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ARABIC SUMMARY

SUMMARY

In this work the effect of hormonal treatment for production of monosex Nile tilapia on the fish health. The results of this work are summarized as follows:

1. The effect of treatment with 17α-methyl testosterone at a concentration of 60 mg/kg diet for 21 days on body weight, body length and weight gain percent on *O. niloticus* fry indicted an increase in body weight body length and weight gain percent.

2. The effect of treatment with 17α-MT on sex reversal percent in *O. niloticus* fry revealed the presence of 98.5% males, 1% females and 0.5% intersex after application of the hormone as 60 mg/kg diet for 21 days.

3. The effect of treatment with 17α-methyl testosterone on the survival rate of *O. niloticus* fry and fingerlings indicted that the hormone treated *O. niloticus* survival rate was 72% and the non hormone treated control was 66.7%.

4. The residue of 17 α-methyl testosterone in treated *O. niloticus* indicated the presence of a significant increase in hormone level as early as the 3rd day of hormonal treated diet application in treated *O. niloticus* fry as compared with control non-treated *O. niloticus* fry . The increase in the hormonal values still significant higher in the treated *O. niloticus* tissue during the 21 days of hormonal treatment and still up to

30 days after stoppage of hormone treated diet application (21 days), after which the hormonal residue value started to decline towards the control value at 6 months of fish age.

5. The depletion rate of 17α-methyl testosterone residues in treated *O. niloticus* tissues after stoppage of hormonal treatment was very rapid.

6. The effect of 17α-methyl testosterone on histological structure of *O. niloticus* gonads examined at 16 weeks age revealed that testis of sex revered male showed lobular arrangement and different stages of spermatogenesis and spermatides. Some few examined testis showed different stages of spermatogenesis with the presence of few oogonia between the semineferous tubules (intersex). The histological structure of the intersex directed to male side. the ovary of non sex reversed female *O. niloticus* of 4 months age characterized by the presence of all stages of oogenesis.

7. The cytogenetic effect of 17α-methyl testosterone on treated *O. niloticus* fry revealed that the micronucleus appear in 1.3% of the hormone treated fish 1 month after treatment with the hormone, while those values of 0.8 and 0.6% after 2 months and 3 months of treatment with the hormone respectively.

8. The effect of 17α-methyl testosterone on the susceptibility of *O. niloticus* to *A. hydrophila* infection revealed a non significant differences between the hormonal and non hormonal treated *O. niloticus* to *A. hydrophila* infection.

9. The histopathological effect of 17α-methyl testosterone on treated *O. niloticus* revealed tissue alterations in the liver manifested by vacuolar degeneration and congestion and also in the muscle of treated fish in the form of muscle oedema and aggregation of melanophores and eosinophilic granular cells infiltration.