
North Central Regional Aquaculture Center



In cooperation with USDA

Supermarkets and Seafood in the North Central Region

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Need for Market Information

Planning is necessary for any business to succeed. This is particularly true for aquaculture since the industry is still in the early stages of development. One area of planning that is too often overlooked is marketing. Marketing is a major part of an aquaculture business. Thus, it demands serious attention. A marketing plan is essential. Market information of various types is needed in order to develop a realistic, accurate plan.

Supermarkets account for about one-third of consumers seafood dollars (*Seafood Business*). Therefore, the behavior and trends exhibited by supermarkets deserve close attention from the aquaculture community. Little is currently known about the supermarket market segment in the North Central Region (NCR). This report is designed to fill the gap in market information.

Survey Methods

A supermarket survey, using mail questionnaires, was conducted in

the fall of 1996 and winter of 1997. Questions were asked to determine firm's purchase/sales behavior regarding fish/seafood. Details about the supermarket survey including the questionnaire used can be found in Riepe (1998a) and Riepe (1998b).

Only supermarkets (defined by the grocery trade as stores with \$2 million or more in annual sales) were included in the survey, rather than all grocery stores. Preliminary investigation suggested that grocery stores smaller than supermarket size are not likely to handle fresh/frozen seafood. This theory was confirmed

by survey responses. A mailing list was obtained from a private company which maintains a database of many types of firms throughout the country. With most, but not all, non-supermarket grocery stores excluded, there were 6,932 NCR supermarkets in this firm's database in June, 1996. A random, representative sample (23%) was chosen to receive survey mailings. Despite the fact that a second mailing was done to increase response rate, only 107 (6.8%) of the sample returned usable surveys. Because of the low response, these survey findings may not be representative of all supermarkets in the NCR. However, until better data can be obtained, the data reported here are the best available.

Store Characteristics

Population Density of Location

Just over one-half of the responding supermarkets are located in small towns or rural population centers of less than 100,000 people (Figure 1). Less than 10% of the respondents are located in major urban centers. The remainder is located either in suburban areas (19%) or mid-size metro areas (18%). In contrast, about



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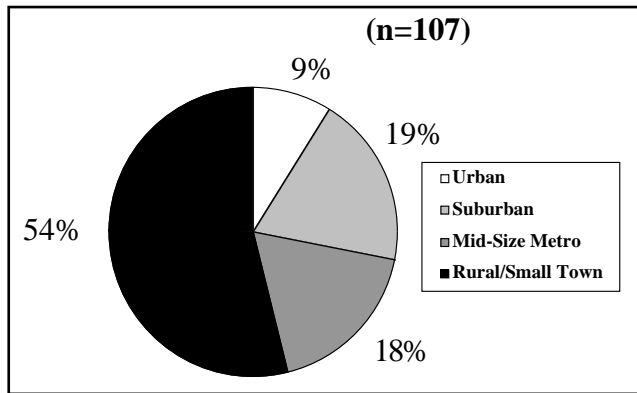


Figure 1. Population density of location for responding supermarkets in the North Central Region.

75% of East Coast supermarkets are located in urban centers, while less than 10% are located in rural areas (Gall and O'Dierno 1995). These large differences in surrounding population densities may cause differences in seafood purchasing behavior between the two regions. Thus, market information from national surveys or from surveys for other regions could be misleading for aquaculture in the NCR.

Status

Supermarkets are often grouped by their status as being either independent or part of a chain. The grocery industry definition of "chain" is 11 or more stores under the same ownership. Much grocery industry data are subdivided based on status. Accordingly, respondents to the supermarket survey were asked to indicate the status of their store. About two-thirds (61%) of the responding supermarkets classified themselves as independents. The other one-third (39%) are part of a chain. Nationally, the percentages are reversed, with 63% of supermarkets classified as "chain" stores (Progressive Grocer 1998). It is likely that the survey data do not accurately reflect the true proportions of chains versus independents among

NCR supermarkets. In conducting the survey, it seemed to be more difficult to obtain responses from managers of chain stores. However, because a store's status can affect other firm characteristics and firm behavior, the data on the status of the supermarkets responding to the NCR survey are included in this report. These data help the reader to better interpret the rest of the data.

Population density of location seems to influence the proportions of chain stores versus independent stores. Suburban and urban locations have a significantly higher proportion of chain stores (47% of supermarkets are chains) than do rural / small town locations (28% of supermarkets are chains).

Physical Size

The physical size of a store can often be a factor in firm behavior. Some grocery trade data are subdivided by square footage of the stores. In this analysis, small supermarkets were defined as having 15,000 square feet or less, medium-sized stores as having between 15,000 and 30,000 square feet, and large stores as having square footage in excess of 30,000 ("superstore"). There is a wide variety of store sizes among

NCR supermarkets. The largest proportion (39%) of responding supermarkets belong in the "Large" category. One-third (33%) of the respondents are "Medium" in size. Nearly one-third are "Small" (28%).

Store size is affected by store status and the population density of the store's location. Chain stores tend to be larger on average than independent stores (Figure 2). Stores in urban / suburban locations tend to be larger than stores in smaller population centers.

