

List of Figures

| | Page No. |
|-----------------------------------------------------------------------------|----------|
| 1.1 Fish muscle | 7 |
| 1.2 White fish muscle | 7 |
| 1.3 Map of The study area | 23 |
| 1.4a Number of species under various order | 39 |
| 1.4b Number of species distributed under each family | 39 |
| 1.4c Percentage of species under various categories as per IUCN | 40 |
| 1.5.1 Fish catching area at Diplai Beel | 42 |
| 1.5.2 People catching fish at Gaurang River | 42 |
| 1.5.3 People catching fish at village wetlands | 42 |
| 1.5.4 Some commonly used fish gears used by Bodo people | 42 |
| 1.5.5 Chanda nama collected at fishing site | 42 |
| 1.5.6 Fishes selling in nearby market | 42 |
| 2.1.1 <i>Barilius vagra</i> | 43 |
| 2.1.2 <i>Neoeucirrhichthys maydelli</i> | 43 |
| 2.1.3 <i>Chanda nama</i> | 43 |
| 2.1.4 <i>Channa gachua</i> | 43 |
| 2.1.5 <i>Rasbora daniconius</i> | 44 |
| 2.1.6 <i>Channa punctatus</i> | 44 |
| 2.1.7 <i>Trichogaster fasciata</i> | 44 |
| 2.1.8 <i>Xenentodon cancila</i> | 44 |
| 2.1.9 <i>Amblypharyngodon mola</i> | 45 |
| 2.1.10 <i>Macrognathus pancalus</i> | 45 |
| 2.2.1 Proximate composition (%) of <i>Barilius vagra</i> | 47 |
| 2.2.2 Proximate composition (%) of <i>Neoeucirrhichthys maydelli</i> | 47 |
| 2.2.3 Proximate composition (%) of <i>Chanda nama</i> | 47 |
| 2.2.4 Proximate composition (%) of <i>Channa gachua</i> | 48 |
| 2.2.5 Proximate composition (%) of <i>Rasbora daniconius</i> | 48 |
| 2.2.6 Proximate composition (%) of <i>Channa punctatus</i> | 48 |
| 2.2.7 Proximate composition (%) of <i>Trichogaster fasciata</i> | 49 |
| 2.2.8 Proximate composition (%) of <i>Xenentodon cancila</i> | 49 |
| 2.2.9 Proximate composition (%) of <i>Amblypharyngodon mola</i> | 49 |
| 2.2.10 Proximate composition (%) of <i>Macrognathus pancalus</i> | 50 |
| 2.3.1 HPLC chromatogram Amino acids of standard soln | 53 |
| 2.3.2 HPLC chromatogram Amino acids of <i>Barilius vagra</i> | 53 |
| 2.3.3 HPLC chromatogram Amino acids of <i>Neoeucirrhichthys maydelli</i> | 54 |
| 2.3.4 HPLC chromatogram Amino acids of <i>Chanda nama</i> | 54 |
| 2.3.5 HPLC chromatogram Amino acids of <i>Channa gachua</i> | 55 |
| 2.3.6 HPLC chromatogram Amino acids of <i>Rasbora daniconius</i> | 55 |
| 2.3.7 HPLC chromatogram Amino acids of <i>Channa punctatus</i> | 56 |
| 2.3.8 HPLC chromatogram Amino acids of <i>Trichogaster fasciata</i> | 56 |
| 2.3.9 HPLC chromatogram Amino acids of <i>Xenentodon cancila</i> | 57 |
| 2.3.10 HPLC chromatogram Amino acids of <i>Amblypharyngodon mola</i> | 57 |
| 2.3.11 HPLC chromatogram Amino acids of <i>Macrognathus pancalus</i> | 58 |
| 2.4.1 G.C.-M.S. Chromatogram of Fatty acids of <i>Barilius vagra</i> | 68 |
| 2.4.2 G.C. Chromatogram of Fatty acids of <i>Neoeucirrhichthys maydelli</i> | 68 |
| 2.4.3 G.C. Chromatogram of Fatty acids of <i>Chanda nama</i> | 69 |

