

# PROCEEDINGS

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# EVALUATION OF DIFFERENT MANAGEMENT SYSTEMS UNDER GUPPY (*Poecilia reticulata*) REARING.

H.C.B.Karunathilake<sup>1</sup>, U.Edirisinghe<sup>1</sup> and K.Senanayake<sup>2</sup>

<sup>1</sup>Department of Animal Science, University of Peradeniya,

<sup>2</sup>Udara Agro Products (Pvt) Ltd, Minuwangoda.

## INTRODUCTION

In the export market guppy (*Poecilia reticulata*) play a major role and contribute around 60% of the total export by number out of fresh water cultured species. One of the problems in rearing ornamental fish is the high cost of production. Of this major portion is for feed. In addition, diseases occur mainly due to sub-optimal conditions in the water source (Claude, 1982). Therefore this investigation was undertaken to determine suitable methods to maintain water quality and feed application rates.

## MATERIALS AND METHODS

### EXPERIMENT 01

In the first experiment three different water exchange frequencies, 10% water exchange per day, 10% water exchange per every 3<sup>rd</sup> day, 10% water exchange per week were practiced; each having three replicates. Survival rates as well as Weight Gains were measured once a fortnight.

### EXPERIMENT 02

In the second experiment three different feeding levels; 4% of body weight, 6% of body weight, 8% of body weight and three different feeding frequencies; two times per day, four times per day, six times per day were tested. Trial was allocated randomly with three replicates per each treatment. Survival rate and weight gain were measured to identify the most suitable feeding regime and feeding level combination on guppy rearing.

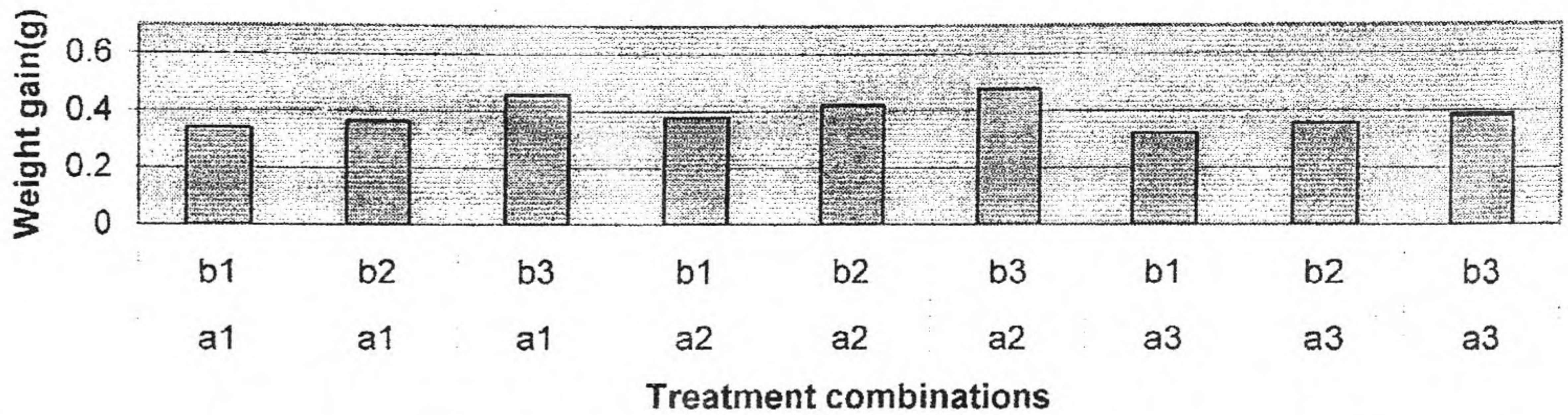
## RESULTS AND DISCUSSION

According to results of Experiment 01; significant difference among 10% water exchange daily and 10% water exchange per every 3<sup>rd</sup> day for weight gain was not observed ( $p > 0.05$ ). However, above two treatments showed a significantly higher weight gain than 10% water exchange per week ( $p < 0.05$ ). A significant difference ( $p > 0.05$ ) was not observed among water exchange frequencies and survival rates in the Experiment 01.

