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DETERMINATION OF ADAPTABILITY OF AQUATIC PLANTS AND INDIGINEOUS FISH SPECIES (*Puntius tittैया*, *Danio malabaricus*) FOR NEW ENVIRONMENTS

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INTRODUCTION

Sri Lanka has vital aquatic resources especially aquatic plants and fish species. Over 30 % of fresh fish species are endemics, and hence it is important to conserve for future generation. Aquaculture can be defined in different ways. As agriculture is the cultivation of plants and the cropping from the land so aquaculture is the pursuit of production from water. Aquaculture includes the husbandry of management, nutrition, multiplication or breeding of all useful aquatic organisms. Just as farming replaced hunting and gathering so aquaculture may increasingly displace the hunting and catching of wild stock (Reay, 1979).

MATERIALS AND METHODS

Experiments were carried out from April 2004 to August 2004 at National Agro Technological Park at Gannoruwa and at Department of Animal Science, University of Peradeniya.

In the Experiment 1, Artificial canal was constructed at National Agro Technological Park at Gannoruwa. Different ferns were planted in the bank while aquatic plants were planted in the middle in the canal where water flows. A hand spade and a sharp edged stick were used for planting. They were used to minimize soil erosion in the canal by sharp tools such as mamoties.

In the experiment 2, Artificial canal was constructed at Department of Animal Science, University of Peradeniya. After completely removal of water identified and counted the fish present. Next the canal was filled with new water, flows from the mud pond, through the paddy field by seepage. Next the canal was divided in to two sections using stones and nets. Upper section consisted of flowing water and the lower section consisted of still water. Two fish species Cherry barb, (*Puntius tittैया*) and Giant danio, (*Danio malabaricus*) 10 fishes in each species were introduced, without considering the sex.

RESULTS AND DISCUSSION

Experiment 1

Ferns grew only in shady areas. It was clear that shade was necessary for the growth of ferns. In the shade areas leaves of aquatic plants grew larger and the growth and development of these plants was also observed to be higher. In the sunny areas as well aquatic plants grew though their leaves were small.

Experiment 2

Three weeks after introducing the fish species (Cherry barb and Giant danio) water in the canal was reduced and fish were counted. At that time six Giant danios and two Cherry barbs were present. The experiment made it clear that Giant danio is a hardy fish species which can adapt themselves easily to a new environment. There was only two Cherry barbs living. Cherry barbs difficult to get adapted to a new environment.

CONCLUSION

Aquatic plants such as *Allocasia* when planted close to water grew extremely well. If there is organic matter and shade leaves grew larger. However when planted in sunny areas. Leaves grew smaller and the growth rate was slow. Hence the growth was continuous.

Cherry barb, which is an endemic fish found it difficult to adapt to environment. Even though, flowing water and other requirements were provided they may find it difficult to escape the problem. Hardy fish such as Giant danio can be easily get adapted to new environments.

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