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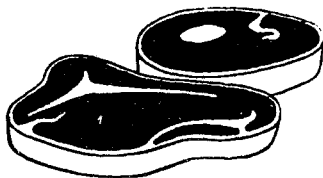
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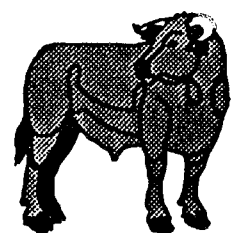
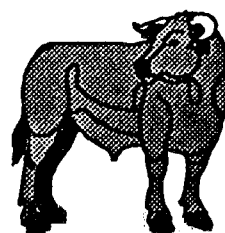
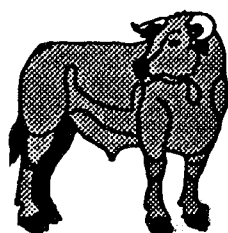
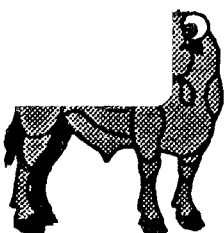
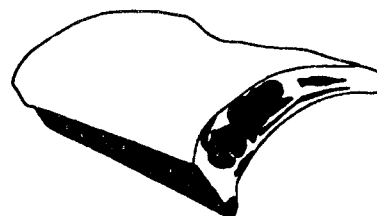
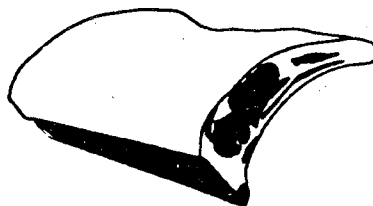
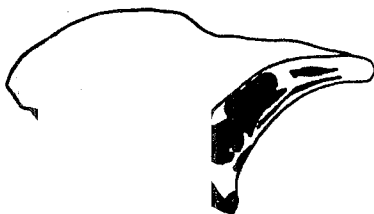
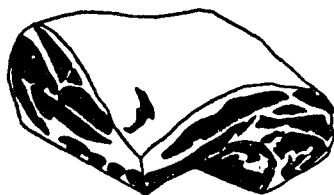
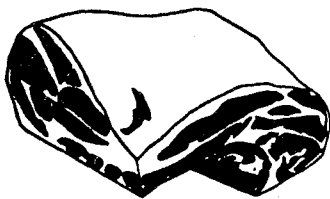
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The Economics of Exporting North Dakota Beef to Pacific Rim Markets



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Highlights

Beef markets in Pacific Rim countries hold export potential for quality meat products produced in North Dakota. This potential grows as their economies expand and develop. With three-fourths of the world's population located in the Asian Pacific, the United States and North Dakota beef producers should consider the market opportunity that the region holds.

Feeding cattle for export to Pacific Rim countries requires special considerations. These include expenses for an extended feeding period, packaging, grading and inspection, shipping, insurance, and increased paperwork. Cattle should be fed to higher weights, 1400 to 1600 lbs, which increases time on feed. Shipping charges are greater for meat shipped to Pacific Rim countries. Personal visits to Pacific Rim customers may also be necessary to meet with meat buyers before shipping to these markets.

In spring of 1993, a project was completed at NDSU that was designed to assist North Dakota beef producers in developing niche markets for beef in Asian countries. Fifteen heavyweight steers were slaughtered at the NDSU Meats Laboratory over several months and selected cuts were shipped to Japanese and Taiwanese markets. Both liveweight and dressed weight data were collected on each steer to determine yields of carcasses and individual cuts from steers fed to heavier slaughter weights than current industry standards. The beef cuts were well accepted in both countries.

Dr. Martin Marchello at NDSU produced a 25-minute VHS tape, International Marketing of North Dakota Beef. It provides information on North Dakota cattle production, slaughtering, cutting, packaging, and logistics necessary to market beef to Pacific Rim countries.

The Pacific Rim markets for beef will expand in future years and offer a potential niche market for cattle fed and slaughtered in North Dakota. However, this is not to suggest that the market is easy to penetrate. A great deal of time and effort is necessary to identify potential buyers and the specialized products that they require. Cattle must be fed specifically to meet Pacific Rim market specifications, and a domestic market must be maintained for the beef cuts that are not used in the export market.

The Economics of Exporting North Dakota Beef to Pacific Rim Markets

Larry D. Stearns, Timothy A. Petry, and Martin J. Marchello¹

Introduction

Cattle are an important source of income to North Dakota agricultural producers, ranking second only to wheat in generation of cash receipts from farm marketings. Cash receipts from cattle accounted for 18 percent, or \$549 million in 1991, of total crop and livestock producers' cash receipts. On January 1, 1994, the state had 1,900,000 head of cattle on 14,500 farms. Income from cattle exceeds income from crops in counties in the West Central, South Central, and Southwest districts in North Dakota (NASS 1994).

Rural economic development has emerged as a high priority public policy issue in North Dakota. Policymakers have sought to increase value-added livestock enterprises in the state as a way to increase economic activity. Livestock production has the highest multiplier effect of any sector in the North Dakota economy, generating \$4.49 in gross business volume for each dollar of sales in the livestock sector.

No large-scale slaughter plant for fed steers and heifers exists in North Dakota, and producers must transport cattle several hundred miles for slaughter. Therefore, North Dakota producers are at a market disadvantage compared to other cattle-feeding states, which is an especially critical factor when considering the tight margins that exist in the cattle feeding industry.

North Dakota feedlots could develop niche markets for beef to enhance revenue from cattle feeding. The recent liberalization of Japanese import restrictions on beef products has created a desire for North Dakota cattle feedlot operators to produce animals that would meet the specifications of the Japanese beef market.