Ethnic Composition of Customer Base

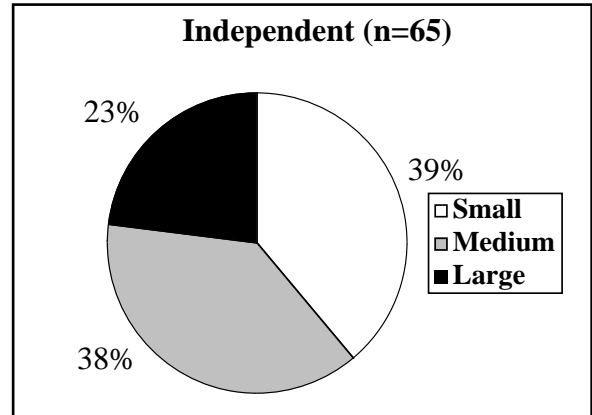
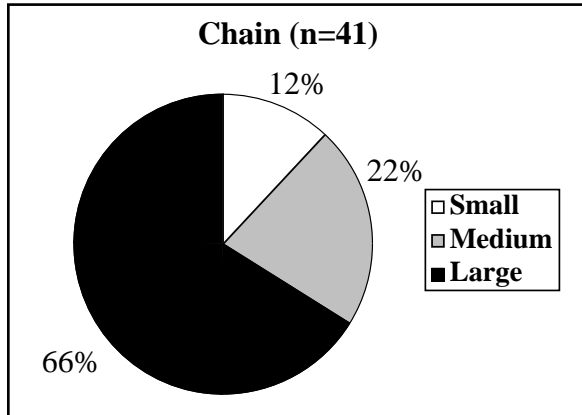
The vast majority of customers in responding NCR supermarkets are White (82%), followed by Black (11%), Hispanic (4%), Asian (2%), and Native American (1%). However, the proportions of ethnic groups differ between urban and rural areas. In the higher population centers in the cities, supermarkets serve more non-white customers. Rural customers, on the other hand, are almost exclusively white.

Annual Gross Sales Volume

The majority (60%) of responding NCR supermarkets have annual gross sales between \$2 and \$8 million. About 15% of the stores gross over \$20 million in sales per year. The remaining 25% are scattered between \$8 and \$20 million in gross sales.

As with physical size, gross sales also differ by store status and the population density of the store's location. Chain stores on average have higher gross sales than independents. In fact, 72% of independents have gross sales under \$8 million compared to only 38% of chains (Figure 3). Similarly, rural / small town stores have 76% of their

Size by Status



Size by Population Density of Location

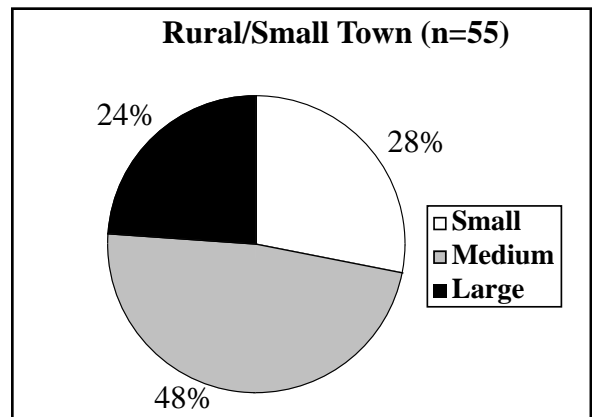
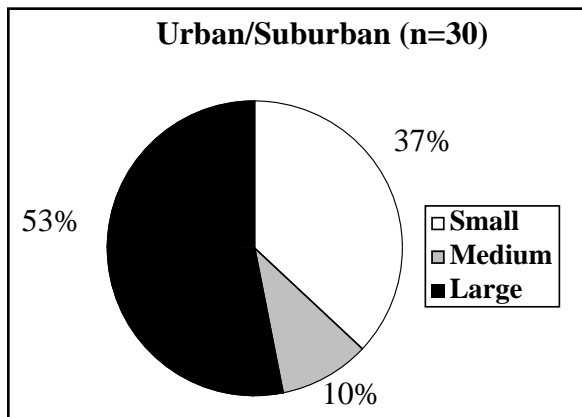


Figure 2. Physical size of responding supermarkets in the North Central Region, by status and by population density of location.

supermarkets with less than \$8 million in sales while 52% of urban/suburban stores belong in the lowest sales category. Thus, rural/small town stores have lower sales on average than stores in urban/suburban locations.

Supermarket Organization and Preferences for Seafood Purchases

Seafood Departments: Full-Service vs. Self-Service

One controversy in the grocery trade is whether it is more economical and

effective to sell seafood to customers on a self-service or full-service basis. For a while the trend in supermarkets was to go full-service, but now the pendulum seems to be swinging back toward self-service. Among responding NCR supermarkets, the proportions offering full and self service are almost equal (51% full vs. 49% self). However, these proportions differ depending upon a store's population density of location, status, physical size, and gross sales volume. Supermarkets having a higher proportion of full-service seafood departments are: located in

urban/suburban areas (78% full), part of a chain (62% full), larger in size (74% full), or higher in gross sales volume (80% full) (Table 1).

