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Introduction

Producers who are ready to harvest their first crop of fish, often ask, “Where will I sell them?” It is surprising how many producers ask this question so late in the production cycle.

To avoid certain failure of an aquaculture enterprise, producers must seriously investigate the marketplace as an initial step before investing in production. Midwestern farmers in traditional farming enterprises, such as corn, soybeans, beef, swine, and poultry, use well-established markets that have been highly refined over the last few decades. For example, go to any rural town, regardless of its size, and you’ll likely find a grain elevator or stockyard where buyers or outlets for products are available almost daily.

Aquaculture, unlike other agriculture enterprises, is in its infancy, especially in the Midwest. Large-scale processing plants solely for aquaculture products are nonexistent in this region. As a result, fish and crayfish farmers are forced to use niche markets for their products.

Niche markets have advantages and disadvantages. The main advantage in niche marketing is that producers become wholesalers, and, in some cases, retailers. Consequently, producers have more control over the prices they set for their products, and they retain some portion of the profit that would otherwise have gone to middlemen. The main disadvantage is that considerable time must be spent analyzing and developing niche markets. In most cases the product is sold one fish at a time whether processed, whole, or live.

Many beginning aquaculturists assume that the huge markets for fish in Chicago, Indianapolis, Kansas City, Louisville, Minneapolis, and St. Louis offer unlimited opportunities for them

to sell their product. But even though massive quantities of fish are marketed in those areas, such markets generally serve high-volume producers. New farmers producing relatively small quantities of fish should start by developing markets within a 50-mile radius of their farm.

This bulletin discusses general marketing concepts as applied to food fish and presents ideas for selling aquaculture products locally. Food fish production offers the greatest potential for aquaculture expansion in the Midwest; therefore, most of this bulletin specifically addresses the process of marketing food fish. Many of the same marketing principles apply to other types of aquaculture products such as fingerlings, sport fish, bait fish, and ornamental fish.

Keep in mind that more time will be required to initially establish a new market as opposed to servicing or maintaining an existing market. A budget should be developed where costs can be estimated and compared against anticipated returns. The costs may include personnel costs, delivery costs, promotional costs, overhead, and additional materials and equipment costs.

The producer of any aquaculture product should learn how to answer the following five questions after reading this bulletin.

1. How do I select a marketable species?
2. What product form will I provide?
3. How much should I charge for my product?
4. How can I promote my product to increase sales?
5. Where will I sell my product?

Selecting a species

When deciding which species to produce, keep four things in mind.

1) Choose a marketable species.

A good example of a species difficult to market as a fresh product is common carp. Common carp is easy to produce and is a candidate species if you have a strong ethnic market in your area.

Otherwise, it is advisable to consider other more widely accepted species. Of the 60 or so candidate species for food fish aquaculture, only channel catfish, crawfish, and rainbow trout have established industries in the United States. In addition to those species, others, such as Atlantic salmon, coho salmon, hybrid striped bass, tilapia, yellow perch, walleye, and various sunfishes, offer considerable potential in the Midwest.

2) Attempting to farm species with incomplete production information or production peculiarities is a very risky venture.

Although species such as walleye, shrimp, and lobster have wide public appeal and are widely consumed, each have unsolved production problems. For example, walleye producers recognize that fingerling survival may be low due to poor hatchery practices or cannibalistic behavior. Furthermore, most walleye are produced by state fisheries agencies and released as fingerlings. Since few have been grown to marketable food size using commercial diets, there is limited nutritional and economical information at this time on which to base food-size walleye production. Faced with these production obstacles, a producer could fail to reach production goals. In any new business, and especially in aquaculture, cumulative short-term setbacks can lead to heavy monetary losses.