Since per capita consumption of beef is increasing in Japan and other Pacific Rim countries, a potential market for North Dakota grown beef exists. Instead of shipping feed and feeder cattle out of state, increased economic activity could be generated by feeding cattle for the export market. A specialty beef slaughter plant to process beef to meet the specification of the export markets would create additional jobs and generate additional economic activity if enough cattle were ultimately fed for the export market.

The Asian beef trade is stringent with regard to meeting specific product characteristics that may be different from U.S. products. Considerable importance is placed on a record of success in meeting contractual obligations and developing long-standing business arrangements based upon records of performance. Furthermore, much paperwork and advance preparations are necessary to export beef. This report was designed to help North Dakota producers address these concerns.

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The Pacific Rim Markets

The Pacific Rim markets hold tremendous export potential for quality meat products. This potential grows each day as the region's economy expands and individual countries develop. With three-fourths of the world's population centered in Asian Pacific countries, the U.S. beef industry's future in this region of the world is optimistic.

Income growth in Pacific Rim countries has fueled demand for meat in that part of the world (Haggard 1993). The wave of economic growth that began in Japan two decades ago has spread throughout the Pacific Rim countries, creating new levels of export potential for the American beef industry. This report discusses the market potential for beef in Japan and Taiwan. It also discusses different aspects of shipping North Dakota beef products to Pacific Rim countries, the documentation needed, additional feeding and shipping expenses, and profit potential.

Japan

Japan is one of the largest foreign markets for U.S. agricultural products and the largest export market for U.S. beef producers. Because of the importance of this market, negotiations with Japanese officials have focused on reducing trade barriers for U.S. agricultural products (Khan et al. 1990). In 1988, the Beef Market Access Agreement (BMAA), signed with the United States, converted quotas restricting beef imports into tariffs which were to be lowered over the next five years. Liberalization of the Japanese beef market in April 1991 was expected to increase U.S. beef exports to Japan. Japanese demand for beef was expected to double in the next five years because of lower beef prices and continued expected growth in Japanese per capita income (Perkins 1989).

Before liberalization, the beef industry was faced with restrictive quotas, high tariffs, surcharges, and government buying schemes that kept much U.S. beef out of the Japanese market. In addition, Japanese farmers had a disproportionate influence on the government. This provided unusual protection for Japanese beef producers (Cook 1991). The agreement provided for a significant quota increase of 60,000 metric tons per year until April 1, 1991, when all quotas were removed. Industry leaders stated, at that time, that removal of quotas alone would not be enough to open the market. They insisted that the Livestock Industry Promotion Corporation (LIPC), a Japanese government organization that controlled most imports, also be removed from the system.

LIPC profited on imported beef through a complex pricing system which marked up the price of imported beef by 195 percent. Profits were distributed to Japanese cattle producers through a price stabilization program (Cook 1991). Before the agreement, there was a 25 percent ad valorem tariff on beef imports. On April 1, 1991, LIPC, along with its surcharges and levies, were removed. In return, a new tariff of 70 percent ad valorem was established the first year. This tariff was lowered to 60 percent the second year, and 50 percent the third. In 1993, future reductions were subject to negotiation.

U.S. exports to Japan have increased 70 percent since the agreement in 1988 (Smith 1993). Falling meat prices have concerned Japanese producers who want import restrictions increased (Williams 1993). Japanese producers are small operations compared with their U.S. counterparts, typically producing and selling only several head of cattle per year. Therefore, relatively high domestic beef prices are necessary for Japanese producers to realize a profit.

Japanese Imports

Australia has dominated the Japanese beef import market since the early 1970s. U.S. expansion in the import market began in 1979 with the introduction of high-quality (HQ) frozen beef (Khan et al. 1990). Three countries provide the majority of Japanese meat imports: United States, Australia, and New Zealand (Table 1). Most of the Australian meat shipments are lower quality grass-fed beef, referred to as popular beef, which makes up the majority of the market. End users of popular beef are supermarkets and fast food or family restaurants. Popular beef is also sensitive to the prices of poultry and pork, with pork being the more important of the two. The United States supplies chilled and frozen grain-fed beef which is considered to be higher quality than grass-fed beef (Khan et al. 1990).

Since the agreement was signed in 1988, with decreased quotas and increased tariffs, Japanese import patterns have shifted. Fewer frozen products are being imported, while imports of fresh and chilled beef have increased. The changes in U.S. exports are shown in Table 2.

Table 1. Japanese Beef Imports and Market Share¹ for United States, Australia, and New Zealand, 1965 to 1991

Country	1965	1975	1985	1987	1990 ²	1991 ²
	----- metric tons -----					
United States	7 (0.0)	3,545 (7.9)	45,938 (30.6)	82,483 (38.1)	164,393 (42.8)	151,508 (43.6)
Australia	7,774 (71.9)	37,109 (82.6)	93,129 (62.0)	120,552 (55.6)	198,463 (51.7)	183,162 (52.7)
New Zealand	2,569 (23.8)	3,512 (7.8)	6,965 (4.6)	7,890 (3.6)	13,291 (3.5)	7,674 (2.2)
Other	463 (4.3)	757 (1.7)	4,175 (2.8)	5,746 (2.7)	8,059 (2.1)	5,493 (1.5)
Total	10,813	44,923	150,207	216,671	384,199	347,829

¹Market share in parentheses.

²1990 and 1991 import totals include boiled beef and edible offal.

Source: Khan et al. 1990. *Meat Marketing in Japan: A Guide for U.S. Meat Exporting Companies*.

Table 2. U.S. Exports of Fresh Chilled, Fresh Frozen, and Prepared and Preserved Beef to Japan, 1988-1992.

Category	1988	1989	1990	1991	1992
	----- metric tons -----				
Fresh and Chilled	na	100,386	49,219	55,097	64,096
Fresh Frozen	na	169,837	142,676	119,784	142,459
Preprd and Presrvd	na	2,075	1,175	1,646	1,926
Total	163,093	272,298	193,070	176,527	208,481

Source: *World Livestock Situation*, FAS/USDA, (various issues).