Size of Seafood Department

The number of square feet allocated to the seafood department can indicate a store manager's commitment to selling seafood. On average, full-service seafood departments of responding NCR supermarkets are 174 ft.² in size. Self-service departments are about one-third of this size, averaging 49 ft.²

The average size of full-service seafood departments varies among responding NCR supermarkets based on some store characteristics. Characteristics that do *not* result in significant differences in average square footage of seafood departments include chain/independent status and physical store size. There is a moderate difference in department size depending upon whether a store manager or some central authority makes seafood supplier decisions. Other characteristics associated with substantially larger departments are location in an

urban/suburban area, having high gross sales volumes, and/or purchasing at least 50% of their fish in fresh form. The largest size difference is between urban and rural departments, where urban departments are about four times larger than rural departments, on average (289 ft.² urban vs. 63 ft.² rural).

Seafood Species Decisionmaker
In responding NCR supermarkets, the majority of decisions about which seafood species to sell are made by a manager in the store. Just over one-half (54%) of the chain

stores allow an in-store manager to make unrestricted choices regarding which species to sell, while over three-fourths (78%) of independents make species choices this way (Figure 4). Eight percent of both chains and independents have species decisions made by some type of centralized purchasing authority. There is one other common method among supermarkets for choosing which seafood species to sell. In this method, a central authority develops a list of alternative species. The store manager then chooses species from this list. This method of choosing

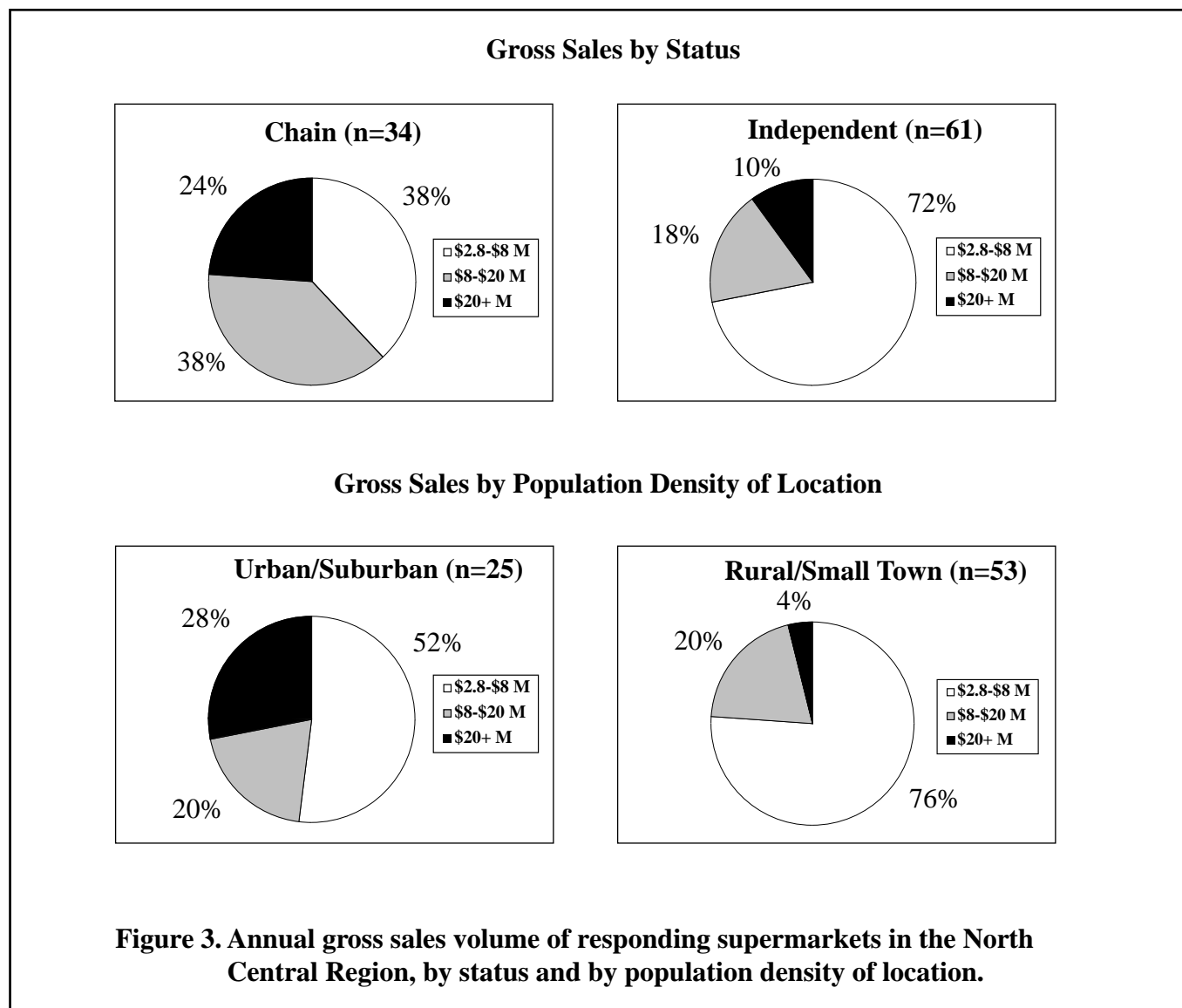


Table 1. Percentage of responding supermarkets in the North Central Region providing full-service in their seafood departments, by store characteristic.