Tilapia may be a better choice because they are extremely hardy. They tolerate poor water quality and are easy to spawn. The only production drawback is their intolerance to low temperatures. These fish are often raised cheaply in tropical climates. A second, more serious problem with tilapia is in marketing. Tilapia are not native to the United States and are subject to import/production restrictions in some states. Also, because tilapia are not native, the consumer has been slow to recognize them as a high-quality food fish. With continued promotion tilapia will offer better potential.

3) Understand your competition before selecting a species.

If you are considering aquaculture as a business because you think there is limited competition, then you should reconsider. The seafood industry is well established and very competitive. It will become even more competitive in the near future. Midwestern producers have to compete with wild-caught and farm-raised products of both domestic and foreign origin. Understanding your competitors allows your production and marketing programs to develop around specific species and markets which will provide you with the greatest profit. Remember also that other seafood is not the only competition you will have to consider. Competition from all protein sources, such as poultry, beef and pork, must be considered.

Native wild

Competition exists from yellow perch, walleye, and crayfish harvests originating from commercial fisheries in states around the Great Lakes region. Harvests from each of these fisheries are highly variable due to either overfishing or environmental constraints. This has allowed farm-raised yellow

perch to compete with commercially caught yellow perch.

Ocean-caught fish such as cod, pollock, ocean perch, and salmon, account for a significant portion of United States seafood consumption. They are often a cheaper and more reliable supply than those from lake fisheries or aquaculture enterprises. Once again, over-fishing results in more opportunities for farm-raised products.

Foreign wild

Competing with seafood imports poses the greatest challenge to the aquaculture industry. In 1993, total trade deficit was \$3.7 billion. Of the 15.0 pounds of seafood consumed annually per person in 1993, less than 20 percent was farm-raised.

Competition between farm-raised and foreign-wild species is greatest for cod, pollock, orange roughy, and whiting. Farmers considering walleye production should also realize that Canada has a well-established commercial walleye fishing industry. They have hundreds of lakes which can be opened to fishing in order to maintain the country's market share by flooding the market. Due to this situation, prices could fall enough to force marginally profitable farmers out of business.

Farmed domestic

Midwest farmers raising food species such as channel catfish and rainbow trout, must overcome competition from the large industries in southern and western states which have produced these species for several decades. Even though pond-side prices of these two species will be lower than for locally grown products, higher shipping costs can make midwestern products more competitive.

Established aquaculture industries will force small-scale producers in this

region to rely more heavily on niche marketing opportunities until significant infrastructure is established for feed, fingerlings, and processing facilities. In the meantime, small-scale producers must rely on the premiums that may be paid for locally grown fish.

Farmed international

The competition from species farmed internationally is greatest for salmon from Europe and Chile. Tilapia, another product being farmed internationally, is being imported into the United States. Many niche marketing opportunities still exist for the producer who sells a fresh product, since most tilapia are imported as frozen fillets.

4) Provide a variety of species.

Variety is extremely important to small-scale producers. Many market outlets prefer buying small quantities of many species. Production of more than one species may offer a competitive advantage over single-species operations. If production of a variety of species is not feasible, then pooling resources with other producers will allow for a variety of species.

The Four P's in Marketing

Product, price, promotion, and place— classical points in traditional marketing— also apply to marketing aquaculture products. After potential producers choose the best species for their area, serious planning and research needs to be conducted on each point.

Product

Market size and product form are two important aspects of an aquaculture product. Different customers often have different ideas on what the best

size or form is. Market size varies according to consumer preferences. Channel catfish are usually sold after reaching 1 to 2 lb. At this size, one 1.5 lb. fish will yield two 4.5 oz. fillets. Yellow perch or bluegill are fish purchased by consumers at a smaller size. Market size for either of these species may be as small as 0.25 lb.

Each successive degree of fish processing results in different product forms. The following is a discussion of definitions and specific information concerning various product forms.

Live fish are those sold to live haulers who stock fee-fishing lakes and farm ponds, or to consumers who dress them at home for consumption.

Fish in the round are put on ice and sold just as they came out of the water.

