

Policy Brief

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Optimizing Feeding Strategies for Sustainable Nile Tilapia Aquaculture in Sub-Saharan Africa

Safina Musa



Contacts:

Mombasa Centre & Headquarters:

P.O. Box 81651-80100,
Mombasa
Tel: +254 (041475151/4)
Email:
kmfridirector@gmail.com

KMFRI Sangoro Centre:

P.O. Box 136, Papa-Onditi
Tel: +245 (770567443)
Email: kmfrisangoro@yahoo.com

Executive Summary

Feed represents 50–70% of aquaculture production costs in sub-Saharan Africa. Scientific evidence demonstrates that optimized feeding strategies improve growth performance while reducing feed costs. Stable isotope analysis confirms that natural pond productivity contributes substantially to fish nutrition. Implementing science-based feeding policies can improve aquaculture productivity, farmer profitability, and national food security.

Key Policy Messages

- ❖ Optimized feeding improves growth and profitability.
- ❖ Natural pond productivity reduces feed requirements.
- ❖ Science-based feeding improves sustainability.
- ❖ National feeding guidelines can improve aquaculture efficiency.

Policy Context

Tilapia aquaculture plays a critical role in food security and economic development. However, high feed costs limit profitability and growth of the sector.

Scientific Evidence

- ❖ Growth experiments and stable isotope analysis demonstrate that optimized feeding strategies improve growth performance and reduce feed costs.