Japanese Consumption

Japan's per capita beef consumption has trended upward. The Japanese per capita beef consumption increased from 4.4 kg (20.0 lbs) in 1980, to 9.6 kg (43.6 lbs) in 1992 (USDA 1992; USDA 1993). Japanese per capita consumption is shown in Table 3. Two reasons for the increase in imports of U.S. beef are lower beef prices, resulting from increased imports and higher disposable income of Japanese consumers. Factors that may have slowed current growth in consumption include lower income and population growth, slowing changes in dietary habits, and growing consumer health consciousness (Khan et al. 1990).

Table 3. Per Capita Beef Consumption for Japanese and Taiwan, 1985-1992.

Year	Japan	Taiwan
	(kg)	(kg)
1985	6.5	1.9
1986	6.8	2.2
1987	7.2	2.2
1988	7.3	2.5
1989	8.0	2.6
1990	8.7	2.5
1991	9.1	2.8
1992	9.6	2.8

Source: FAS/USDA, March 1992.

Taiwan

Taiwan is an important and fast-growing market for agricultural goods. It is one of the world's highest ranking net import markets for agricultural products and was the sixth most important U.S. overseas farm product market in 1992 (Huang 1993). With its enormous trade surplus and wealth of foreign exchange, Taiwan came under pressure to open its markets to foreign goods and services. Opportunities for meat exporters stem from consumer's changing tastes and demand for high-quality food.

Imports accounted for 90 percent of the total domestic consumption of beef in Taiwan in 1986. The U.S. share of meat imports was only 6.3 percent compared, with 78.6 percent for Australia in 1987 (Table 4). The U.S. market share increased to 8.0 percent in 1992, compared to Australia's 76.6 percent. Imports from countries other than the United States, Australia, or New Zealand have decreased in the last five years. However, the U.S. beef carcass meets the requirements for high-quality beef and would be subject to a \$0.37 per pound import tariff, while the Australian carcass would have a tariff of \$0.47 per pound for lower quality grass-fed beef. This tends to lessen any comparative advantage that Australian beef has over U.S. beef (Green et al. 1989).

Table 4. Taiwanese Imports of Frozen, Chilled, and Preserved Beef and Market Share¹ for United States, Australia, and New Zealand, 1975-1992.

Country	1975	1985	1987	1992
	----- metric tons -----			
United States	41 (0.2)	1,734 (6.3)	1,968 (6.0)	3,867 (8.0)
Australia	22,960 (89.9)	21,492 (78.6)	25,666 (78.3)	36,949 (76.6)
New Zealand	1,325 (5.2)	1,909 (7.0)	2,722 (8.3)	7,246 (15.0)
Others	1,205 (4.7)	2,707 (9.9)	2,444 (7.5)	182 (0.4)
Total	25,531	27,347	32,800	48,244

¹Market share in parentheses.

Source: Council of Agriculture, *Agricultural Trade Statistics of Republic of China*, 1992.

Beef consumption in Taiwan, which grew substantially in the 1980s, is expected to rise continuously in the 1990s as real prices decrease, income rises, and diets change (Table 3). Beef and veal are most sensitive to income and price changes (Huang 1993). Rather than competing with lower quality and lower-priced domestic beef, the U.S. meat industry has positioned U.S. beef as a premium product (Wong and Khan 1989).

U.S. exports of different beef products are shown in Table 5. There has been little change in the proportion of products, but the volume of imports has increased in this time period.

Table 5. U.S. Exports of Fresh Chilled, Fresh Frozen, and Prepared and Preserved Beef to Taiwan, 1988-1992.

Category	1988	1989	1990	1991	1992
	----- metric tons -----				
Fresh and Chilled	203	2,092	545	857	1,545
Fresh Frozen	38,146	36,387	37,480	44,048	46,639
Preprd and Presrvd	9	89	76	61	60
Total	38,358	38,568	38,101	44,966	48,244

Source: Council of Agriculture, *Agricultural Trade Statistics of Republic of China*, 1992.

Beef consumption in Taiwan has tripled over the last two decades (Wong and Khan 1989). Consumption of beef is lower when compared with pork and poultry. The low level of beef consumption may be attributed to cultural preferences. Taiwanese consumers generally prefer leaner range-fed beef which is less expensive than premium U. S. corn-fed beef. The marbled meat from the United States is less suitable for the stir-fry method of food preparation that most Taiwanese use. A high proportion of high-quality U.S. beef is consumed in restaurants and sold in supermarkets. The market for high-quality U.S. beef is largely composed of the expatriate community, tourists, and Western-educated Taiwanese (Wong and Khan 1989).

South Korea

South Korea is an important and growing market for agricultural goods. It is the world's sixth largest net import market for agricultural products and fourth largest export destination for U.S. agricultural goods. Major imports include cattle hides, cotton, wheat, corn, soybeans, and beef (Elleson and Dyck 1993). Koreans prefer beef, which many households view as a health food. A joint study of the Korean beef market by major beef-exporting nations estimated that beef imports in Korea could reach 400,000 tons by early in the next decade, making the Korean market the rough equivalent of the Japanese market today (Haggard 1993).

In 1992, Korea imported an estimated 132,000 metric tons of beef. U.S. exports accounting for 59,000 metric tons, valued at \$217 million, a 17 percent increase over 1991 exports (Haggard 1993). A number of trade barriers remain in Korea, beef import quotas, import taxes, and limited access to end users, remain in Korea. South Korean beef consumption and imports, historical and projected, are shown in Figure 1.