Drawn fish have their entrails removed.

Dressed fish are sold completely cleaned but with the head intact.

Headed and gutted fish have the head and entrails removed. Fins and tails may be removed or left intact. Species, such as channel catfish, have the skin removed. For trout and other salmonids, the head, skin and scales are usually left intact, but gills are removed.

Chunks are cross sections of large dressed fish having backbone as their only bone. Chunks are similar to beef or pork roasts.

Steaks are cross sections of dressed fish around 1 in. thick. Larger catfish (3 lb. or more) are sometimes sold as steaks.

Nuggets come from the belly flap after it is cut free from the fillet. Channel catfish nuggets are common in supermarkets. Part of this popularity may be a result of their lower cost.

Filletlets are boneless pieces of fish.

Flank filletlets are the two sides of the fish

cut away from the backbone. Rib bones and skin are usually removed. Butterfly filletlets are the two skin-on flank filletlets held together by the belly flap (trout or yellow perch are sometimes sold as butterfly filletlets).

Fillet size will depend on individual preferences. Usually filletlets are cut to prescribed proportions which yield a single serving (4 to 8 oz.) from one or two filletlets. As a rule, whole fish need to average around 1.25 to 1.5 lb. depending on the dress-out percentage of each species. For example, 1.5 lb. channel catfish, hybrid striped bass, tilapia, or trout will have a fillet dress-out percentage from 33 to 40 percent.

Deboned fish have the rib and back bones removed, with the rest of the body intact.

Smoked fish is a value-added processing method. Two smoking methods (hot and cold smoking) are used. Hot smoking is more like flavorful cooking of brined fish, and never produces enough drying to ensure safekeeping. Hot smoking involves temperatures of 250° to 300°F for a period of 4 to 5 hours. Cold smoking, on the other hand, preserves fish by drying. Cold smoking requires as little as 24 hours or as long as three weeks at temperatures never exceeding 80°F.

Regardless of the product form you choose to offer, it is very important to establish and maintain a reputation as a reliable supplier. Be sure to gain an accurate understanding of each customer's needs regarding both volume and frequency of purchases before you deliver the first fish.

Remember that a customer is taking more of a risk when depending on you for fish supplies rather than relying on a local fish wholesaler or other established business. Therefore, you need to

take extra care to be reliable. This can be a major problem for new or small-scale producers. One approach could be to join with other producers in forming a marketing cooperative.

Price

How much should you charge for your product? Real-life implementation of this seemingly simple calculation is not so easy. Pricing a product is an agonizing, lengthy decision, and will likely need periodic adjustments to reflect new market realities.

So where do you start in thinking about price? Well, the lowest price you would ever want to charge is equal to your cost per pound, including both fixed and variable costs. The highest price would be what you could talk one or two desperate people into paying for your fish. Your base price needs to be somewhere in between. Take into consideration such factors as:

- How are you going to position your product in the food fish market? Is it an economy or luxury item?
- Who are your customers? Are they individual consumers, up-scale restaurants, or food wholesalers?
- What species and prices are competitors offering?
- What are the quality perceptions associated with your chosen species, location or production system?

As you may have figured out, pricing is not an isolated decision. Many systems for determining the price of a product are used by marketers. From a small-scale retail marketing standpoint, only the most relevant systems will be discussed.

Cost-plus pricing simply adds a constant percentage of profit above the cost of producing a product. The problem with cost-plus pricing is that it is difficult to accurately assess

fixed and variable costs. This pricing system works fine in the absence of severe competition.

Competitive pricing is probably the easiest, and, in retail marketing, the most common form of pricing. In this system, producers gather market information on the prices and quantities of competing products and then price their products accordingly.

Skimming involves the introduction of a product at a relatively higher price for more affluent, quality-conscious customers. Then, as the market becomes saturated, the price is gradually lowered.