Category/Characteristic	Percentage Providing Full Service
All Respondents (n=89)	51
Status	
Chain (n=37)	62
Independent (n=51)	43
Population Density of Location	
Urban/Suburban (n=27)	78
Rural/Small Town (n=44)	30
Physical Size	
Small (n=28)	43
Large (n=39)	74
Annual Gross Sales Volume	
Low (n=47)	32
High (n=25)	80

species is used by about one-third (35%) of the responding chain supermarkets, but only by 12% of independents.

Seafood Supplier Decisionmaker

Decisions in responding NCR supermarkets about which suppliers to purchase seafood from are made quite differently between chains and independents (Figure 5). Store managers of independent supermarkets are as unrestricted in their choice of seafood suppliers as they are in their choice of seafood species

(78% choose own species, 76% choose own suppliers). Chain store managers, on the other hand, do not have the same freedom. Almost one-half (49%) of chain store managers must defer to some central authority in choosing seafood suppliers. Another 19% must choose suppliers from an approved list made up by a central authority. Only 27% of chain store managers are allowed to make their own decisions about which seafood suppliers to use.

Best Selling Species

Supermarket managers responding to the NCR seafood marketing survey were asked to list the top five best selling species in their stores. Catfish and shrimp appear to be the most popular species sold in NCR supermarkets. For each species, a majority of respondents (55%) listed it as one of their best selling species (Table 2). Orange roughy and salmon are also quite popular. Those two species were reported as best sellers by 48% and 45% of respondents, respectively. About one-third

(33-34%) of respondents listed cod, ocean perch, and / or pollock as best sellers. Less popular best sellers include haddock (17%), lake whitefish (17%), trout (14%), hake / whiting (14%), and oysters (11%).

According to a 1994 retail grocer survey by *Seafood Business*, the best selling species nationwide, by volume sold, include shrimp (1), salmon (2), whitefish (3), catfish (4), flounder (5), orange roughy (6), swordfish (7), halibut (8), scallops (9), and surimi (10). The top six species of this list are similar to those on the NCR list with the exception of flounder. The bottom part of the national list is quite different from the NCR list, as none of the species from swordfish on down made the NCR list. And as expected, the freshwater species lake whitefish and trout are not on the national list. However, cod, ocean perch, pollock,

haddock, and hake / whiting are all thought of in the general category of whitefish. So, these species on the NCR list might be lumped together as whitefish on the national list.

When store characteristics are taken into consideration, best selling species do not differ much between different types of NCR supermarkets. Catfish, shrimp, orange roughy, and salmon are on every group's best sellers list, although their rankings can be quite different. The only significant differences between groups are: 1) how many whitefish species (defined here as cod, ocean perch, pollock, haddock, and hake / whiting) are on the list and where on the list they appear; and 2) the popularity of regional favorite species (defined here as freshwater species typically available from NCR lakes and rivers for sport fishing). Those supermarket

groups where whitefish species are fewer in number and farther down the list include stores which: are located in urban / suburban areas, have a high percentage of seafood purchased in fresh form, use primarily seafood wholesalers as their seafood suppliers, or are located in the state of Michigan. (Michigan was the only state with enough respondents to tabulate a state best seller list.) Other supermarkets had the common best selling species but the whitefish species were at the very top. These are supermarkets which: primarily use grocery wholesalers for obtaining seafood, have a low percentage of seafood purchases in fresh form, or are located in rural / small town areas.

Regional species are more popular in some types of supermarkets than others. The highest popularity of regional species is in responding

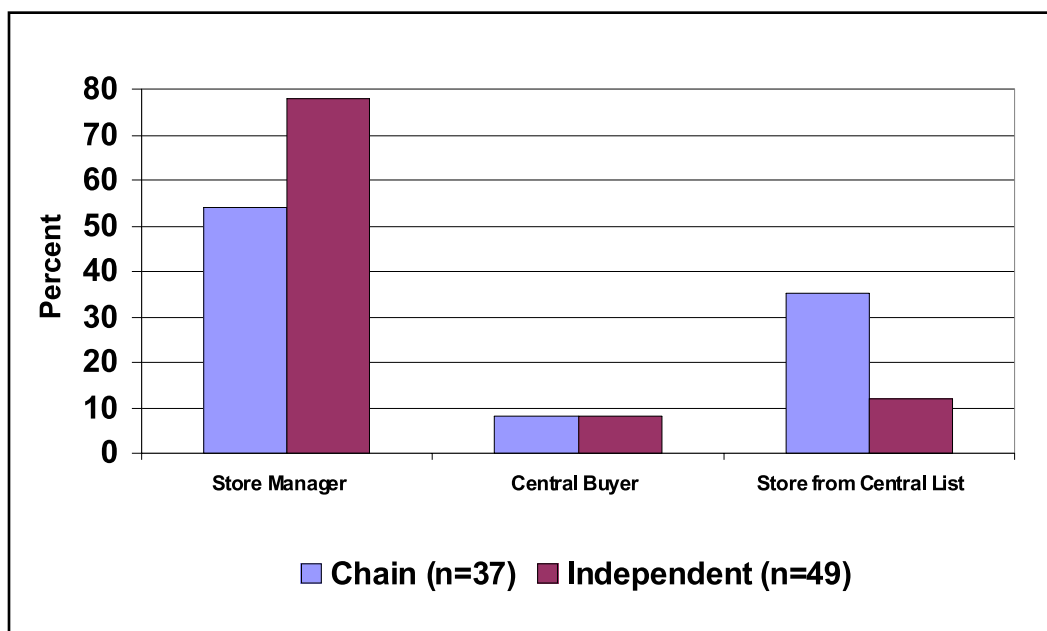


Figure 4. Species decisionmaker in responding supermarkets in the North Central Region, by status of chain or independent.