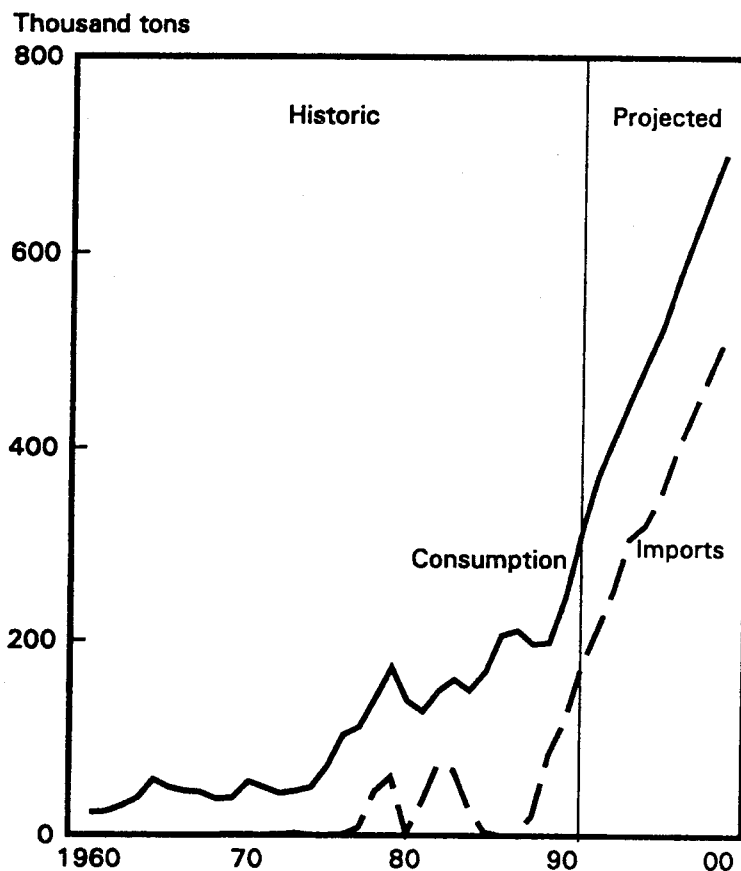


Figure 1. South Korean Beef Consumption and Imports.
Source: Webb, August 1993.

People's Republic of China

China is rapidly transforming from a centrally planned to a more market-oriented and internationally open economy. With China's population of 1.2 billion and a real per-capita income growth rate averaging 6 percent since the late 1970s, any changes affecting food consumption and production could have a major impact on global markets (Webb 1993). A net increase in population of 13.5 million in 1992 alone indicates the market's size (Haggard 1993).

China will grow as a market for select variety meat items that can be supplied in large volumes. Already, the demand is strong for these dollar-a-pound items. Future prospects in China for beef imports will advance with China's entry into the General Agreement on Tariffs and Trade. Duties and other charges on imported beef amount to 80 percent of the landed price (Haggard 1993).

Hong Kong

Hong Kong is Asia's second largest agricultural importer and the fourth largest U.S. market in the region because of its role as a transshipment center in the Asia Pacific region. It has grown substantially as a market for U.S. farm products during the last two decades. Per-capita beef consumption in Hong Kong averaged 13.9 kilograms in 1989-91 and is expected to increase to 16.2 kilograms by 2000. Imports of beef (chilled, frozen, and live cattle slaughtered for fresh beef) is expected to reach 100,000 metric tons by 2000. The U.S. share of Hong Kong's beef imports has grown since the mid 1980s and was 11.4 percent in 1991. U.S. beef is mostly restricted to high-quality cuts for the hotel and restaurant trade, because it is generally higher priced than beef from other sources (Caplan 1993).

Southeast Asia

The Malaysian economy is one of the fastest growing in the world; with livestock production and consumption, composed primarily of poultry and pork, expanding significantly (Giordano 1993). Indonesia is expected to sustain strong economic growth and become an expanding agricultural market in the 1990s. However, wheat, cotton, and soybean products are projected to show the largest growth (Hjort and Landes 1993). Vietnam's role in agricultural trade will depend largely on the reform process and the ability of the government to overcome its current problems (Levin and Giordano 1993). In the long term, the resource-rich and populous nation of Vietnam will become more integrated into the world trading system and will replicate the development pattern of its neighbors (Haggard 1993).

Local Impact

Australia ships lower quality range-fed beef to Japan and Taiwan and holds an advantage over the United States in imports of this grade of beef. Australia is able to ship chilled beef, preferred by Japanese, at lower cost than the United States. U.S. producers are opting to compete with higher quality Wagyu beef produced in Japan, although the market is structured so that Japanese-produced Wagyu beef brings higher prices (Ishmael 1992). Wagyu beef marbles differently, and both the fat and muscle tissue differ in texture and color from U.S. cattle. But, U.S. feeders have found that if they feed cattle slowly, restrict their intake, and feed them long enough, some cattle will qualify for the highest marbling grade in Japan (National Cattlemen's Association 1991). Liberalization of meat imports into Japan has provided an opportunity for North Dakota cattle producers and feeders, producing high-quality beef, to enter the beef export market. An Eastern North Dakota feedlot has fed steers for the Pacific Rim markets, slaughtered them, and shipped selected primal cuts to both Japan and Taiwan.

Feeding cattle for export to Pacific Rim countries involves special considerations. These include expenses for an extended feeding period, packaging, grading and inspection, shipping, insurance, and increased paperwork. To reach the higher grades, U.S. cattle must be fed to higher weights, 1400 to 1600 lbs. The time on feed must be increased for cattle to reach these weights (Munro 1990). Shipping charges are greater for meat shipped to Pacific

Rim countries. Chilled beef shipped to Japan by air-freight, costs approximately \$1.00/lb, while containers of frozen beef trucked to Seattle and shipped to Taiwan cost approximately \$0.22/lb for an 11-metric-ton container. The tariff on beef shipped to Japan is charged on the cost of meat, including the transportation costs. This makes shipping meat by air almost prohibitive. A comparison of the costs for a North Dakota feedlot feeding for the domestic market and for Japan is found in Table 6.