Growth Performance

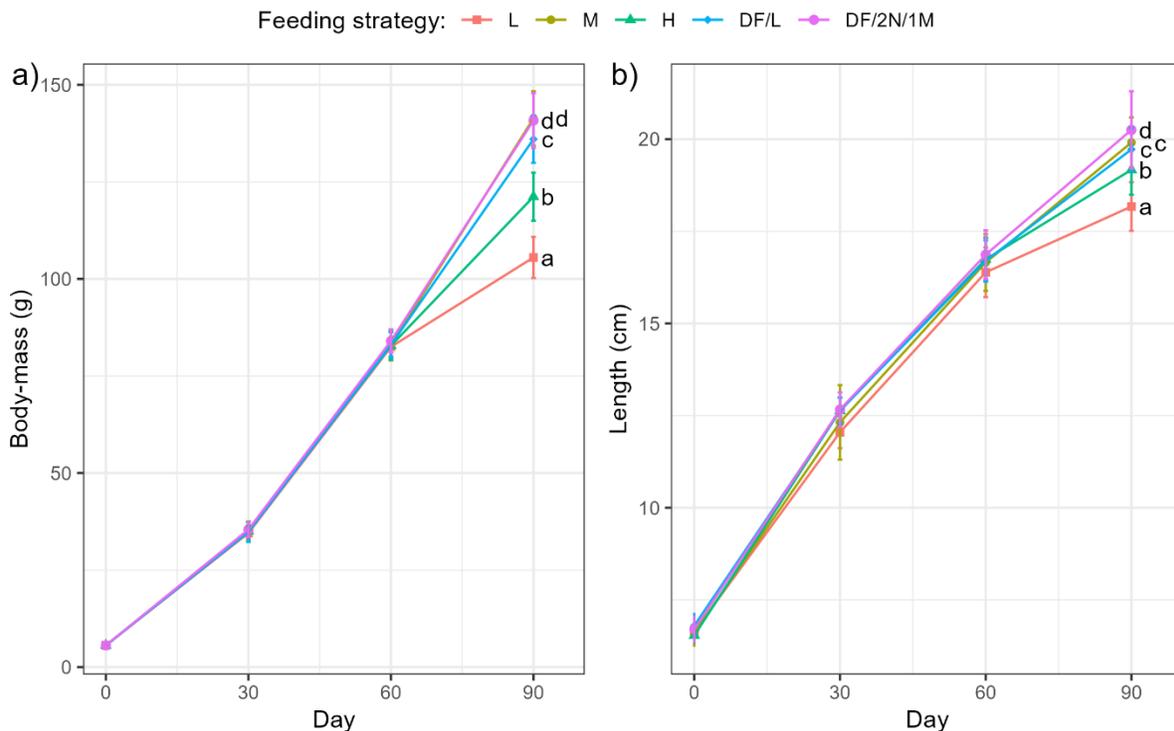
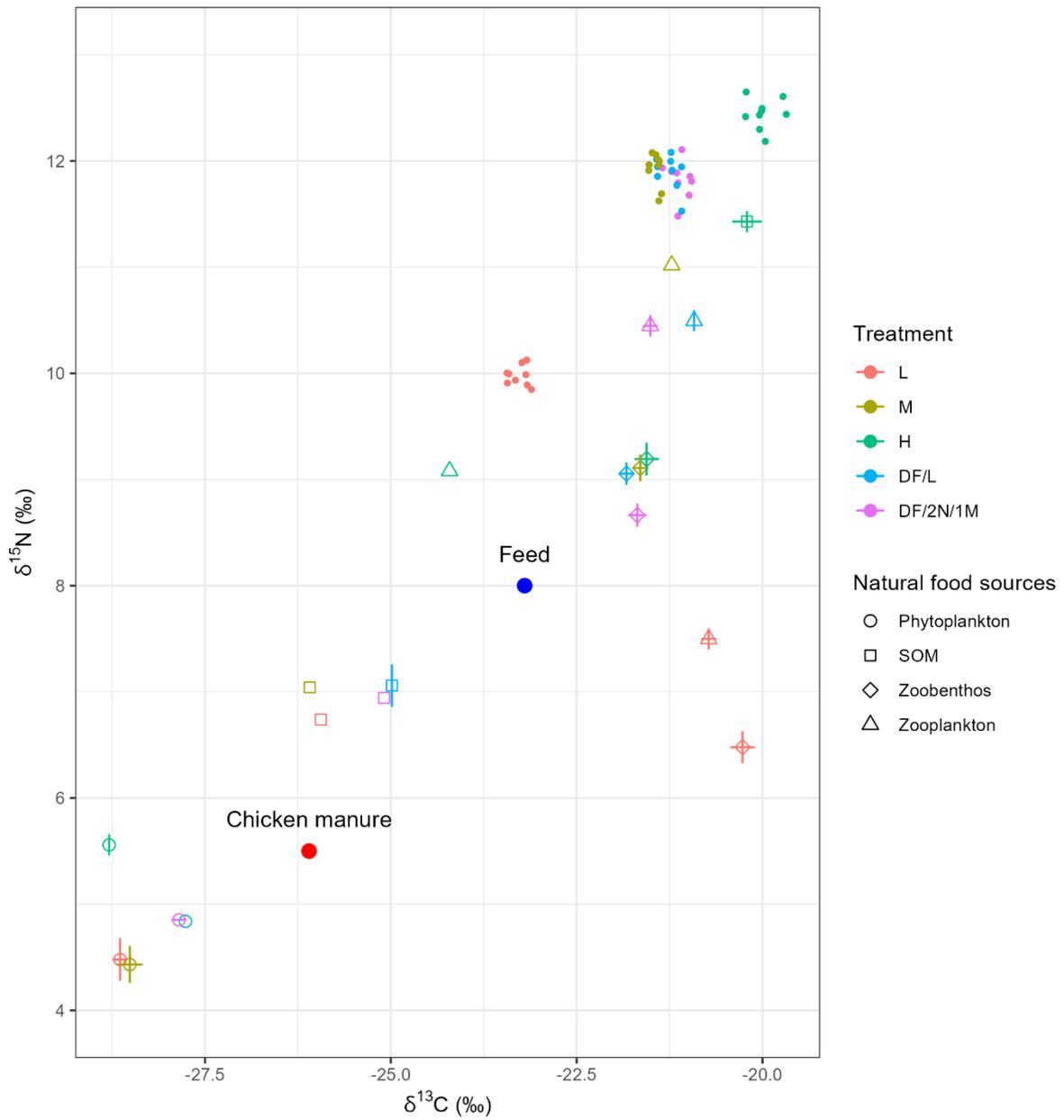


Figure 1. Growth performance under different feeding strategies.

