1995

Fish leather, anyone?

Aquaculture Department, Southeast Asian Fisheries Development Center

Southeast Asian Fisheries Development Center, Aquaculture Department (1995). Fish leather, anyone? Aqua Farm News, 13(1), 16-17, 18.

http://hdl.handle.net/10862/2458

Fish leather, anyone?

SHARK LEATHER

Previously regarded as a by-catch of limited potential, shark is now targetted by small-scale fishermen in the Bay of Bengal for leather production.

Fish, let alone shark, does not conjure up images of leather goods unlike cow, goat or crocodile.

The method of obtaining the raw material and the specialized nature of the market hamper success in this field and general awareness of potential.

Shark is a hunted resource often captured by small-scale fishermen only as by-catch, and primarily landed for its meat. It may therefore be difficult to obtain a regular supply of raw material for what is a totally different industry.

Aside from the technical problems which have haunted would-be processors for many years, the demand for such exotic goods as shark and other fish leathers can only be regarded as specialist and limited in nature. A shark tannery in Guaymas, Sonora in northern Mexico processes vast quantities of skins into expensive Texan cowboy boots for the nearby US market. A US patent suggests the use of shark leather for astronaut suits, boots and gloves for providing abrasion resistance during lunar exploration. Effort has been made to develop processes to remove denticles in order to render the final product as soft and flexible as normal leather.

Those who have most successfully cornered the lucrative market for fancy leathers appear to be those who have mastered the technology of denticle removal. The pioneers were Ocean Leather Corporation of Newark, New Jersey, USA, who held the market to themselves for several decades. More recently, European, Thai and Japanese tanneries have encroached on this terrain. Without the benefit of a full market survey, it is difficult to say whether existing supply is meeting demand or whether there is potential for expansion.

Countries such as India, however, could become competitive in this field since:

a) the existing leather tannery infrastructure is well-developed especially around Madras;

b) operating costs are relatively low; and

c) offshore resources of sharks are not sufficiently tapped at present.

An environmentally significant point is that shark and fish leathers in general are essentially food industry by-products which would otherwise be wasted. Other exotic leathers produced from crocodile and snake, for example, have negative connotations in this respect in spite of their increased production through culture.

Offshore resources

The offshore zone is the realm of the large sharks, both pelagic and demersal varieties. For the production of leather, large-sized sharks (>1.5m) are preferred as these have larger usable surfaces.

Processing

In Madras, the species used are black tip shark (*Carcharhinus limbatus*) hammer-head shark (*Sphyrna* spp), Indian dog shark (*Scoliodon laticaudus*), thresher sharks (*Alopias* spp) and squalus sharks (*Centrophorus granulosus*) obtained from the small-scale fisheries of the Addaman Islands and the East Coast of Tamil Nadu. Traditionally, shark meat is salted and dried for export while the skin is merely thrown away. Careful removal and preservation of the skin can considerably improve the producer's income.

Leather development work is carried out in collaboration with the Central Leather Research Institute in Madras. Considerable variations are encountered between species and corresponding adjustments are being made depending on the nature of the denticle structure.

Market acceptance

Good quality leather can be produced by small-scale tanneries in India using sharks caught by artisanal fishermen as long as fish quality is maintained and adequate training provided in

Shark leather goods are becoming very well accepted.

skinning skills. The price of the finished leather is currently working out to about US$2.00-2.90 per sq ft (depending on size, finish and quality) and this includes what would be locally regarded as a suitable producers margin. This compares favorably with goat, sheep and cow/buffalo.

An exotic leather, it is undergoing market trials in Europe both in the form of hides as well as finished goods.

Source: Tim Bostock, "Shark Leather," **INFOFISH International**, March-April 1991.

BARRAMUNDI

Available in a wide variety of finfishes and being stronger and more durable than normal leather, this marine leather is making a definite impact.

Large fish species, such as the *barramundi* or sea bass, make the best fish leather. Skin from the large fish swell in the tanning process, giving them good body weight. The main feature is the scale pattern which forms pockets once the scales are removed chemically. Removal of scales chemically is by far the best method as it leaves the delicate skin forming the scale pockets beautifully.

Although the *barramundi* is found all over Asia, no other country has at present a supply of commercial quantities of large fish skins that Australia has. This is possibly because the fish is in most Asian countries a delicacy. Where it is farmed, it hardly is ever grown beyond the accepted marketable size of 600-800 g/piece.

In the 1989 *International Leather Guide*, there were 21 companies and tanneries listed as being processors of fish skin. In the 1991 Guide, there were 56, an increase of over 100 %.