Table 6. Comparison of Estimated North Dakota Cattle Feeding Costs With Estimated Costs of Feeding Cattle for the Japanese Market, 1993 (Hypothetical Data).

Feedlot Expenses	Beef fed for:		
	U.S. Market	Japanese Market	
Feeder calf	\$ 534.00	\$ 534.00	562 lbs. @\$95.00/cwt
Trucking	9.06	9.06	
Veterinary costs	11.50	11.50	
Feed costs ¹	165.39	246.16	
Operating interest	34.72	52.65	8 % interest on cost of calf, trucking in and out, veterinary costs, and 1/2 of feed costs.
Death loss	5.34	5.34	1 % of cost of calf
Yardage cost	52.14	71.10	\$0.24 per day
Total costs	\$ 812.14	\$ 929.81	
Days on feed	220	300	
Starting weight (lbs)	562	562	
Finished weight (lbs)	1,232	1,464	
Gain (3.01 lbs/day)			
Cost/lb of gain	\$ 0.4151	\$ 0.4447	
Breakeven price	\$65.92/cwt	\$63.51/cwt	

¹Feed costs: 1992 Average feed prices. (North Dakota Agricultural Statistics Service, 1993)

Corn	\$1.90/bu
Barley	\$1.75/bu
Alfalfa	\$56.00/ton
Straw	\$20.00/ton
Min. supp.	\$0.05/lb

Source: Rations developed from Appendix Table 1.

A producer will incur additional expenses when shipping to international markets compared to normal slaughter and shipping costs. USDA meat inspection by the Food Safety and Inspection Service (FSIS), is mandatory for meat sold in domestic and export markets. USDA meat inspectors are located at all meat plants operating under federal inspection (located in approximately 24 cities across North Dakota). USDA beef grading performed by the Agricultural Marketing Service (AMS) is optional, but highly recommended for the export

market. USDA graded beef is assessed a lower tariff than non-graded beef in Japan, and top-quality grades receive higher prices. An official grader is located at the AMS, USDA office at the West Fargo Stockyards. However, he has livestock market reporting responsibilities and would not be able to travel to distant locations in North Dakota.

It should be emphasized that marketing beef to a Pacific Rim buyer differs from marketing beef to a U.S. customer. Personal selling, at least initially, is essential and likely would involve a visit to the specific customer. Face-to-face interaction is necessary, and several meetings and test shipments may be necessary before an agreement is reached. Hiring professional export market consultants may be advised, particularly if the beef producer has limited knowledge of Pacific Rim markets, customs, and product characteristics. Additional shipping charges are outlined in Table 7.

Table 7. Summary of Expenses for Shipping Beef to Japan and Taiwan, 1993

Category	Range of Costs
Slaughtering	\$ 20 - 40/head, depending on offal arrangements.
Grading	\$ 35/hour plus \$.28 per mile. About \$.01/lb (carcass wgt).
Processing and Packaging	\$.14 - .23/lb, \$.16 - .17/lb common (carcass wgt).
Insurance	1 percent of the value of the meat.
Shipping	Air freight to Japan - \$ 1.00/lb Trucking to Seattle; boat to Taiwan - \$.22/lb for 11 mt container.

Source: Tom Bresnahan - Sinners Bros. and Bresnahan, Casselton, ND.

A North Dakota beef feedlot may also face other trade barriers beyond import quota and tariffs. Meat can only be imported from disease-free countries, and appropriate certification must accompany meat products or live animals to indicate that they are disease-free. Certain food additives and food colorings are banned. The meat distribution system can be considered an import barrier, as can the practice of allowing imported meats to be sold only at certain times during the day. Finally, price markups can be a trade barrier (Khan et al. 1990).

Export Documentation

Exporting meat overseas requires much documentation. All documents are the responsibility of the shipper, although the shipper will commonly use a freight forwarder to prepare some of the documentation (Seim 1990). A freight forwarder acts on behalf of the exporter in arranging the ocean or air transport service (Welby and McGregor 1992). A listing of documentation and explanation of the requirements is provided in Table 8.

Profit Potential

An example of potential profitability for shipping meat products to Japan is shown in Table 9. Additional profits for exported beef range from $-\$0.01$ to $\$0.28$ per pound for selected Institutional Meat Purchase Specification (IMPS) cuts. The shoulder clod, boneless brisket, beef round knuckle, beef top round, and beef bottom round showed the lowest additional profit the week of July 15, 1993, while the ribeye roll and strip loin showed the largest profit potential. These could vary with changes in domestic and Japanese meat prices. In addition, individuals may be able to capture more (or less) in individual negotiations with Japanese firms.

Meat wholesalers in Japan and Taiwan are purchasing only selected IMPS cuts of meat. When a producer enters the meat export business, he should realize that only certain cuts can be exported for a premium. A local market must be found to market trim and remaining cuts of meat.

Fact-Finding Trip to Japan

In December, 1991, Dr. Martin J. Marchello, NDSU Animal and Range Sciences, and Bob Sinner, Sinner Bros. & Bresnahan, traveled to Japan and Taiwan to make direct contact with potential customers as part of a project to export North Dakota beef to Pacific Rim countries. In preparation for this trip, Dr. Marchello and Mr. Sinner studied Japanese business culture to gain insights into the proper approach to Japanese businesses and to better understand and operate within their culture. They learned that business contacts are best when made through a network of contacts that had been established earlier. A "cold" call is not appropriate in Japan. During discussions with a meat products distribution company in Japan, they were able to reassure this company that North Dakota beef producers could meet box size specifications, shipping requirements, quality controlled workmanship and deadlines. Following this trip, it was determined that there was potential for shipping beef to Japan. Steers were fed for the Japanese market, slaughtered, and shipped to Japan to test the market.

