

Appendix

Appendix-1: Weight data of the fishes at different sampling (g):

| | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th sampling |
|------------------------------------|------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Date | 29.04.19 | 14.05.19 | 29.05.19 | 13.06.19 | 28.06.19 | 13.07.19 | 28.07.19 | 10.08.19 | 26.08.19 | 11.09.19 |
| Treatment | Weight data of the fishes, g | | | | | | | | | |
| T₁ R₁ | 0.0725 | 0.0825 | 0.10725 | 0.1321 | 0.1771 | 0.21952 | 0.2318 | 0.2672 | 0.3125 | 0.3234 |
| T₁ R₂ | 0.07125 | 0.0835 | 0.10235 | 0.1452 | 0.1872 | 0.2025 | 0.2689 | 0.2875 | 0.3013 | 0.3125 |
| T₁ R₃ | 0.07425 | 0.0795 | 0.087 | 0.0925 | 0.1323 | 0.1785 | 0.2285 | 0.2681 | 0.2968 | 0.3124 |
| T₂ R₁ | 0.065 | 0.065 | 0.08775 | 0.119 | 0.134 | 0.18325 | 0.284 | 0.3078 | 0.3315 | 0.3684 |
| T₂ R₂ | 0.067 | 0.0698 | 0.07225 | 0.0978 | 0.1487 | 0.19325 | 0.254 | 0.2772 | 0.3124 | 0.3588 |
| T₂ R₃ | 0.06825 | 0.06935 | 0.07075 | 0.07542 | 0.1185 | 0.1658 | 0.249 | 0.2715 | 0.2975 | 0.3489 |
| T₃ R₁ | 0.04475 | 0.04975 | 0.05 | 0.0524 | 0.0848 | 0.1128 | 0.168 | 0.1978 | 0.2453 | 0.2645 |
| T₃ R₂ | 0.05 | 0.0656 | 0.0695 | 0.07 | 0.0884 | 0.1012 | 0.1436 | 0.1664 | 0.1946 | 0.2272 |
| T₃ R₃ | 0.05325 | 0.06915 | 0.085 | 0.0865 | 0.0988 | 0.1328 | 0.1784 | 0.1876 | 0.2163 | 0.2441 |
| T₄ R₁ | 0.05225 | 0.0655 | 0.0765 | 0.0812 | 0.1012 | 0.1478 | 0.188 | 0.1963 | 0.2478 | 0.2746 |
| T₄ R₂ | 0.05625 | 0.0575 | 0.06025 | 0.06225 | 0.0754 | 0.1031 | 0.178 | 0.1986 | 0.2354 | 0.2643 |
| T₄ R₃ | 0.05125 | 0.0679 | 0.06925 | 0.07125 | 0.0925 | 0.1312 | 0.189 | 0.1978 | 0.2231 | 0.2512 |

Appendix-2: Length data of the fishes at different sampling of platy fish (cm):

| | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|------------------------------------|-------------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|
| Date | 29.04.2019 | 14.05.19 | 29.05.19 | 13.06.2019 | 28.06.19 | 13.07.19 | 28.07.19 | 10.08.19 | 26.08.19 | 11.09.19 |
| Treatment | Length data of the fishes, cm | | | | | | | | | |
| T₁ R₁ | 1.6 | 1.8 | 1.8 | 1.8 | 1.95 | 2.15 | 2.15 | 2.17 | 2.2 | 2.2 |
| T₁ R₂ | 1.55 | 1.7 | 1.8 | 1.8 | 2.05 | 2.2 | 2.2 | 2.3 | 2.3 | 2.3 |
| T₁ R₃ | 1.65 | 1.7 | 1.8 | 1.8 | 2 | 2.15 | 2.2 | 2.2 | 2.3 | 2.3 |
| T₂ R₁ | 1.625 | 1.8 | 1.8 | 1.9 | 1.98 | 2 | 2 | 2.2 | 2.3 | 2.4 |
| T₂ R₂ | 1.525 | 1.7 | 1.7 | 1.7 | 1.9 | 2 | 2.1 | 2.15 | 2.2 | 2.4 |
| T₂ R₃ | 1.7 | 1.8 | 1.8 | 1.7 | 2.1 | 2.2 | 2.2 | 2.3 | 2.3 | 2.4 |
| T₃ R₁ | 1.475 | 1.5 | 1.7 | 1.7 | 1.8 | 1.8 | 1.9 | 2 | 2 | 2.1 |
| T₃ R₂ | 1.6 | 1.6 | 1.7 | 1.7 | 1.8 | 1.9 | 1.9 | 2 | 2.1 | 2.1 |
| T₃ R₃ | 1.4 | 1.5 | 1.6 | 1.7 | 1.8 | 1.8 | 1.8 | 2 | 2 | 2.1 |
| T₄ R₁ | 1.45 | 1.4 | 1.6 | 1.76 | 1.8 | 1.8 | 1.8 | 2 | 2 | 2.1 |
| T₄ R₂ | 1.45 | 1.5 | 1.5 | 1.55 | 1.75 | 1.8 | 1.9 | 2 | 2.1 | 2.2 |
| T₄ R₃ | 1.25 | 1.5 | 1.6 | 1.75 | 1.8 | 1.95 | 1.95 | 2.1 | 2.1 | 2.1 |

