: $ 15 USD/Kg.
Dosage of PrimaLac AQ: 2 Kg. per Ton of Feed.
Estimated cost of PrimaLac AQ per ton of Tilapia feed: $ 30 USD
Food used during 161 days trial in treated pond "B": 41.3 ton
Treatment cost: 41.3 ton food X $ 30 USD/Ton = $ 1239 USD.

Net profit: (Pond B) = $ 4995 - $ 1239 = $ 3756 USD