

PP-02

Growth Response of Mixed Sex Nile tilapia *Oreochromis niloticus* to Maize Herbage and Silage Mixed Feed

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A study was conducted to analyze the growth performance of mixed-sex Nile tilapia (*Oreochromis niloticus*) with maize herbage and silage mixed feed. The experiment was conducted for 90 days in hapas (3m x 3m x 1m) suspended in cement walled pond in a completely randomized design with five treatments in triplicates. The treatments include: T1- Control (normal feed), T2- Normal feed + 10% herbage, T3- Normal feed + 10% silage, T4- Normal feed + 20% silage and T5- Normal feed + 30% silage. Maize was sown at rate of 100 kg/ha and harvested after 45 days for silage preparation. After proper sun drying, the plants were chopped to 1-2 cm and were filled into polythene silo bags layer by layer making air tight. Fermentation period was of 45 days at room temperature. Feed for different treatments were prepared using different ingredients including silage as well as freshly harvested herbage as per need. All hapas were stocked with Nile tilapia fish at rate of 4 fish/ m² and average stock weight 19.7±0.4 g/fish. The fish were fed with designated feed at rate of 3% of body weight for first month and 2% of body weight for the rest of the period.

Different water quality parameters such as water temperature, dissolved oxygen, pH, and Secchi disk visibility of pond was within the optimum range for Nile tilapia culture. The average crude protein in silage and herbage were respectively 8.3 and 7.4% while the average crude fibre were 27.5 and 32.1% respectively. Similarly, the pH of silage and herbage were 4.7 and 5.9 respectively. The average final weight was significantly higher ($p<0.05$) in T3 (52.1±1.4 g/fish) compared to T5 (46.6±1.5 g/fish) with no significant difference ($p>0.05$) with other treatments. There was no significant difference ($p>0.05$) survival rate while the DWG in T3 (0.35±0.01 g/fish/day) was significantly higher ($p<0.05$) than T4 (0.29±0.02 g/fish/day) and T5 (0.28±0.01 g/fish/day). Similarly, there was no significant difference in the EGFY among different treatments while the ENFY of T3 (0.52±0.01 kg/m²/yr) was significantly higher ($p<0.05$) than T5 (0.38±0.05 kg/m²/yr) with no significant difference ($p>0.05$) with other treatments. The AFCR was significantly lower in T3 (2.5±0.1) compared to T5 (3.4±0.4). Thus, from present study it can be concluded that inclusion of 10% silage in feed can be beneficial in terms of the growth and production of Nile tilapia.

Table: Growth and yield parameters of mixed-sex Nile tilapia

Particulars	T1	T2	T3	T4	T5
Average initial weight (g/fish)	19.0±0.4 ^a	18.4±0.9 ^a	20.2±1.2 ^a	20.0±0.9 ^a	21.0±0.7 ^a
Average final weight (g/fish)	46.4±1.3 ^{ab}	48.9±2.9 ^{ab}	52.1±1.4 ^a	45.7±1.2 ^b	46.6±1.5 ^{ab}
DWG (g/fish/day)	0.30±0.01 ^a	0.34±0.03 ^{ab}	0.35±0.01 ^a	0.29±0.02 ^b	0.28±0.01 ^b
SGR (%/day)	0.99±0.0 ^{ab}	1.11±0.07 ^a	1.06±0.05 ^a	0.92±0.08 ^{ab}	0.88±0.05 ^b
Survival rate (%)	90.0±0.8 ^a	90.0±3.0 ^a	95.0±2.9 ^a	97.0±3.3 ^a	90.0±2.9 ^a
EGFY (kg/m ² /yr)	0.75±0.01 ^a	0.80±0.07 ^a	0.89±0.03 ^a	0.79±0.0 ^a	0.75±0.05 ^a
ENFY (kg/m ² /yr)	0.41±0.0 ^{ab}	0.47±0.07 ^{ab}	0.52±0.01 ^a	0.43±0.0 ^{ab}	0.38±0.05 ^b
FCR	2.9±0.09 ^{ab}	2.7±0.27 ^{ab}	2.5±0.10 ^b	2.9±0.08 ^{ab}	3.4±0.43 ^a