Appendix-3: Average weight of platy fish (g):

| | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Date | 29.04.2019 | 14.05.19 | 29.05.19 | 13.06.2019 | 28.06.19 | 13.07.19 | 28.07.19 | 10.08.19 | 26.08.19 | 11.09.19 |
| Treatment | Average weight, g | | | | | | | | | |
| T₁ | 0.07266666 7 | 0.08183333 3 | 0.09886666 7 | 0.12326666 7 | 0.16553333 3 | 0.20017333 3 | 0.24306666 7 | 0.27426666 7 | 0.30353333 3 | 0.3161 |
| T₂ | 0.06675 | 0.06805 | 0.07691666 7 | 0.09740666 7 | 0.13373333 3 | 0.18076666 7 | 0.26233333 3 | 0.2855 | 0.3138 | 0.3587 |
| T₃ | 0.06266666 7 | 0.06816666 7 | 0.06783333 3 | 0.0681 | 0.09066666 7 | 0.1156 | 0.16333333 3 | 0.18393333 3 | 0.21873333 3 | 0.2453 |
| T₄ | 0.05991666 7 | 0.06696666 7 | 0.06866666 7 | 0.07156666 7 | 0.0897 | 0.12736666 7 | 0.185 | 0.19756666 7 | 0.23543333 3 | 0.2634 |

Appendix-4: Average length of platy fish (cm):

| | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| Date | 29.04.2019 | 14.05.19 | 29.05.19 | 13.06.2019 | 28.06.19 | 13.07.19 | 28.07.19 | 10.08.19 | 26.08.19 | 11.09.19 |
| Treatment | Average length, cm | | | | | | | | | |
| T₁ | 1.6 | 1.733 | 1.8 | 1.8 | 2 | 2.167 | 2.183333333 | 2.223 | 2.2667 | 2.2667 |
| T₂ | 1.616 | 1.766 | 1.767 | 1.767 | 1.993 | 2.067 | 2.1 | 2.216666667 | 2.266666667 | 2.4 |
| T₃ | 1.49 | 1.533 | 1.667 | 1.7 | 1.8 | 1.833 | 1.866666667 | 2 | 2.033333333 | 2.1 |
| T₄ | 1.383 | 1.4667 | 1.567 | 1.687 | 1.783 | 1.85 | 1.883333333 | 2.033333333 | 2.066666667 | 2.1333 |

Appendix-5: Average weight gain of platy fish, (g):

| Sampling | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|----------------------|------------------------|--------------|--------------|--------------|--------------|--------------|--------------|-----------------|---------------|---------------|
| Treatment | Average weight gain, g | | | | | | | | | |
| T₁ | 0.050067 | 0.0091667 | 0.017033 | 0.0244 | 0.0422667 | 0.03464 | 0.0428933 | 0.0312 | 0.029266 6 | 0.0125667 |
| T₂ | 0.04415 | 0.0013 | 0.0088667 | 0.02049 | 0.0363267 | 0.0470333] | 0.0815667 | 0.02316666 7 | 0.0283 | 0.0449 |
| T₃ | 0.040067 | 0.0055 | -0.00033 | 0.0002667 | 0.0225667 | 0.0249333 | 0.0477333 | 0.0206 | 0.0348 | 0.02653 |
| T₄ | 0.0373166 7 | 0.00705 | 0.0017 | 0.0029 | 0.0181333 | 0.0376667 | 0.0576333 | 0.01256666 7 | 0.037866 6 | 0.02796 |