According to results of Experiment 2; there was a significant difference ( $p < 0.05$ ) among level a (feed frequency) and level b (feed levels) (Fig 02) for Weight Gains. In level a<sub>1</sub> higher Weight Gain was reported with b<sub>3</sub>.

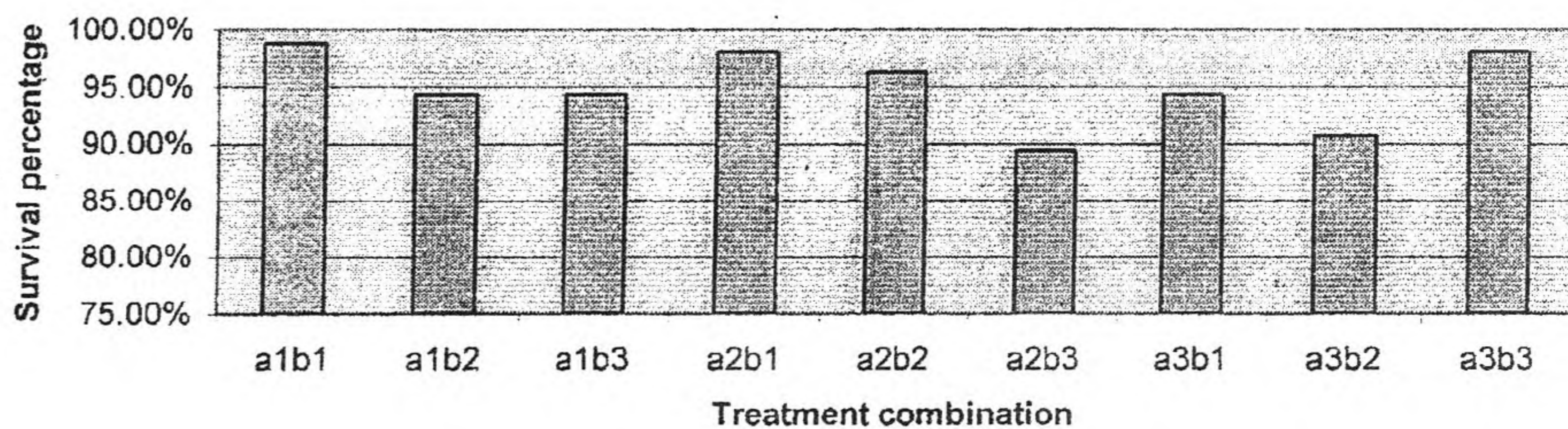
In level a<sub>2</sub> highest Weight Gain reported with combination of b<sub>3</sub> and with level a<sub>3</sub> given Weight Gain was observed in b<sub>3</sub>.

However overall highest Weight Gain was reported with a<sub>2</sub> and b<sub>3</sub> combination (Fig. 02).



**Fig 2. Interaction with feed levels and feed frequencies for weight gain**

a<sub>1</sub>- Feed frequency of two times per day.      b<sub>1</sub> – Feed level of 4% body weight  
a<sub>2</sub> - Feed frequency of four times per day.      b<sub>2</sub> -- Feed level of 6% body weight  
a<sub>3</sub> - Feed frequency of six times per day      b<sub>3</sub> – Feed level of 8% body weight



**Fig 3. Interaction with feed levels and feed frequencies for survival rate.**

According to results of Experiment 02; A significant differences ( $p > 0.05$ ) among the above treatment combinations was not observed for survival rate.

### CONCLUSION

Results revealed that the best water exchange frequency is 10% water exchange per every 3<sup>rd</sup> day, because it gave the highest weight gain and growth performance when compared with others.

The optimum growth response was from the treatment having a feed frequency of four times per day at 8% body weight.

### REFERENCES

Claude, E.B. (1982). Water Quality Management For Pond Fish Culture, Elsevier Scientific Publishing Company, Amsterdam, Oxford.