| | | |
|----------|--------------------------------------------------------------------------------------------------------------------|-----|
| 2.4.4 | G.C. Chromatogram of Fatty acids of <i>Channa gachua</i> | 69 |
| 2.4.5 | G.C. Chromatogram of Fatty acids of <i>Rasbora daniconius</i> | 70 |
| 2.4.6 | G.C. Chromatogram of Fatty acids of <i>Channa punctatus</i> | 70 |
| 2.4.7 | G.C. Chromatogram of Fatty acids of <i>Trichogaster fasciata</i> | 71 |
| 2.4.8 | G.C. Chromatogram of Fatty acids of <i>Xenentodon cancila</i> | 71 |
| 2.4.9 | G.C. Chromatogram of Fattyacids of <i>Amblypharyngodon mola</i> | 72 |
| 2.4.10 | G.C. Chromatogram of Fattyacids of <i>Macrognathus pancalus</i> | 72 |
| 2.5.1(a) | Calibration Curve-I for standard Iron solution | 82 |
| 2.5.1(b) | Calibration Curve-II for standard Iron solution | 82 |
| 2.5.2(a) | Calibration Curve-I for standard Zinc solution | 83 |
| 2.5.2(b) | Calibration Curve-II for standard Zinc solution | 84 |
| 2.5.3 | Calibration Curve-I for standard Phosphorous solution | 85 |
| 2.5.4(a) | Calibration Curve-I for standard Calcium solution | 86 |
| 2.5.4(b) | Calibration Curve-II for standard Calcium solution | 86 |
| 2.5.5(a) | Comparison of Iron and Zinc content in different fish species | 88 |
| 2.5.5(b) | Comparison of Phosphorous and Calcium content in different fish species | 88 |
| 2.6.1 | HPLC Chromatogram of standard Vitamin A and Vitamin D solutions | 92 |
| 2.6.2(a) | HPLC Chromatogram of Vitamin A of <i>Barilius vagra</i> | 92 |
| 2.6.2(b) | HPLC Chromatogram of Vitamin D of <i>Barilius vagra</i> | 93 |
| 2.6.3 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Neoeucirrhichthys maydelli</i> | 93 |
| 2.6.4 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Chanda nama</i> | 94 |
| 2.6.5(a) | HPLC Chromatogram of Vitamin A of <i>Channa gachua</i> | 95 |
| 2.6.5(b) | HPLC Chromatogram of Vitamin D of <i>Channa gachua</i> | 95 |
| 2.6.6 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Channa punctatus</i> | 96 |
| 2.6.7(a) | HPLC Chromatogram of Vitamin A of <i>Rasbora daniconius</i> | 97 |
| 2.6.7(b) | HPLC Chromatogram of Vitamin D of <i>Rasbora daniconius</i> | 97 |
| 2.6.8 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Trichogaster fasciata</i> | 98 |
| 2.6.9(a) | HPLC Chromatogram of Vitamin A of <i>Xenentodon cancila</i> | 99 |
| 2.6.9(b) | HPLC Chromatogram of Vitamin D of <i>Xenentodon cancila</i> | 99 |
| 2.6.10 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Amblypharyngodon mola</i> | 100 |
| 2.6.11 | HPLC Chromatogram of Vitamin A and Vitamin D of <i>Macrognathus pancalus</i> | 101 |
| 2.7 | Comparision of Vitamin A and Vitamin D content in different fish | 102 |
| 2.8.1 | Variation of pH in different water bodies | 104 |
| 2.8.2 | Variation of temperature in different water bodies | 105 |
| 2.8.3 | Variation of TDS in different water bodies | 105 |
| 2.8.4 | Variation of DO in different water bodies | 105 |
| 2.8.5 | Variation of BOD in different water bodies | 106 |
| 2.8.6 | Variation of COD in different water bodies | 106 |
| 2.8.7 | Variation of alkalinity in different water bodies | 106 |
| 2.8.8 | Variation of turbidity in different water bodies | 107 |
| 2.8.9 | Variation of salinity in different water bodies | 107 |
| 2.8.10 | Variation of viscosity in different water bodies | 107 |
| 3.1 | Comparision of Market values in Rs./kg of different fishes | 111 |
| 3.2 | Comparision of proximate composition of the selected fish species with that of other commercially important fishes | 113 |
| 3.3 | Comparision of the Fe & Zn content of the selected fish species with that of other commercially important fishes | 114 |
| 3.4 | Comparision of the P & Ca content of the selected fish species with that of other commercially important fishes | 115 |