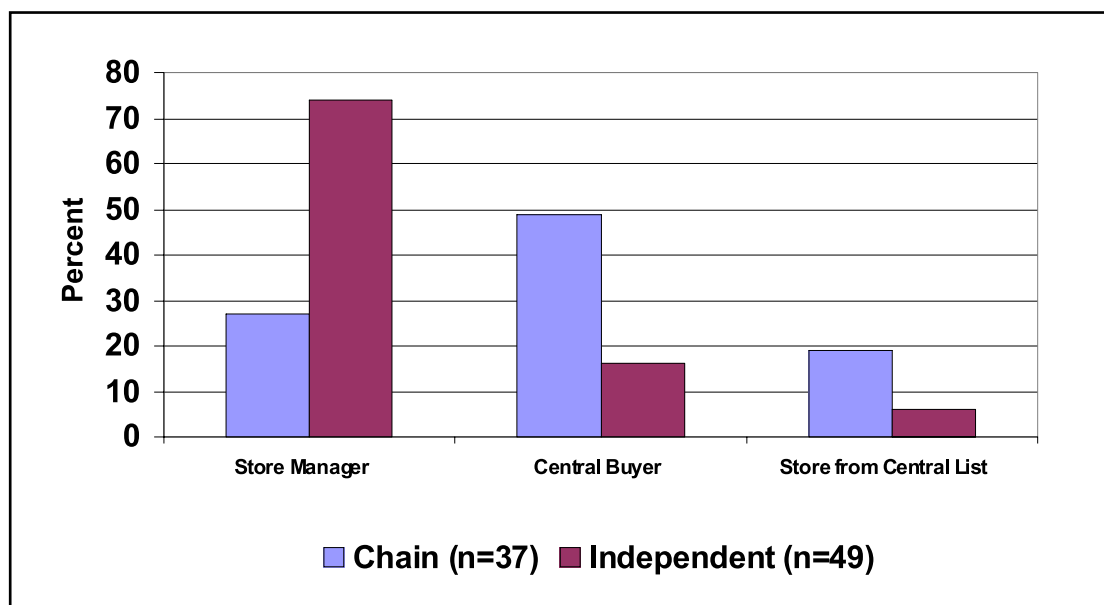


Figure 5. Seafood supplier decisionmaker in responding supermarkets in North Central Region, by status of chain or independent.

supermarkets located in Michigan. Almost one-half (47%) of the Michigan respondents reported lake whitefish as a best seller, while more than one-third (37%) reported trout as a best seller (Table 3). Other regional species selling well in Michigan supermarkets include trout (37%), yellow perch (21%), and bass (10%). Regional species seem to be somewhat more popular among supermarkets that are independents or urban, or that purchase 50% or more of their seafood in fresh form.

Type of Seafood Purchases: Live, Fresh, Frozen, etc.

Some survey respondents (17%, n=18) reported selling (and thus purchasing) only one type of seafood, the frozen/pre-packaged/branded type such as Gorton's™ or Mrs. Paul's™. These supermarkets do not purchase any fresh, frozen, live, or previously frozen seafood.

These stores are most likely to be located in rural/small town areas, to be independent, and/or to have lower gross sales. In fact, 26% of all rural/small town supermarkets reported selling only the frozen/pre-packaged/branded type of seafood versus 7% of urban/suburban stores. The 18 respondents who sold only the frozen/pre-packaged/branded type of seafood were excluded from the rest of the survey and data analysis regarding supermarket seafood departments and purchasing preferences.

Responding supermarkets in the NCR purchase a variety of fresh, frozen, and other forms of seafood. On average, frozen products account for almost one-half (46%) of supermarket seafood purchases (Figure 6). This is followed by purchases of fresh products (28%), frozen/pre-packaged/branded products (17%),

and previously frozen products (9%). Live purchases, on average, account for less than one-half of one percent of purchases.

Responding NCR supermarkets were divided into groups with similar store characteristics in order to analyze their seafood purchasing behavior. Store characteristics which are *not* associated with differing proportions of types of seafood purchases are store status, physical size, species decisionmaker, and/or supplier decisionmaker. Some groups of supermarkets do have a higher percentage of fresh seafood purchases, lower percentage of frozen purchases, and lower percentage of frozen/pre-packaged/branded purchases (Table 4). These supermarkets include stores which are located in urban/suburban areas, have higher gross sales, and/or provide full service in their

seafood departments. Stores in urban/suburban locations have the highest average proportion of seafood purchases in fresh form (51%), while rural/small town stores have the lowest average proportion (15%).