Table 8. Documentation Required to Export U.S. Products.

Pro Forma Invoice	A quotation in an invoice form. The buyer uses this form when applying for an import license or arranging for funds.
Commercial Invoice	A bill for the goods and required to show ownership to arrange payment.
USDA Certificate of Inspection for Export	A certification of wholesomeness of the meat products.
Packing List	A list included in or attached to the outside of the package. It itemizes the materials in each individual package and indicates the type of package. It shows the individual net, legal, tare, and gross weights, and measurements for each package.
Dock Receipt	A transfer of accountability when the export item is moved by domestic carrier to the port of embarkation and left with the international carrier for export.
Certificate of Origin	A signed certificate that states the origin of the export item.
Certificate of Insurance	A certificate laying out general provisions of the policy, and detail the underwriter, policy number, name of insured, loss payee, amount covered, vessel, and routing of the shipment.
Shipping Manifest	A list showing where the cargo is stowed, indicating destination port. Must be presented to customs officials before the ship may land to discharge cargo.
Shipper's Export Declaration	The primary document used to record and control U.S. exports to compile U.S. export statistics, and to administer the requirements of the Export Administration Act.
Ocean Bill of Lading or International Air Bill	A contract between the owner of the goods and the carriers.

Source: Welby and McGregor 1992.

Table 9. Meat Product Costs and Potential Profitability in Japan of Selected Beef Cuts, 1993.

Product	Omaha Wholesale 7/17/93	Freight to Japan	C&F	Japan C&F Port U.S. Frozen		Potential Margin
				low	high	
112A Ribeye Roll	3.72	.22	3.92	3.96	4.20	.04 to .28
114 Shoulder Clod	1.12	.22	1.34	1.33	1.49	-.01 to .15
116A Inside Roll	1.32	.22	1.54	1.63	1.70	.09 to .16
116B Chuck Tender	---	.22	---	1.56	1.83	
120 Boneless Brisket	1.02	.22	1.24	1.26	1.38	.02 to .14
167 Beef Round Knuckle	1.33	.22	1.55	1.58	1.68	.03 to .13
168 Beef Top Round	1.57	.22	1.79	1.80	1.90	.01 to .11
170 Beef Bottom Round	1.17	.22	1.39	1.43	1.49	.04 to .10
180 Strip Loin	3.26	.22	3.48	3.63	3.75	.15 to .27
184 Top Sirloin Butt	1.87	.22	2.09	2.16	2.28	.07 to .19
189 Full Tenderloin	---	.22	---	4.96	5.08	

Column one: The Institutional Meat Purchase Specification (IMPS) number and description of wholesale cut of meat.

Column two: The wholesale price of meat cuts for the week ending July 17, 1993.

Column three: The freight cost.

Column four: (C&F) is the sum of columns two and three.

The next two columns are the low and high prices for U.S. meat at a Japanese port for the week of July 15, 1993.

The remaining two columns show the range of profit potential for each cut of meat.

Source: Meat Export Research Center, August 1993.

North Dakota Steer Feeding, Slaughtering, and Beef Exporting Experiment

In the spring of 1993, NDSU completed a project that was designed to assist North Dakota beef producers in developing niche markets for beef in Asian countries. This project included slaughtering 15 heavyweight steers at the NDSU Meats Laboratory over a period of several months and shipping selected cuts to Japanese and Taiwanese markets. Both liveweight and dressed weight data were collected on each steer to determine yields of carcasses and individual cuts from steers fed to heavier slaughter weights than current industry standards. A summary of these data is found in Tables 10 and 11.

Table 10. Yield Results, Shrink, and Percent of IMPS Cuts, Trim, and Bone and Waste for 15 Steers Slaughtered for Pacific Rim Markets, 1993.

Yield	Average	Range	IMPS Cuts (IC)	Average	Range
Farm Wgt	1448.0	1250.0 - 1565.0	Right half (lbs.)	197.3	162.7 - 219.7
Lab Wgt	1410.9	1227.0 - 1544.0	Left half (lbs)	196.1	158.9 - 226.3
			Total	393.5	321.6 - 446.0
Carcass Yield (hot lbs.)	888.4	768.0 - 996.0	Right (%)	45.9	39.7 - 52.8
(%)	63.0	61.2 - 65.3	Left (%)	45.4	39.1 - 51.2
Carcass Yield (cooled lbs.)	874.2	757.0 - 978.0	Total (%)	45.7	39.4 - 51.6
(%)	62.0	60.2 - 64.2	IMPS cuts (% of live wgt)	27.9	23.8 - 31.6
Carcass Yield (aged lbs.)	862.3	750.0 - 965.0	IMPS cuts:Bone and Waste	1.6:1	0.9:1 - 2.1:1
(%)	61.1	59.0 - 63.9			
Shrink			Trim		
<u>Travel Shrink (%)</u>	2.6	1.2 - 5.7	Right (lbs.)	100.6	71.2 - 132.4
<u>Cooler Shrink (hot to cooled)</u>			Left (lbs)	103.6	73.6 - 143.2
Right 1/2 (lbs.)	6.9	2.0 - 9.0	Total (lbs)	204.2	144.8 - 275.6
(%)	1.5	0.4 - 2.1	Right (%)	23.3	17.4 - 27.2
Left 1/2 (lbs.)	7.3	2.0 - 10.0	Left (%)	23.9	18.1 - 29.9
(%)	1.7	0.4 - 2.3	Total (%)	23.6	17.8 - 28.6
<u>Aged Shrink (cooled to aged)</u>			Trim (% of live wgt)	14.4	11.0 - 17.9
Right 1/2 (lbs)	6.1	0.0 - 12.0	IC+trim (% of live wgt)	42.3	35.3 - 47.3
(%)	1.4	0.0 - 2.8	IC+Trim:Waste&Bone	2.4:1	1.3:1 - 3.1:1
Left 1/2 (lbs)	5.8	0.0 - 14.0			
(%)	1.3	0.0 - 3.2	Waste & Bone (W&B)		
<u>Total Shrink (hot to aged)</u>			Right (lbs)	134.2	99.9 - 180.1
Right 1/2 (lbs)	12.9	8.0 - 18.0	Left (lbs)	131.9	101.1 - 178.1
(%)	2.9	1.9 - 4.2	Total (lbs)	266.1	203.4 - 358.2
Left 1/2 (lbs)	13.1	7.0 - 22.0	Right (%)	31.2	24.4 - 43.1
(%)	2.9	1.6 - 5.0	Left (%)	30.6	24.2 - 42.3
			Total (%)	30.9	24.7 - 42.7
			W&B (% of live wgt)	18.9	14.8 - 26.4