Discount pricing offers customers a reduction from advertised prices for specific reasons. For example, a fish farm advertises in the local newspaper that prices will be 25 percent cheaper if they bring the advertisement from the paper. Another example would be when a producer who advertises on local radio, offers customers a discounted price when they mention the advertisement.

Loss-leader pricing is the offering of a portion of the product at a reduced price for a limited time. The goal is to attract more customers to the producer's place of business so that they might also buy non-discounted products as well. This pricing method is seen in farmers markets and supermarkets to introduce a new product or to create consumer excitement.

Psychological pricing involves establishing prices that look better or convey a certain message to the buyer. For example, instead of charging \$3.00 per lb. the producer charges \$2.99 per lb. This will make the product appear to be more of a bargain. Or, instead of charging a price close to production costs the producer charges in the higher price range that buyers associate with

higher quality or more desirable fish species.

Perceived-value pricing is positioning and promoting a product on non-price factors such as quality, healthfulness (clean water, no contaminants), or prestige. The producer must decide on a price that reflects this perceived value. This would be a good strategy for farm-raised versus wild-caught fish or any species you could pitch as having non-price attributes.

Promotion

Producers promote their products to create customers. The best way to attract new customers is to provide a high-quality product and to develop excellent promotion strategies. Regardless of the advertising method chosen, the producer should spend a portion of time promoting the product(s). There are two general methods of promoting aquaculture products, generic and personal promotions.

Generic promotion is commonly performed by large marketing groups such as The Catfish Institute. Because such groups are involved in generic advertising of catfish, their efforts do not directly apply to products from individual farms.

What methods of personal promotion are available to a small-scale retail marketer? One of the most common promotional methods is word of mouth. You convince a friend to buy from you. If satisfied with the quality and/or price of your product, the buyer will pass along word of your operation to others. The multiplying effect can be tremendous, but often word of mouth is not sufficient. Other common channels for advertising include radio, newspaper ads, magazines, handbills, flyers, and posters.

Promotion is usually aimed at the consumer. The promotional message

must be clear, to the point and focused. Below is an example of an ad under farm produce in the classified section of your hometown newspaper.

Farm-raised yellow perch. Raised free of contaminants, highly nutritious, priced to sell. Saturday 8–12 a.m. State Road 38 and 900 East in Tipp City.

Other types of promotion will be necessary to maximize sales. Point-of-purchase materials such as recipes, samples, or instructions on processing are time-tested promotional tools. Before creating your own point-of-purchase materials, decide if materials that are already available can be adapted to your farm (Figure 1).

The form of promotion you choose as a new producer will depend on the scale of your operation, available resources, availability of your product, and geographic location of your farm. In addition to public advertising, you should consider some on-site product promotion, both visual and verbal. This should accent the non-price attributes of your product which will convince the consumer to be a repeat customer.

Place

There are many places and many markets for farmers to sell their food fish products directly, both at the retail and wholesale levels. A number of considerations must be taken into account when deciding what type of market and specific business or locations to market your fish (e.g., species, form, location, ability to process).

Farmers may sell their product directly to the consumer (retailing) or to other businesses which then sell to the consumer (wholesaling). The promotional principles discussed earlier usually apply to retailing directly to the consumer since most

Figure 1. Point-of-purchase promotion, like the recipe card shown below, often enhances sales.
(Source: Illinois-Indiana Sea Grant Program, Purdue University Cooperative Extension Service, West Lafayette, IN 47907)



COOKING Farmed Striped Bass

Hybrid striped bass are a cross between the salt water striped bass and the fresh water white bass. Farm-raised hybrid striped bass have several regional names such as sunshine bass and wipers. The meat is light, medium-dense with a mild to moderate flavor.

Baked (two pounds, 1/2 to 1 inch fillets)

Arrange fillets in lightly greased 13x9 inch baking pan and bake at 425°F for 20 to 30 minutes.

