Growth and Reproductive Performance of Rainbow Trout (*Oncorhynchus mykiss*) Bhutan Population Under Specific Condition at Doi Inthanon, Thailand

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Abstract

Study on the growth performance of rainbow trout Bhutan population from 133.27±5.60 g, 20.07±0.36 cm (240 days old) to mature. The study composed of two phases. In the first phase, fish were reared to marketable size (250-300 g), and the second phase, fish were reared to mature stage. Fish were fed 40% protein, 7% fat feed, and reared in three of 28 m^2 concrete raceways.

At the first phase, fish were reared during December 2018 to February 2019 in 11.0 – 19.5 $^{\circ}C$ water temperature. At the end of first phase (330 days old), fish had average weight, length, weight gain per day, percentage weight gain per day, specific growth rate, the thermal growth coefficient, feed intake rate, feed conversion rate ratio, and survival rate were 304.57±22.67 g ; 27.68±1.28 cm ; 2.19±0.97, 2.04±0.25, 1.90±0.31 g/day ; 49.30±24.13, 29.75±11.15, 19.30±8.30 % ; 1.31±0.53, 1.08±0.13, 0.92±0.13 %/day ; 1.42±0.59, 1.03±0.32, 0.76±0.31 ; 1.00±0.06, 1.21±0.11, 1.10±0.04 %/day ; 0.87±0.36, 1.56±0.69, 2.20±1.18 and 99.13±0.33, 98.53±0.64, 85.33±0.74 %, respectively. The highest in size distribution of 250 – 300 g was 22.67 %. The weight – length coefficiency condition factor was 1.44 – 1.54.

In the second phase, fish were reared during March to August 2019 in 14.5 – 24.5 $^{\circ}C$ water temperature. At the end of second phase (520 days old), (six months rearing period) fish had average weight, length, weight gain per day, percentage weight gain per day, specific growth rate, the thermal growth coefficient, feed intake rate, feed conversion rate ratio, and survival rate were 660.90±232.32 g ; 35.49±4.28 cm ; 1.92±0.40, 1.95±0.36, -2.57±0.85, 4.45±0.58, 3.51±1.30, 2.46±7.74 g/day ; 19.26±5.22, 17.04±8.99, -17.83±4.15, 38.53±5.67, 21.64±7.22, 12.56±39.57 % ; 0.83±0.13, 0.77±0.10, -0.66±0.17, 1.08±0.14, 0.65±.02, 0.21±1.10 %/day ; 0.81±0.24, 0.75±0.38, -0.95±0.27, 1.59±0.20, 1.05±0.35, 0.41±1.70 ; 0.99±0.02, 1.10±0.01, 0.52±0.04, 1.48±0.05, 1.46±0.06 %/day ; 1.77±0.46, 2.47±1.10, -0.85±0.32, 1.46±0.24, 2.46±1.01 and 69.50±1.85, 62.04±2.53, 58.73±2.61, 55.83±2.74, 55.25±2.65 %, respectively. The highest in size distribution of 601 – 800 g was 38.80 % with another portion size. The weight – length coefficiency condition factor was between 1.29 – 1.60.

In conclusion, the rainbow trout Bhutan population showed normal pattern of growth performance when reared in specific condition at Doi Inthanon, Thailand.

Keywords : Rainbow trout Bhutan population, growth performance

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