Table 11. Average Weights and Range of Weights for IMPS Cuts, Trim, and Bone and Waste for Fifteen Steers Slaughtered for Pacific Rim Markets, 1993.

Front Quarter				Hind Quarter			
		Average (lbs)	Range(lbs)			Average (lbs)	Range (lbs)
Rib (9.1% of aged carcass)				Beef Round (22.0%)			
		39.1	32.6 - 46.7			95.0	83.0 - 107.4
(IMPS)				(IMPS)			
112	Ribeye roll	13.4	9.6 - 16.9	167	Beef Round Knuckle	10.1	8.2 - 13.3
109	Beef rib roast	21.0	18.6 - 22.4	168	Beef Top Round	22.1	17.2 - 25.2
123	Short Rib	5.3	4.0 - 6.6	170	Beef Bottom Round	29.6	24.6 - 35.5
	Trim	9.2	4.0 - 18.4		Trim	8.8	7.4 - 11.4
	Bone	5.8	3.6 - 8.2		Bone	16.4	13.3 - 19.0
	Waste	6.4	2.9 - 13.8		Waste	7.9	3.1 - 16.0
Beef Chuck (27.5%)				Beef Loin (14.9%)			
		8.7	97.0 - 137.0			64.3	53.7 - 75.9
114	Shoulder Clod	21.4	15.1 - 27.5	174	Short Loin	19.7	17.2 - 21.9
116A	Inside Roll	30.1	20.0 - 39.3	180	Strip Loin	10.0	8.2 - 12.0
116B	Chuck tender	3.1	2.4 - 3.7	189	Tenderloin	7.6	5.5 - 10.3
115	Sq. Cut Chuck (trim)	36.4	30.7 - 46.4	191	Tenderloin Butt	3.9	3.2 - 4.8
	Trim	16.3	4.6 - 39.1	183	Sirloin Boneless	22.1	18.4 - 28.2
	Bone	18.0	14.0 - 21.5	184	Top Butt	9.2	6.4 - 12.1
	Waste	7.8	1.1 - 21.9	185	Bottom Butt	8.7	6.2 - 11.6
Plate (8.9%)					Trim	6.5	1.4 - 8.6
		38.6	32.0 - 47.0		Bone	7.8	3.4 - 11.1
123	Short Plate	5.7	2.3 - 9.3		Waste	9.8	5.0 - 18.7
	Boneless Plate(trim)	23.0	15.2 - 33.3	Flank (7.0%)			
	Bone	4.2	2.7 - 7.4			30.4	23.3 - 37.7
	Waste	5.8	0.6 - 15.3	193	Flank Steak	2.4	1.6 - 3.2
Shank (3.0%)					Trim	13.2	8.3 - 20.3
		13.0	10.6 - 15.9		Bone	1.2	0.0 - 16.5
117	Boneless	7.3	6.2 - 9.2		Waste	13.7	0.3 - 21.3
	Bone	5.3	4.4 - 6.1	Kidney (3.4%)			
	Waste	0.4	0.0 - 1.4			14.5	8.1 - 22.0
Brisket (4.4%)							
		18.8	14.0 - 23.9				
120	Boneless	9.9	7.6 - 12.0				
	Trim	1.0	0.0 - 2.8				
	Bone	3.3	1.7 - 4.9				
	Waste	4.7	1.9 - 8.2				

The liveweight of the steers ranged from 1,227 to 1,544 pounds, averaging 1,411 pounds. Hot carcass weight averaged 888 pounds, and cold carcasses averaged 874 pounds. Average fat cover was .5 inch (range .3 to .7 inches) with an average ribeye area at 13.6 square inches (range 11.5 to 15.3 square inches). The USDA quality grade breakdown for this group of steers included five prime minus, one choice plus, four choice average, and five choice minus. USDA yield grades averaged 3.5, ranging from 2.6 to 4.3. Hot carcass yields averaged 63.0 percent (range 61.2 to 65.3 percent) while chilled, aged carcasses yielded 61.1 percent (59.0 to 63.9 percent). Travel shrink for 15 steers averaged 2.6 percent (range 1.2 to 5.7 percent), while carcass shrink from hot carcass to aged carcass averaged 2.9 percent (range 1.6 to 5.0 percent)(Table 10).

Average carcass weights of IMPS cuts, trim, and waste for the steers slaughtered for the Pacific Rim markets are shown in Table 11 (*The Meat Buyers Guide* 1988). The rib cuts for 15 steers averaged 9.1 percent of carcass weight; chuck, 27.5; round, 22.0; and loin, 14.9; compared with current industry averages of 9.0, 29.0, 22.0, and 16.0 percent, respectively, as documented in *National Cattleman* (April, 1993). Percent yields for different cuts of meat from cattle finished to higher weights in this study were comparable to cattle marketed at lighter market weights (1100 to 1200 lbs.).