Preferred Seafood Product Form, Size, and Price

Market information on the product forms (round, fillet, etc.), sizes, and prices acceptable in the marketplace must be species specific. Unfortunately, the survey response from

supermarkets was so low that attempts to further survey them for data specific to walleye and yellow perch purchases and sales were abandoned. More research needs to be done, by species, to identify which product forms and sizes are typically purchased at what prices by NCR supermarkets. The seasonality of customer demand, availability of supplies, and prices paid also need to be documented. Familiarity with and desire for farm-raised seafood also need to be explored.

Seafood Suppliers

Understanding the flow of seafood products through marketing channels is important for understanding where and how to market aquacultured products. Supermarkets don't buy fish or seafood, they buy specific products. While some supermarkets may purchase all their seafood in one place, others may customize their suppliers based on their individual needs for species, fresh or frozen products, or other product distinctions. Accordingly, questions in the survey were

Table 2. Best selling seafood species in supermarkets, nationally and in the North Central Region.

North Central Region (n=87)	U.S.
55% Catfish ^a	1 st Shrimp ^b
55% Shrimp	2 nd Salmon
48% Orange Roughy	3 rd "Whitefish"
45% Salmon	4 th Catfish
34% Cod	5 th Flounder
34% Ocean Perch	6 th Orange Roughy
33% Pollock	7 th Swordfish
17% Haddock	8 th Halibut
17% Lake Whitefish	9 th Scallops
14% Trout	10 th Surimi
14% Hake/Whiting	
11% Oysters	

^aPercentages do not sum to 100% because each respondent was able to list up to five species as best sellers. Thus, for this specific case, 55% of all respondents listed catfish as one of their five best selling species.

^bThis list was obtained from results of a 1994 Retail Survey reported in the Sept/Oct 1994 issue of *Seafood Business*. Order is based on volume sold.

Table 3. Popularity of regional freshwater feafood fpecies in responding supermarkets in the North Central Region, by store characteristic.

Category/Characteristic	Lake Whitefish	Trout	Yellow Perch	Bass
	----- percent-----			
All Respondents (n=87)	17	14	9	4
Michigan (n=19)	47	37	21	10
Status				
Chain (n=35)	14	9	6	6
Independent (n=51)	20	18	12	4
Population Density of Location				
Urban/Suburban (n=27)	30	11	11	14
Rural/Small Town (n=44)	16	16	9	0
Annual Gross Sales Volume				
Low (n=46)	17	22	13	4
High (n=24)	25	0	4	8
Seafood Service				
Full-Service (n=43)	19	9	7	5
Self-Service (n=42)	17	17	12	2
Seafood Species/Supplier Decisionmaker				
Store Manager (n=56)	18	14	13	4
Central Authority (n=28)	18	14	4	7
Type of Seafood Purchases				
10%or Less Fresh (n=29)	3 ^b	7	0	0
50%+ Fresh (n=20)	25	25	10	15
Primary Seafood Supplier				
Seafood Wholesaler (n=39)	21	15	10	8
Grocery Wholesaler (n=31)	16	19	13	0

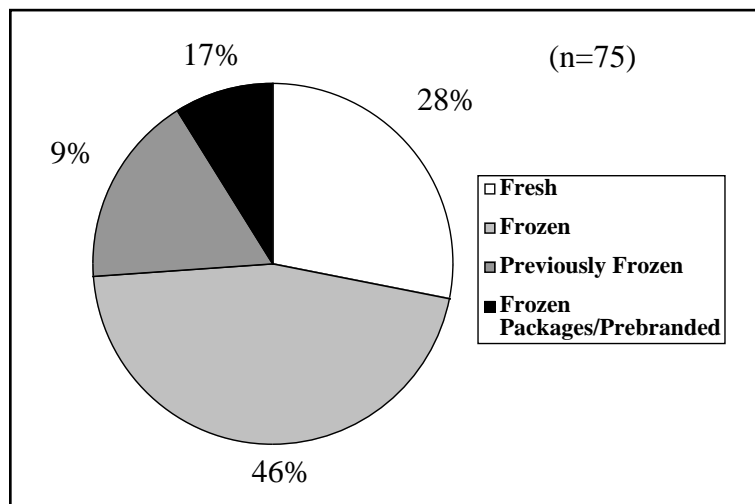


Figure 6. Types of seafood purchased by responding supermarkets in the North Central Region.

worded to discover the differences in how various seafood products typically are supplied to NCR supermarkets. Survey results show that different NCR supermarkets buy different seafood products from different sources.

In the NCR, seafood wholesalers and grocery wholesalers are the two primary sources of seafood for supermarkets. In contrast, East Coast supermarkets typically buy very little if any seafood from grocery wholesalers (Gall and O'Dierno 1995). Somewhat more respondents reported seafood wholesalers (45%) than grocery wholesalers (37%) as their primary type of seafood supplier (Table 5).

Table 4. Types of seafood purchased by responding supermarkets in the North Central Region, by store characteristic.