Very affordable, fish skin is made into a range of leather goods, shoes, fashion designer dresses and apparel. The more innovative entrepreneurs see it as a new product with great potential for future growth. Now that it has been recognized, it holds good promise to finding its niche in the leather world. It has been reported that the Italian company, Gucci, is now contemplating the use of fish leather.

Australia has at present five marine skin tanneries with at least two more preparing to get underway. For the five in existence now, there have been many trials and disappointments in finding markets and convincing buyers. The particular fish species used in making fish leather make all the difference; the bigger the scale pattern the more pleasing effect of the finished leather. *Barramundi*, carp, perch, wrasse, snapper and mullet have good scale patterns along with the many reef fish species.

US fish tanneries, most of whom use salmon skin, are doing very well now. However, most people still do not know that fish skin may be tanned nor of its fantastic qualities although once having seen the product, most agree on its potential.

Companies involved in tanning fish leather guard their formulas and processors most jealously. There are two main types of fish leather: one is in the form of soft ruffled which is used in a variety of ways for apparel, shoes,

(to page 18)

Convenience food products

(from page 5)

(7) Cure the fillets overnight in a refrigerator.

(8) After curing, wash the fillets thoroughly to remove excess salt and drain for 30 min.

(9) Dry the fillet at 55°C for 2 hr and smoke for 2 to 3 hr or until golden brown.

(10) Cook the samples at room temperature, pack in polyethylene bags, and then store in the refrigerator.

Ham-Cured Fillets

(1) Clean and eviscerate the fish immediately after procurement.

(2) Wash the fish thoroughly, slice crosswise, pack in polyethylene bags, and store immediately in the freezer.

(3) Partially thaw the fish before filleting.

(4) Debone the fish by cutting along the backbone. Do not remove the hairbones embedded in the flesh to preserve the integrity of the fillet structure.

(5) Cut the fillet into 6-inch slabs and soak in 5% brine solution to remove excess blood and slime.

(6) Drain the fillet for 30 min before curing. A kilo bighead carp fillet is cured with 11 g sugar, 9 g prague powder, and 400 g of water. Salt is added to taste.

(7) The fillets are cured overnight in a refrigerator.

(8) After curing, wash the fillets thoroughly to remove excess salt and drain for 30 min.

(9) Dry the fillet at 55°C for 2 hr and smoke for 2 to 3 hr or until golden brown.

Fish Sausage

(1) Cut the fish fillet across the grain to remove all the hairbones.

(2) Mix the fish and the cubed back fat at a ratio of 70:30 and pass through a meat grinder.

(3) Mix the fish-fat mixture with 22 g of salt, 1.5 g of garlic, 7 g of black pepper, 4 g of MSG, 4 g of prague powder, 21 ml of vinegar, and 1 ml of accord.

(4) Cure the mixture for 48 hr and stuff them into polyethylene bags.

Qualities of new Products

The flavor, aroma and eating qualities of developed products from bighead carp are generally acceptable.

Fish sticks and fish spread prepared from bighead carp are generally acceptable in terms of sensory qualities. The fishy aroma and flavor of the products are masked by preparing comminuted products and using proper formulation.

Dehydrated and smoked products, namely, unsalted fish powder, salted fish flakes and smoked fish powder from bighead carp are likewise acceptable.

Smoked products from bighead carp, namely, plain smoked, pickled and ham-cured fillets were found to be highly acceptable.

Source: PCAMRD. 1991. **Processing of Bighead Carp into Food Products**. Dept. of Science and Technology, Los Baños, Laguna.

Fish leather...*(from page 17)*

handbags and so on; and two plated leather where the scales are lacquered and laid flat. This leather has a firmer texture for increased durability and is used in handbags, wallets, executive briefcases and corporate gifts. Whatever way it is used, fish leather products look great.

To start a reasonable size fish skin tannery would require at least A$500 000 capital and a strong supply of raw materials. Which is why most tanneries diversify and simultaneously process other exotic skins such as eel, shark, stingray, sea snake, crocodile, emu, ostrich, cane toads, frog and whatever else is available in quantity.

Industry forecast

The future for the marine tanning industry is optimistic. Environmental and animal rights organizations will no doubt approve of fish skin because it brings no harm to nature or the environment. Everyone can own exotic leather goods which is otherwise normally discarded by the fishing industry.

Source: Terry Selwood, "Barramundi skin," **INFOFISH International**, January-February 1992.