CONTENTS

Acknowledgements	
Table of contents	i
List of Figures	iii
List of Tables	iv
List of Plates	iv
INTRODUCTION	01
CHAPTER 1.0 Experimental pond culture of Artemia parthenogenetica for biomass production	05
1.1 MATERIALS AND METHODS1.2 RESULTS	05 09
CHAPTER 2.0 Experimental pond culture of Artemia franciscana for biomass production	11
 2.1 MATERIALS AND METHODS 2.1.1 Experimental site and pond layout 2.1.2 Inoculation and fertilization 2.1.3 Water quality 2.1.4 Collection of cysts and biomass 2.1.5 Population studies 	11 11 12 12 12 13
 2.2 RESULTS 2.2.1 Cyst and biomass production 2.2.2 Physico-chemical characteristics 2.2.3 Artemia franciscana population 	13 13 16 18

.

pa	ge
F	0-

CHAPTER 3.0 Effect of processing, packing and storage on the hatching quality of <i>Artemia</i> cysts	22
3.1 MATERIALS AND METHODS	22
3.1.1 Processing	22
3.1.2 Storage	23
3.1.3 Study of hatching quality	24
3.2 RESULTS	25

.

CHAPIER 4.0 1	Nutritional evaluation of cultured Artemia	30
4.1	MATERIALS AND METHODS	30
	4.1.1 Use of Artemia as food for	
	a freshwater fish	30
	4.1.2 Use of Artemia as food for a marine	
	shrimp	31
	4.1.3 Data analysis	33
	4.1.4 Evaluation of fatty acid composition	33
4.2	RESULTS	34
	4.2.1 Use of Artemia as a feed	34
	4.2.2 Fatty acid composition	39
CHAPTER 5.0	DISCUSSION	46
		46 46
5.1	Biomass production by Sri Lankan Artemia	
5.1 5.2	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia	46
5.1 5.2 5.3	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia Biomass production by SFB Artemia	46 48
5.1 5.2 5.3	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia	46 48
5.1 5.2 5.3 5.4	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia Biomass production by SFB Artemia Variation in Artemia populations in culture ponds	46 48 50
5.1 5.2 5.3 5.4 5.5	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia Biomass production by SFB Artemia Variation in Artemia populations in	46 48 50 51
5.1 5.2 5.3 5.4 5.5 5.6	Biomass production by Sri Lankan Artemia Cyst production by SFB Artemia Biomass production by SFB Artemia Variation in Artemia populations in culture ponds Shelf-life of processed cysts	46 48 50 51 53

.

.

List of Figures

Fig.	1.1a-d.	Physico-chemical characteristics in <i>Artemia</i> culture pond and rainfall during the period of the experiment.	10a
Fig.	2.1a-e.	Fecundity, cyst harvest, salinity, temperature and rainfall during the experimental culture period using Artemia franciscana.	17
Fig.	2.2.	Population variation of Artemia franciscana cultured in Palavi.	20
Fig.	2.3.	Percentage of males and females among Artemia franciscana culture in Palavi.	21
Fig.	3.1.	Hatching percentage in <i>Artemia</i> cysts processed and packed according to different methods.	28
Fig.	4.1a-b.	Mean length and mean weight in <i>Carassius auratus</i> fed two <i>Artemia</i> strains.	38
Fig.	4.2.	Percentage total fatty acids and percentage n3-HUFA in <i>Artemia</i> and in fish and shrimps fed the two <i>Artemia</i> strains.	41

List of Tables

Table 2.1	Cyst production by Artemia franciscana.	15
Table 3.1	Analysis of Variance results on hatching percentage in <i>Artemia</i> cysts processed and packed according to different methods.	29
Table 4.1	Abbreviations used in Chapter 4.	35
Table 4.2	Mean length and mean weight in initial fish and shrimps and those fed the two Artemia strains.	37
Table 4.3	Fatty acid profile of the two Artemia strains, initial fish and shrimps and those fed the two Artemia strains.	40
Table 4.4	Fatty acid profile of the parental Artemia.	42
Table 4.5	Fatty acid profile of biomass of the two Artemia strains cultured in Palavi.	43

List of Plates

•

Plate 1.	Culture ponds in Palavi	06
Plate 2.	Cysts of Artemia parthenogenetica	06
Plate 3.	Instar I nauplius of Artemia parthenogenetica	07
Plate 4.	Cadjan shades in Artemia pond	07
Plate 5.	Earthen pond covered with net	lla
Plate 6.	Artemia cysts packed in glass bottles	27
Plate 7.	Artemia cysts vacuum-packed in pouches	27