The shipments of beef cuts sent to Japan and Taiwan were well accepted in both countries. However, Taiwan seemed to be the most cooperative market in which to operate and was considered to hold the most potential of the two countries.

Summary

The beef markets in Pacific Rim countries hold export potential for quality meat products produced in North Dakota. This potential grows as their economies expand and populations increase.

Japan is one of the largest foreign markets for U.S. agricultural products and the largest export market for U.S. beef producers. U.S. negotiations with Japanese officials have reduced trade barriers for U.S. agricultural products. The Beef Market Access Agreement (BMAA), approved in 1988, turned quotas restricting beef imports into tariffs that were systematically lowered over the next five years. Liberalization of the Japanese beef market in April 1991 was expected to increase U.S. beef exports to Japan.

Taiwan is an important and fast-growing market for agricultural goods. It is one of the world's highest ranking net import markets for agricultural products and was the sixth most important U.S. overseas farm product market in 1992. Opportunities for meat exporters stem from consumer's changing tastes and demand for high-quality food.

South Korea is the world's sixth largest net import market for agricultural products and fourth-largest export destination for U.S. agricultural goods. Koreans prefer beef to other meats and many households view beef as a health food. A joint study of the Korean beef market by major beef-exporting nations estimated that beef imports in Korea could reach 400,000 tons by early in the next decade.

China, with a population of 1.17 billion and a real per-capita income growth rate averaging 6 percent since the late 1970s, could have a major impact on global markets. A net population increase of 13.5 million in 1992 alone indicate the market's size. Hong Kong is Asia's second largest agricultural importer and the fourth largest U.S. market in the region mainly because it serves as a transshipment center for the Asian Pacific. It has grown substantially as a market for U.S. farm products during the last two decades.

The Malaysian economy is one of the fastest growing in the world; livestock production and consumption, composed primarily of poultry and pork, are likewise expanding. Indonesia is expected to sustain strong economic growth and become an expanding agricultural market in the 1990s.

Feeding cattle for export to Pacific Rim countries requires some special considerations. These include expenses for an extended feeding period, packaging, grading and inspection, shipping, insurance, and increased paperwork. Personal visits to Pacific Rim meat buyers may also be necessary before shipping to these markets.

In the spring of 1993, NDSU completed a project that was designed to assist North Dakota beef producers in developing niche markets for beef in Asian countries. This project included slaughtering 15 heavyweight steers at the NDSU Meats Laboratory over a period of several months and shipping selected cuts to Japanese and Taiwanese markets.

Meat wholesalers in Pacific Rim countries may purchase only selected IMPS cuts of meat. When a beef producer enters the meat export business, they should realize that only certain cuts can be exported for a premium. A local market must be found to market trim and remaining cuts of meat.

A 25-minute VHS tape, *International Marketing of North Dakota Beef*, has been produced by Dr. Martin Marchello at NDSU. It provides information on North Dakota cattle production, slaughtering, cutting, packaging, and logistics necessary to market beef to Pacific Rim countries. Contact Dr. Martin Marchello, Department of Animal and Range Sciences, NDSU (701) 237-7641.

The Pacific Rim markets for beef will expand in future years and offer a potential niche market for cattle fed and slaughtered in North Dakota. However, the market is not easy to penetrate. A great deal of time is necessary to identify potential buyers and the specialized products that they require. Cattle must be fed specifically to meet Pacific Rim market specifications, and a domestic market must be maintained for the beef cuts that are not used in the export market.

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Appendix

Appendix Table 1. Feeding Summary for Finishing Cattle for Slaughter and Shipment to Japan and Taiwan, 1993.

Days on Feed	ADG	Gain	Weight	
	(lbs/day)	(lbs)	(lbs)	
			562	Purchase wgt.
Step 1	30	3.40	102	664
Step 2	30	3.20	96	760
Step 3	40	3.10	124	884
Step 4	60	2.90	174	1,058
Step 5	60	2.90	174	1,232
Step 6	80	2.90	232	1,464
				Slaughter wgt.
Total days	300	3.01		

Ration components by step								Min/
Pounds/head/day (as fed)				Alfalfa	Corn	Straw	Barley	vita
				T.D.M./Day				
Step 1	556	to	664	5.0	3.0	1.0	8.0	0.5
Step 2	664	to	760	3.0	6.0	2.0	10.0	0.5
Step 3	760	to	884	3.0	6.0	2.0	10.0	0.5
Step 4	884	to	1058	2.0	8.0	0.0	10.0	0.5
Step 5	1058	to	1232	2.0	20.0	0.0	5.0	0.5
Step 6	1232	to	1452	2.0	22.0	0.0	5.0	0.5

								Min/	Efficiency	Daily
Pounds/head (as fed)				Alfalfa	Corn	Straw	Barley	vita	of gain	intake
				pounds						
Step 1	556	to	664	150	90	30	240	15	5.15	17.5
Step 2	664	to	760	90	180	60	300	15	6.72	21.5
Step 3	760	to	884	120	240	80	400	20	6.94	21.5
Step 4	884	to	1058	120	480	0	600	30	7.07	20.5
Step 5	1058	to	1232	120	1,200	0	300	30	9.48	27.5
Step 6	1232	to	1452	160	1,760	0	400	40	10.17	29.5
Total to finish				760	3,950	170	2,240	150	7.59	
Unit prices				(ton)	(bu)	(ton)	(bu)	(lb)		
				\$56.00	\$1.90	\$20.00	\$1.75	\$0.05	(ND 1992 Avg)	
Total feed cost:									Total	
To 1232 pounds				16.80	74.30	1.70	67.08	5.50	\$165.39	
To 1452 pounds				21.28	134.02	1.70	81.67	7.50	\$246.16	
Additional feed costs									\$80.78	