Category/Characteristic	Fresh	Frozen	Previously Frozen	Frozen/Pre-Packaged/Branded
	----- percent-----			
All Respondents (n=75)	28	46	9	17
Population Density of Location				
Urban/Suburban (n=20)	51	32	7	10
Rural/Small Town (n=41)	15	57	8	20
Annual Gross Sales Volume				
Low (n=43)	24	51	5	20
High (n=21)	45	39	8	8
Seafood Service				
Full-Service (n=34)	40	40	10	10
Self-Service (n=39)	19	50	8	23

Table 5. Primary and secondary seafood supplier types reported by responding supermarkets in the North Central Region.

Supplier Type	Primary	(n=87)	Secondary
	----- percent-----		
Seafood Wholesalers	45		28 ^a
Grocery Wholesalers	37		33
Foodservice Distributors	5		25
Processors	0		11
Commercial/Tribal Fishermen	0		10
Aquaculturists	6		5
Other	<u>7</u>		14
Total	100%		

^aRespondents were allowed to list up to two secondary supplier types. Therefore, percentages in this column do not sum to 100%.

No other primary supplier type was reported by more than 6% of respondents. Responding supermarkets were allowed to list two different types of secondary seafood suppliers. Most of the respondents listed at least one secondary supplier type. Seafood wholesalers and grocery wholesalers are also the most common secondary suppliers of seafood to NCR supermarkets. However, more supermarkets listed grocery wholesalers (33%) than seafood wholesalers (28%) as a secondary supplier type. Foodservice distributors are an important secondary source of seafood for one-fourth (25%) of respondents. Other, less important, secondary supplier types include processors and fishermen (commercial and tribal).

Which supplier type is primarily used and the percentage of supermarkets utilizing that source differ when supermarkets are grouped according to store characteristics.

For every group, at least two-thirds of the stores reported purchasing their seafood primarily from either seafood wholesalers or grocery wholesalers (Table 6). A supermarket is more likely than average to use seafood wholesalers as its primary source of seafood if the supermarket is located in a more densely populated area, is physically larger in size, has a higher annual gross sales volume, provides a full-service seafood department, and / or purchases a higher proportion of seafood in fresh form. Groups with the highest proportions of supermarkets primarily purchasing seafood from seafood wholesalers have either higher gross sales (75%) or a high percentage (50% or more) of fresh seafood purchases (79%). Grocery wholesalers are more likely than average to be used by supermarkets that are located in rural / small town areas (67%), provide self-service in their seafood departments (60%), and / or buy a low percentage

(less than 20%) of their seafood in fresh form (66%). Groups that had more than 10% of their supermarkets primarily purchasing seafood from aquaculturists include those that are part of a chain (14%), are located in rural / small town areas (20%), are physically larger in size (13%), provide full-service in their seafood departments (12%), and / or have some central authority making decisions about seafood species (18%) or seafood suppliers (13%).

What types of seafood products are NCR supermarkets purchasing from their seafood suppliers? Survey data show that supermarket seafood purchases from seafood wholesalers are about two-thirds fresh (62%) to about one-fourth frozen (24%) with a smattering of other types (Figure 7). When purchasing seafood from grocery wholesalers, however, responding supermarkets typically purchase only 21% of their seafood products in fresh form, just over

Table 6. Primary type of seafood supplier reported by responding supermarkets in the North Central Region, by store characteristic.

Category/Characteristic	Seafood	Grocery	Foodservice	Aquaculturist
	Wholesaler	Wholesaler	Distributor	
----- percent -----				
All Respondents (n=87)	45	37	5	6
Status				
Chain (n=37)	49	22	5	14
Independent (n=49)	43	47	4	0
Population Density of Location				
Urban/Suburban (n=27)	51	32	7	10
Rural/Small Town (n=43)	15	57	8	20
Physical Size				
Small (n=27)	37	48	11	0
Large (n=38)	55	16	3	13
Annual Gross Sales Volume				
Low (n=46)	33	54	9	0
High (n=24)	75	4	0	0
Seafood Service				
Full-Service (n=42)	52	14	7	12
Self-Service (n=43)	35	60	2	0
Seafood Species Decisionmaker				
Store Manager (n=58)	48	41	5	0
Central Authority (n=28)	39	25	4	18
Seafood Supplier Decisionmaker				
Store Manager (n=48)	42	48	6	0
Central Authority (n=39)	49	23	3	13
Type of Seafood Purchases				
<20% Fresh (n=32)	25	66	9	0
50% Fresh (n=19)	79	5	5	0

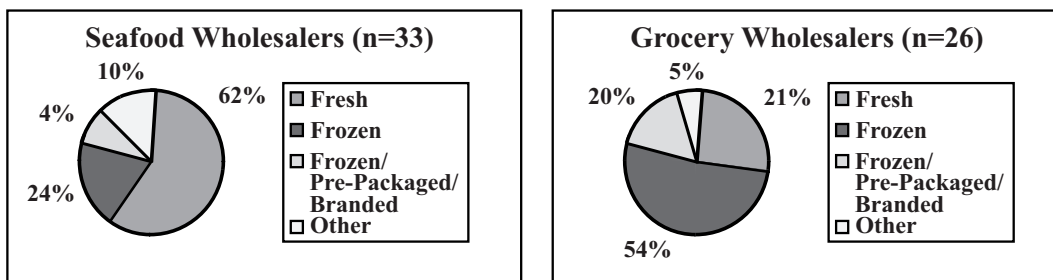


Figure 7. Types of seafood products purchased from seafood wholesalers and grocery wholesalers by responding supermarkets in the North Central Region.

one-half in frozen form (54%), another 20% in frozen / pre-packaged / branded form, and 5% in previously frozen form.

