Microsatellite based genetic variations and relationships among some farmed Nile tilapia populations in Ghana: Implications on Nile tilapia culture

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❑ Problem

Limited genetic information on small-scale farmed Nile tilapia production in ponds

❑ Objectives

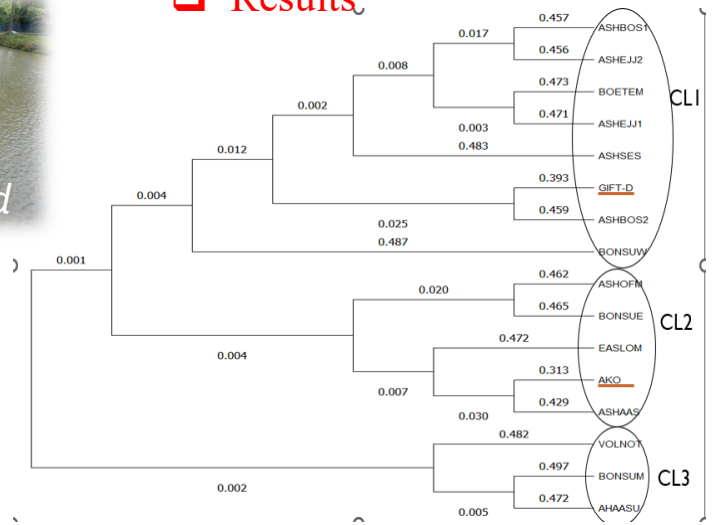
- ❖ To identify non-native strains cultured using microsatellite markers
- ❖ To determine genetic variations among Nile tilapia populations in six regions

❑ Methodology

- ✓ Fish sampling ;14 fish farms (earthen ponds)
- ✓ DNA extraction
- ✓ PCR technology
- ✓ Gel electrophoresis
- ✓ Data Analysis

Cutting Nile tilapia fins for genetic analysis

❑ Results



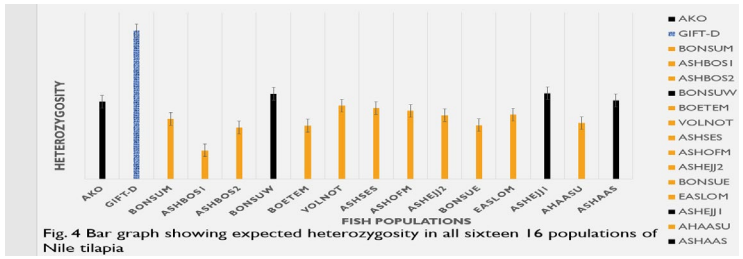
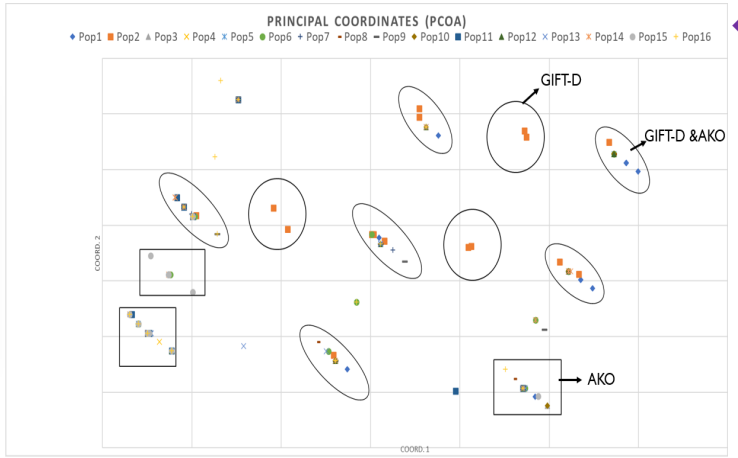


Fig. 4 Bar graph showing expected heterozygosity in all sixteen 16 populations of Nile tilapia



❑ Discussions

- ❖ 3 clustering patterns among fish populations
  - ➢ C1: genetic identity with GIFT-derived strain
  - ➢ C2: Genetic identity with Akosombo strain
  - ➢ C3:Genetic identity with wild or unimproved strains
- ❖ Admixture of strains among populations
- ❖ Low genetic variability among populations

❑ *Conclusions*

- ❖ *microsatellite markers are effective tools for genetic characterization*
- ❖ *Culture of non-native strains and low quality fingerlings among selected farms*

❑ *Recommendations*

- ❖ *Supply quality seed to replace inbred lines and encourage best farmer practices through training programs*

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