Appendix-6: Average length gain of platy fish, (cm):

| Sampling | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|----------------------|-------------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|
| Treatment | Average length gain, cm | | | | | | | | | |
| T₁ | 0.3 | 0.133 | 0.067 | 0 | 0.2 | 0.167 | 0.016333333 | 0.039667 | 0.043667 | 0 |
| T₂ | 0.316 | 0.15 | 0.001 | 0 | 0.226 | 0.074 | 0.033 | 0.116666667 | 0.05 | 0.133 |
| T₃ | 0.19 | 0.043 | 0.134 | 0.033 | 0.1 | 0.033 | 0.033666667 | 0.133333333 | 0.03333333 | 0.0666667 |
| T₄ | 0.083 | 0.0837 | 0.1003 | 0.12 | 0.096 | 0.067 | 0.033333333 | 0.15 | 0.033333334 | 0.0666333 |

Appendix-7: Specific Growth Rate per sampling (%):

| Treatment | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th sampling |
|------------------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| T₁ R₁ | 0.333 | 0.067 | 0.16501 | 0.165675 | 0.300015 | 0.282814 | 0.081871 | 0.236012 | 0.302015 | 0.07267 |
| T₁ R₂ | 0.324 | 0.082 | 0.125673 | 0.285681 | 0.280014 | 0.102005 | 0.442689 | 0.124006 | 0.092005 | 0.07467 |
| T₁ R₃ | 0.344 | 0.035 | 0.050002 | 0.036669 | 0.265347 | 0.308015 | 0.33335 | 0.264013 | 0.191343 | 0.104005 |
| T₂ R₁ | 0.189 | 0 | 0.151674 | 0.208344 | 0.100005 | 0.32835 | 0.6717 | 0.158675 | 0.158008 | 0.246 |
| T₂ R₂ | 0.296 | 0.019 | 0.016334 | 0.170342 | 0.33935 | 0.297015 | 0.40502 | 0.154674 | 0.234678 | 0.3093 |
| T₂ R₃ | 0.304 | 0.007 | 0.009334 | 0.031135 | 0.287214 | 0.315349 | 0.554694 | 0.150008 | 0.173342 | 0.3427 |
| T₃ R₁ | 0.148 | 0.033 | 0.00167 | 0.016001 | 0.216011 | 0.186676 | 0.368018 | 0.198677 | 0.316683 | 0.128 |
| T₃ R₂ | 0.183 | 0.104 | 0.026001 | 0.003334 | 0.122673 | 0.085338 | 0.282681 | 0.152008 | 0.188009 | 0.2173 |
| T₃ R₃ | 0.204 | 0.106 | 0.105672 | 0.01 | 0.082004 | 0.226678 | 0.304015 | 0.061336 | 0.191343 | 0.1853 |
| T₄ R₁ | 0.198 | 0.0883 | 0.073337 | 0.031335 | 0.13334 | 0.310682 | 0.268013 | 0.055336 | 0.343351 | 0.1787 |
| T₄ R₂ | 0.224 | 0.008 | 0.018334 | 0.013334 | 0.087671 | 0.184676 | 0.499358 | 0.13734 | 0.245346 | 0.1927 |
| T₄ R₃ | 0.191 | 0.111 | 0.009 | 0.013334 | 0.141674 | 0.258013 | 0.385353 | 0.05867 | 0.168675 | 0.1873 |

Appendix-8: Average specific growth rate per sampling (%):

| Treatment | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th sampling |
|----------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
| T₁ | 0.33366 | 0.0613 | 0.1135 | 0.1626 | 0.281792 | 0.23094 | 0.2859 | 0.20801 | 0.195121 | 0.0837 |
| T₂ | 0.263 | 0.00866 | 0.0591 | 0.136607 | 0.242189 | 0.31357 | 0.543804 | 0.154452 | 0.188676 | 0.30083 |
| T₃ | 0.17833 | 0.081 | 0.044447 | 0.009778 | 0.140229 | 0.16623 | 0.318238 | 0.13734 | 0.23201 | 0.1769 |
| T₄ | 0.20433 | 0.0691 | 0.0335 | 0.01933 | 0.120895 | 0.25112 | 0.384241 | 0.08378 | 0.25245 | 0.164008 |