In a separate survey question, respondents were asked to identify their primary supplier for each of eight separate categories of seafood products, including fresh shrimp, frozen shrimp, fresh ocean fish, frozen ocean fish, fresh lake fish, frozen lake fish, fresh farm-raised fish, and frozen farm-raised fish. Responses show that the type and extent of suppliers used are markedly different for fresh versus frozen

seafood categories (Table 7). Supermarkets predominately purchase all four fresh categories from seafood wholesalers (62% of respondents on average). Purchases of frozen seafood products are more diversified across an assortment of supplier types, although grocery wholesaler is the leading supplier type for all four frozen categories (42% on average). More than one-fifth of supermarkets (27% on average) purchase frozen products from seafood wholesalers. In contrast, less than one-fifth of respondents (15% on average) reported purchasing fresh products from grocery whole-

salers. Small differences in supplier utilization show up across species categories. Grocery wholesalers are utilized more by purchasers of frozen shrimp (47%) and frozen ocean fish (49%) than by purchasers of frozen lake fish (40%) and frozen farm-raised fish (34%). In addition, the proportion of respondents purchasing fresh farm-raised fish from seafood wholesalers (53%) is significantly lower than the proportions purchasing other fresh species categories from seafood wholesalers (62-67%).

Table 7. Extent to which responding supermarkets in the North Central Region utilize different supplier types when purchasing different categories of seafood.

Categories of Seafood Products	Seafood Suppliers				Total	Other Types
	Seafood Wholesalers	Grocery Wholesalers	Foodservice Distributors	Other		
	-----percent-----					
Fresh shrimp (n=52)	67	19	6	8	100%	3
Frozen shrimp (n=81)	22	47	12	19	100%	5
Fresh ocean fish (n=65)	62	14	6	18	100%	4
Frozen ocean fish (n=76)	22	49	12	17	100%	3
Fresh lake fish (n=67)	67	13	3	17	100%	5
Frozen lake fish (n=67)	36	40	15	9	100%	3
Fresh farm-raised fish (n=64)	53	16	6	25	100%	6
Frozen farm-raised fish (n=61)	28	34	18	20	100%	5

Summary and Information Usage

Aquaculture in the North Central Region is a new, developing industry. As a result, aquaculturists must work extra hard to develop realistic, accurate marketing plans. Reliable market information is needed for developing a sound marketing plan. This publication reports survey data on the supermarket segment of the NCR seafood market.

A 1996/97 marketing survey provided data on the market for seafood in NCR supermarkets. Characteristics of NCR supermarkets are evaluated in terms of location in various types of population centers, chain or non-chain status, physical store size, ethnic composition of the customer base, volume of annual gross sales, type of

service provided in the seafood department, and who makes decisions about seafood species and suppliers. Survey data were analyzed and discussed for different types of supermarkets regarding best selling species, types of seafood products purchased, and the type and extent of suppliers used.

This publication provides aquaculturists with some general information on the market for seafood among NCR supermarkets. This information can be used in several ways. One is to familiarize the aquaculturist with the workings of supermarkets. Armed with this understanding, the aquaculturist can do preliminary, realistic, thinking and planning first about the marketing aspect of the enterprise and then about the entire aquaculture operation. A second use of this

information is for securing outside capital for investment into the aquaculture operation. Data from scholarly research on likely markets is an important part of any presentation to potential investors. A third use of this market information is to encourage aquaculturists to do their own customized market research into targeted market segments, particularly supermarkets. With customized market information, an aquaculturist can design a specific marketing strategy and develop an enterprise budget. Planning is crucial to business success. Without accurate, realistic market information, accurate planning cannot be accomplished.



References

Gall, Ken and Linda O'Dierno. 1995. *Aquaculture marketing survey: consumers, retail stores, and food service in New York and New Jersey*. New Jersey Department of Agriculture, New York Sea Grant, Northeast Regional Aquaculture Center.

National Fisheries Institute. 1998. Website <www.nfi.org>.

Progressive Grocer. 1992-98. Progressive Grocer Co., E. B. Walzer, New York. various issues.

Riepe, Jean Rosscup. 1998a. *Yellow perch markets in the North Central Region: results of a 1996/97 survey*. B-756, Department of Agricultural Economics, Office of Agricultural Research Programs, Purdue University, West Lafayette, Indiana.

Riepe, Jean Rosscup. 1998b. *Walleye markets in the North Central Region: results of a 1996/97 survey*. Technical Bulletin Series #113. North Central Regional Aquaculture Center, Ames, IA.

Seafood Business. 1992-95. various issues.

Seafood Leader. 1992-98. Waterfront Press Co., Seattle, Washington. various issues.

Supermarket Business. 1992-98. Howfrey Communications, Teaneck, New Jersey. various issues.

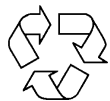
Supermarket News. 1992-98. Capital Cities Media, Inc., New York. various issues.

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