Stable Isotope Evidence



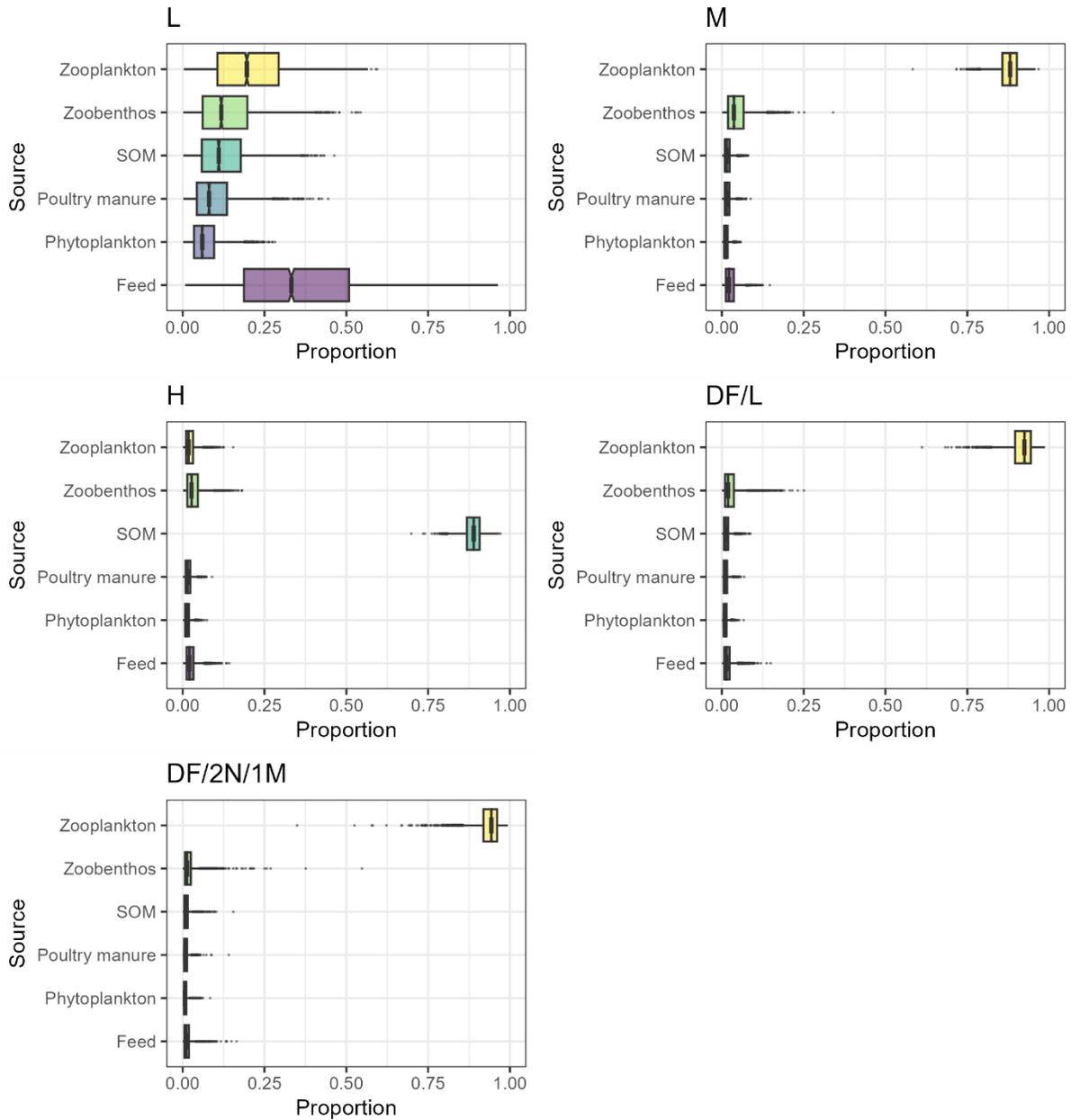


Figure 2–3. Stable isotope evidence confirming natural food contributions.

Policy Recommendations

- Develop national feeding guidelines.
- Strengthen extension services.
- Promote optimized feeding strategies.
- Support aquaculture research.

Conclusion

Science-based feeding strategies provide a major opportunity to improve aquaculture sustainability.