Grilled (two pounds, 1/2 to 1 inch fillets)

Arrange fillets on grill rack and cook 3 minutes on side one and 3 to 6 minutes on second side.

Microwaved (two pounds, 1/2 to 1 inch fillets)

Arrange fillets in pan and cook at 100% power for 4 to 10 minutes. Fillets should be removed just before they start to flake.

Sauces and Seasonings

- Top with lemon juice and seasoning (mixed peppers, marjoram, basil, parsley, dill, thyme, tarragon) and bake, grill, or microwave.
- Grill or bake fish by wrapping fish and vegetables (onions, summer squash, or mushrooms) in foil.
- Cover with olive oil and dill, with a little lime juice prior to flaking.
- Bake in a mixture of bouillon and herb seasonings (parsley, marjoram, or tarragon).
- Cover with salsa before baking or microwaving. Additional salsa and lemon juice may be added when serving.

NUTRITION INFORMATION: Each uncooked 3 1/2 oz. fillet contains 88 calories, 18 gm protein, 2.0 gm fat and 54 mg cholesterol.

establishments where you may wholesale have their own forms of promotions.

Direct Retail Sales to consumers are a good place to start if supplies are small or availability uncertain.

Farmside sales are appropriate if the farm is located within a short distance from urban areas or for customers who enjoy a drive into the country. Specific dates can be reserved to make transactions. For example, Saturday morning from 8:00 a.m. until noon is a common time for sales. Equipment such as change, accurate scales, ice, and transport bags, although not essential, will certainly make the purchases more convenient for the consumer. A licensed processing area will also increase sales by attracting customers who hate cleaning fish.

Farmers markets are widely utilized in southern states by fish producers. Here in the Midwest the concept of selling fish at farmers markets is new. As a result, the producer usually has to convince the manager of the farmers market that the product will be live and safe for human consumption. Hauling tanks are positioned to create a stand or booth similar to other forms of produce. Equipment needs will be similar to farmside sales.

Roadside stands are often used to capture a percentage of the traffic flow along busy highways. Several states including Illinois and Indiana offer directories of roadside stands. Obviously location is important in alerting upcoming traffic to the opportunity they are approaching. Offering fresh produce either yourself or in conjunction with another farmer

may increase your flow of customers. Equipment needs are similar to those for farmers markets.

Fee fishing operations offer the small-scale producer the opportunity to retail or wholesale products. The producer can construct a fee fishing pond on the farm or sell direct to the other fee fishing operations. Unless the producer has the means to haul fish, a live hauler will need to be contracted.

Direct Wholesaling your fish to other wholesalers or retailers may be an excellent route to market your fish depending on the species and your supply situation. Some wholesale customers such as restaurants have a strong preference for steady, year-round supplies, but even this generalization does not hold true in every individual case.

It would probably be worth your time to set up an appointment with the manager of every restaurant, grocery store, and food wholesaler within that 50-mile radius of your production site. Find out beforehand, if possible, individual preferences for species, product form, size, volume, availability, and prices. Have a strong sales pitch prepared and a fresh sample of your product. Pricing in the wholesale market will likely be based on individual negotiation, so be sure to be armed with a negotiation strategy.

Some managers will immediately be interested, others won't. For those who are interested, the accurate, sensitive positioning of your product to fit their individual needs and your ability to convince them of your product's attributes could gain you a customer on a trial basis. Once that customer is gained, you must be extremely diligent to be a reliable supplier of the size, form, quantity,

and quality of product that the customer expects. You must work hard to earn a good reputation and to maintain it.

Live haulers can be used if the producer does not own a transport tank. Live haulers will sell fish to fee fishing operations, farm pond operators, or processing plants. Selling in this manner would not require any investment on your part of time or equipment to process, transport, or sell your fish.