Appendix-9: Carotenoid content, (mg/g):

| Treatment | T₁ R₁ | T₁ R₂ | T₁ R₃ | T₂ R₁ | T₂ R₂ | T₂ R₃ | T₃ R₁ | T₃ R₂ | T₃ R₃ | T₄ R₁ | T₄ R₂ | T₄ R₃ |
|----------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|------------------------------------|
| Carotenoid content (mg/g) | 0.00452 6 | 0.0042 6 | 0.00464 9 | 0.00518 7 | 0.0052 6 | 0.005762 3 | 0.00321 5 | 0.0036 8 | 0.00382 54 | 0.00432 5 | 0.00405 78 | 0.00415 7 |

Appendix-10: Visual inspection of fish coloration:

| Treatment | 1st Sampling | 2nd Sampling | 3rd Sampling | 4th Sampling | 5th Sampling | 6th Sampling | 7th Sampling | 8th Sampling | 9th Sampling | 10th Sampling |
|----------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|--------------------------------|---------------------------------|
| T₁ | 12 red, 12 white | 12 red, 12 white | 12 red, 12 white | 15 red, 9 white | 17 red, 7 white | 19 red, 5 white | 19 red, 5 white | 19 red, 5 white | 19 red, 4 white | 17 red, 4 white |
| T₂ | 13 red, 11 white | 11 red, 13 white | 13 red, 11 white | 18 red, 6 white | 22 red, 2 white | 22 red, 2 white | 22 red, 2 white | 22 red, 2 white | 22 red, 2 white | 20 red, 1 white |
| T₃ | 6 red, 18 white | 7 red, 17 white | 9 red, 15 white | 11 red, 13 white | 16 red, 8 white | 17 red, 7 white | 17 red, 7 white | 17 red, 7 white | 17 red, 7 white | 10 red, 7 white |
| T₄ | 8 red, 16 white | 8 red, 16 white | 11 red, 13 white | 14 red, 10 white | 19 red, 5 white | 19 red, 5 white | 19 red, 5 white | 19 red, 5 white | 19 red, 3 white | 16 red, 3 white |

Appendix-11: Number of death platy fish:

| | T₁R₁ | | T₁R₂ | | T₁R₃ | | T₂R₁ | | T₂R₂ | | T₂R₃ | |
|-------------------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|
| Death fish | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date |
| | - | | 1 | 23.09.19 | 2 | 01.09.19 | - | | - | | 3 | 05.09.19 |
| | - | | - | | | | - | | - | | - | |
| | T₃R₁ | | T₃R₂ | | T₃R₃ | | T₄R₁ | | T₄R₂ | | T₄R₃ | |
| | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date |
| | 1 | 29.08.19 | 1 | 03.09.19 | 2 | 29.08.19 | 2 | 28.08.19 | 2 | 21.08.19 | - | |
| | 2 | 02.09.19 | 1 | 27.08.19 | - | | | | 1 | 07.09.19 | - | |

Appendix-12: Number of platy fish fry:

| | T₁R₁ | | T₁R₂ | | T₁R₃ | | T₂R₁ | | T₂R₂ | | T₂R₃ | |
|-----------------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|-----------------------------------|----------|
| Fish fry | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date |
| | 2 | 18.08.19 | 4 | 22.08.19 | 2 | 20.08.19 | 4 | 05.08.19 | 3 | 05.08.19 | 4 | 08.08.19 |
| | 2 | 29.08.19 | 3 | 31.08.19 | 3 | 30.08.19 | 4 | 18.08.19 | 5 | 20.08.19 | 5 | 25.08.19 |
| | T₃R₁ | | T₃R₂ | | T₃R₃ | | T₄R₁ | | T₄R₂ | | T₄R₃ | |
| | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date | Number | Date |
| | 1 | 26.08.19 | 2 | 26.09.19 | 2 | 29.08.19 | 1 | 01.09.19 | 3 | 06.09.19 | 2 | 03.09.19 |
| | 2 | 02.09.19 | 1 | 07.09.19 | - | | | | - | | - | |