LOCAL SOLUTIONS, GLOBAL POTENTIAL: SUSTAINABLE AQUAFEEDS FROM MISSISSIPPI

Feed innovation born in the Mississippi Delta

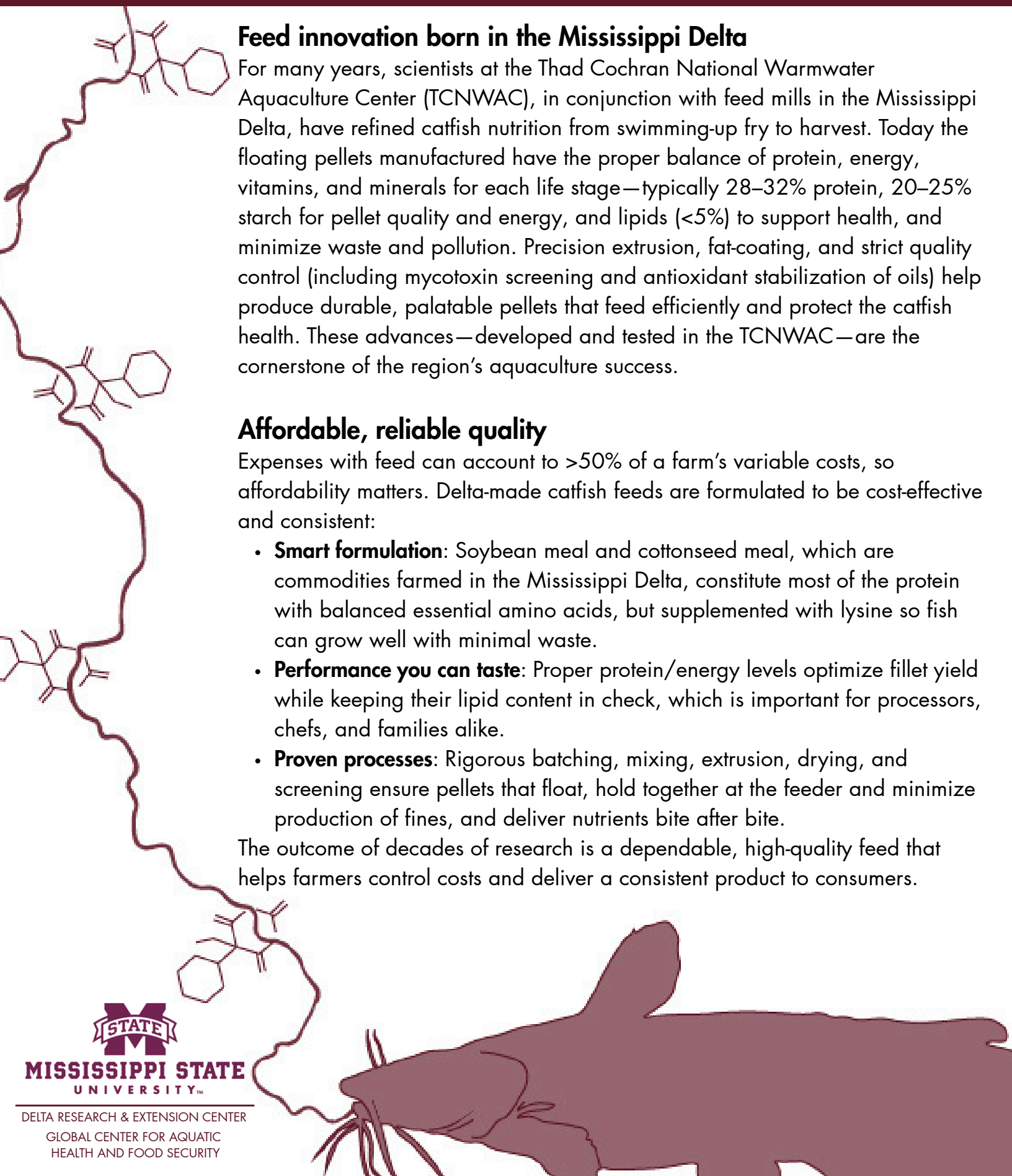
For many years, scientists at the Thad Cochran National Warmwater Aquaculture Center (TCNWAC), in conjunction with feed mills in the Mississippi Delta, have refined catfish nutrition from swimming-up fry to harvest. Today the floating pellets manufactured have the proper balance of protein, energy, vitamins, and minerals for each life stage—typically 28–32% protein, 20–25% starch for pellet quality and energy, and lipids (<5%) to support health, and minimize waste and pollution. Precision extrusion, fat-coating, and strict quality control (including mycotoxin screening and antioxidant stabilization of oils) help produce durable, palatable pellets that feed efficiently and protect the catfish health. These advances—developed and tested in the TCNWAC—are the cornerstone of the region's aquaculture success.

Affordable, reliable quality

Expenses with feed can account to >50% of a farm's variable costs, so affordability matters. Delta-made catfish feeds are formulated to be cost-effective and consistent:

- **Smart formulation**: Soybean meal and cottonseed meal, which are commodities farmed in the Mississippi Delta, constitute most of the protein with balanced essential amino acids, but supplemented with lysine so fish can grow well with minimal waste.
- **Performance you can taste**: Proper protein/energy levels optimize fillet yield while keeping their lipid content in check, which is important for processors, chefs, and families alike.
- **Proven processes**: Rigorous batching, mixing, extrusion, drying, and screening ensure pellets that float, hold together at the feeder and minimize production of fines, and deliver nutrients bite after bite.

The outcome of decades of research is a dependable, high-quality feed that helps farmers control costs and deliver a consistent product to consumers.



MISSISSIPPI STATE UNIVERSITY
DELTA RESEARCH & EXTENSION CENTER
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Sustainable ingredients, cleaner water

Sustainability is built into Delta catfish feeds:

- **Plant-based first**: During the grow-out stage, commercial feeds rely primarily on U.S.-crop-derived ingredients (soybean and cottonseed meals, corn germ, wheat midds, etc.), with no inclusion of fishmeal in food-fish diets. This reduces pressure on wild fisheries while supporting regional agriculture.
- **By-product utilization**: When economical and appropriate, coproducts like distiller-dried grains with solubles, corn-fermented protein, and animal protein concentrates can be included, turning agricultural by-products into high-value seafood—while staying mindful of pigment levels and nutrition needs.
- **Nutrient stewardship**: Feeds are designed around digestible protein, energy, and phosphorus targets, and mills can use highly available mineral sources (and enzymes like phytase) to improve nutrient uptake. Better digestibility means less nutrient loss to ponds and improved water quality.
- **Safe and traceable**: Ongoing ingredient screening (e.g., for mycotoxins) and established quality assurance programs keep feed safe for fish and families.

Together, these practices help farmers produce affordable, delicious U.S. farm-raised catfish while caring for Delta land and water—and the communities that depend on them. Policymaker support for feed innovation, ingredient research, and mill modernization will pay dividends in jobs, food security, and environmental performance across the region.

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This brief is based on information presented in A Practical Guide to Nutrition, Feeds, and Feeding of Catfish (Third Revision) *published by Menghe Li and Edwin Robinson as Bulletin 1230 of the Mississippi Agricultural and Forestry Experiment Station in 2021.*

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