Restaurants can be a good place to start with smaller quantities of fish because they are usually willing to try new species (and suppliers) to fill their “catch of the day” specials or other such short-term menu items. The typical restaurant will take 10 to 80 lb. of a fish species per week (Oha 1991) depending on product form (another advantage of producing multiple species and/or product forms). For regular menu items, restaurant managers tend to prefer weekly deliveries over monthly (Riepe 1993).

When deciding which businesses to contact, remember that many businesses serving food are not necessarily identified as restaurants. Don't overlook the country club, VFW, or corner pub. You might be just the right type of supplier or have just the right fish they want.

Once you successfully gain a restaurant customer, you should continually educate your client. How many times have you asked your waiter, when dining out, about the seafood item on special and were given a “song and dance” because he or she knew nothing about it? Educating the head of the serving staff and

providing a short brochure or other printed information may be a key to continued success.

Supermarkets offer one of the best places to sell larger volumes of fish products. It is quite likely that unless a supermarket is locally owned and operated, you would have to supply all or many of the stores in a chain. This may be a good situation for some producers, but others may have difficulty with the volume or other requirements. But here again, it is probably best to research and interview to determine the compatibility of the producer and the potential customers.

Staff education is also important for repeat customers. Staff will need information about how the fish are produced, their quality, and suggestions on preparations. Since the average consumer simply puts “fish” on the shopping list, a knowledgeable and enthusiastic staff member will be extremely valuable in marketing your product.

Specialty stores include ethnic groceries and health food stores. Fish is a more important part of people's diets in some cultures than in others. Health food stores may be willing to try your product because the perceived quality of farm-raised products is usually higher than that of wild-caught. Ethnic markets usually are more willing to purchase whole fish.

Regulations

Regulations for marketing aquaculture products locally will focus either on permits to retail market at the farm, farmers markets, and roadside stands, or on the setup and use of small-scale processing facilities. In either case you

should contact your local health department. The accreditation procedure for small-scale processing plants will involve assurances by the processor that the equipment can be disinfected and that the product can be properly refrigerated.

Inspection

Mandatory seafood inspection will soon occur. The United States Department of Agriculture (USDA), National Marine Fisheries Service (NMFS), and the Food and Drug Administration (FDA) have been developing a program for mandatory seafood inspection. As the inspection procedure is currently proposed, FDA will share the inspection program with NMFS and will use the Hazard Analysis Critical Control Point (HACCP) method for inspecting seafood. This method involves random inspections by the processor at critical points along the processing line (instead of inspecting every fish) and periodic government inspection.

Summary

In this bulletin, information has been provided on niche marketing strategies. Marketing is as important as actual production. Assuming that all you have to do is produce the fish and people will buy them will lead to certain failure of an aquaculture enterprise.

New farmers producing relatively small quantities of food species should develop their markets with the strategy that they will sell within a 50-mile radius of their farm.

The seafood industry is very competitive and will become even more competitive in the near future. Midwestern producers have to compete with wild-caught and farm-raised products from domestic and foreign origin.

When deciding which species of fish or shellfish to produce, keep two things in mind. First, choose a species which is recognized as being marketable. Second, attempting to farm species having incomplete production information or production peculiarities is a very risky venture.

Product, price, promotion, and place are classical points in traditional marketing and will similarly apply to aquaculture products. The product refers to the degree of processing undergone by the fish or shellfish. Producers promote their products to create customers. The place or location chosen to sell your product will depend on the location of your farm and the method of advertising you choose. Four places to direct-market your food fish products (farmside, roadside stands, fee fishing, and farmers markets) were discussed. Four places (live haulers, restaurants, supermarkets, and specialty stores) to wholesale your food fish product were described.

Regulations for niche marketing aquaculture products will either focus on permits to retail market at the farm, farmers markets, and roadside stands or on the setup and use of small-scale processing facilities. As the inspection procedure currently is proposed, FDA and the NMFS will be the lead agencies using the Hazard Analysis Critical Control Point (HACCP) method for inspecting seafood.

Suggested Readings

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