

Researchers efforts turn 'trash fish' into chicken feed

COLLEGE PARK, Md. — A research scientist for the Maryland Agricultural Experiment Station has developed a new technique that could turn a million-dollar headache for U.S. commercial fishermen into a million-dollar business.

And when Toufik Hassan, a food science doctoral candidate at the University of Maryland, talks about chicken feed he isn't referring to the magnitude of profit potential—he's talking about the real thing: chicken feed.

A major problem of the commercial fishing industry is the disposal of "trash fish," underutilized species that have low economic value but can comprise as much as 50 percent of every catch pulled in by fishermen.

"Instead of throwing them back into the sea like so much garbage — the common practice today — why not turn them into something useful, like chicken feed?" asks Hassan.

The notion of manufacturing "fish silage" as a high-quality food prompting fast growth in poultry was pioneered by the Swedes in the 19th Century, but Hassan's novel approach solves a multitude of economic and technology related problems.

His technique is disarmingly simple and essentially turns a commercial fishing vessel into a floating two-industry factory — one to catch fish marketable for human consumption, and two, a chicken feed ingredient processing facility.

Since the so-called "trash fish"

have to be separated from the primary catch anyway — requiring labor and capital and returning nothing for the effort — Hassan proposes they be stored in onboard processing tanks.

"This works on a simple principle of fermentation," Hassan says. "The preserving costs are minimal, energy costs are low because the process does not require refrigeration, and the return on investment is, of course, much higher than throwing the fish back into the sea like garbage."

After 48 to 96 hours of pickling, the fish become a type of "slurry," high in protein and ready to be dried or mixed with a dry agent such as corn meal to provide a high-quality, inexpensive form of chicken feed, says Hassan. And, he adds, there is no objectionable fish odor.

Nationally, "this could be very significant to the fishing industry," says Tony P. Mazzaccaro, the assistant director for the Marine Advisory Program at the University of Maryland.

"Shrimpers, for example, may pull up a ton of what we call 'underutilized' fish for every 100 pounds of shrimp they can market," he says.

Earlier techniques called for expensive and sometimes hazardous chemicals, trained personnel to handle these substances and recurring replacement cost for equipment suffering from acid corrosion, but Hassan opted for simplicity. His fermentation technique is similar to that used to manufacture cheese

and yoghurt, requires no trained personnel and demands little capital investment.

"Basically, all you need is a tank, the fish, an energy source and a starter organism like lactose to get the process going," he says.

Hassan believes the technique is so simple and inexpensive he can forsee broiler producers setting up

shop — with fermentation facilities — next door to fish processing plants where they'll have a steady supply of raw material in the form of processing by-products.

And, he adds, this is exactly the kind of small capital investment technology that many developing countries find attractive, an "intermediate" technology that

can be put to work now as a forerunner to more advanced — and expensive — forms of technology.

The only remaining work in the study, according to Hassan, is a series of lab tests to determine levels of "trash fish" diet needed to achieve the same growth efforts on poultry as more conventional diets.

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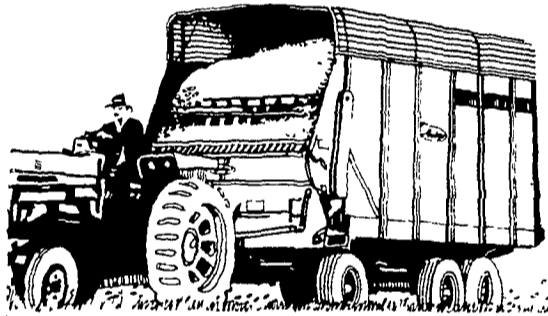
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