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A Changing U.S. Potato Industry: Marketing Opportunities for Ohio Producers

Eugene Jones and Dave M. Kelley¹

The U.S. potato industry is best characterized as one of change. The driving forces behind this change are technological innovations of potato processing, socioeconomic characteristics of the U.S. economy, and improved marketing practices for fresh potatoes. Major processing innovations consist of new steam-peeling methods for minimizing protein losses, improved packaging procedures for maintaining freshness, and improved freezing methods for maintaining desirable color, crispness and other "plate appearances." Socioeconomic factors of major importance include rising income, expanding population, growing number of women in the work force, and an expanding fast-food industry. A marketing practice of considerable importance is uniform sizing and grading of potatoes in consumer packages.

Innovations in potato processing have given consumers a more nutritious and a greater variety of processed potato products. However, these innovations coupled with other socioeconomic factors have led to fewer potato producers and fewer potato processors. Socioeconomic factors have shifted potato consumption from fresh potatoes to processed potato products and have played a major role in shifting potato production from Northeastern states to Pacific Northwestern states. Other factors aiding the growth of potato production in the Pacific Northwest include availability of new land, government water projects, development of irrigation, and low land values. As these changes unfolded, thousands of potato producers in the 48 contiguous states were confronted with

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the challenge of maintaining their economic livelihood. Of particular concern in this article is an assessment of opportunities for Ohio producers to maintain and improve their economic livelihood in the face of a changing U.S. potato industry.

Description of Industry

Potatoes are produced in a wide geographic area because, in their fresh form, their high water content (80 percent) and low value lead to high transportation costs. These factors explain the concentration of potato production around population centers in the Northeastern states when consumption consisted mainly of fresh potatoes. For example, Northeastern states (all New England states together with New York and Pennsylvania) accounted for 30 percent of U.S. production in 1950 as compared to 18 percent for Pacific Northwestern states (Idaho, Oregon and Washington). By 1987, however, production in Northeastern states had fallen to 10 percent while that in Pacific Northwestern states had risen to 50 percent. The major factors accounting for this production shift are consumption shifts from fresh to processed potato products and a comparative advantage for Pacific Northwestern states in producing potatoes for processing frozen and dehydrated products.

Consumption of fresh potatoes in 1950 amounted to 100 pounds per capita while consumption of processed potato products totaled 6 pounds per capita. By 1987, consumption of processed products had ballooned to 75 pounds per capita and that of fresh potatoes had fallen to 52 pounds (Figure 1). More importantly, consumption of frozen potatoes increased during this period from less than one pound per capita to 45 pounds (Figure 2). Consumption of potato chips, dehydrated potato products, and canned potatoes also increased during this period, but at growth rates less dramatic than for frozen potatoes. These

CONSUMPTION OF ALL POTATOES

Pounds Per Capita

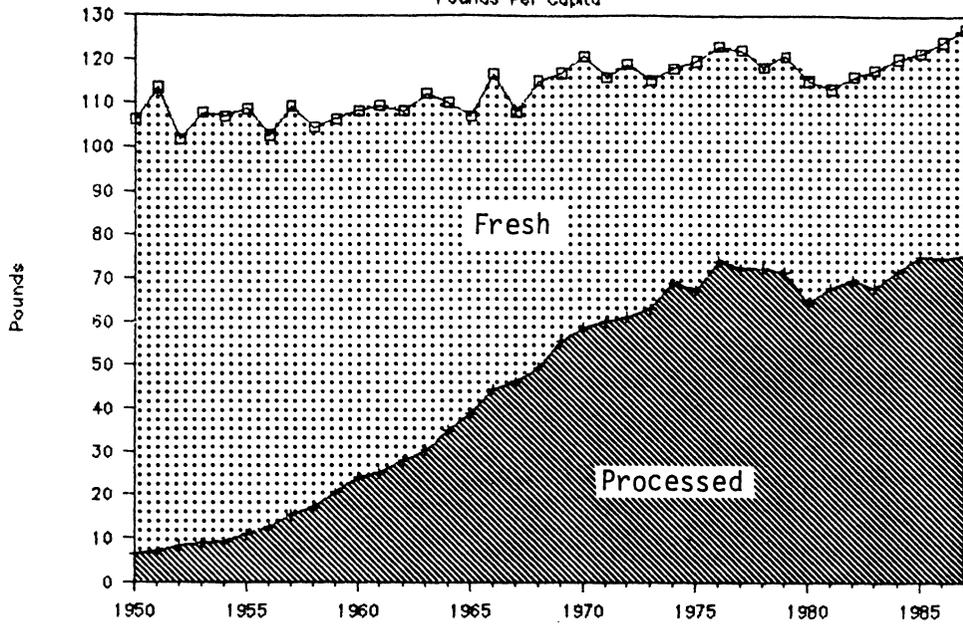


Figure 1

CONSUMPTION OF PROCESSED POTATOES

Pounds Per Capita

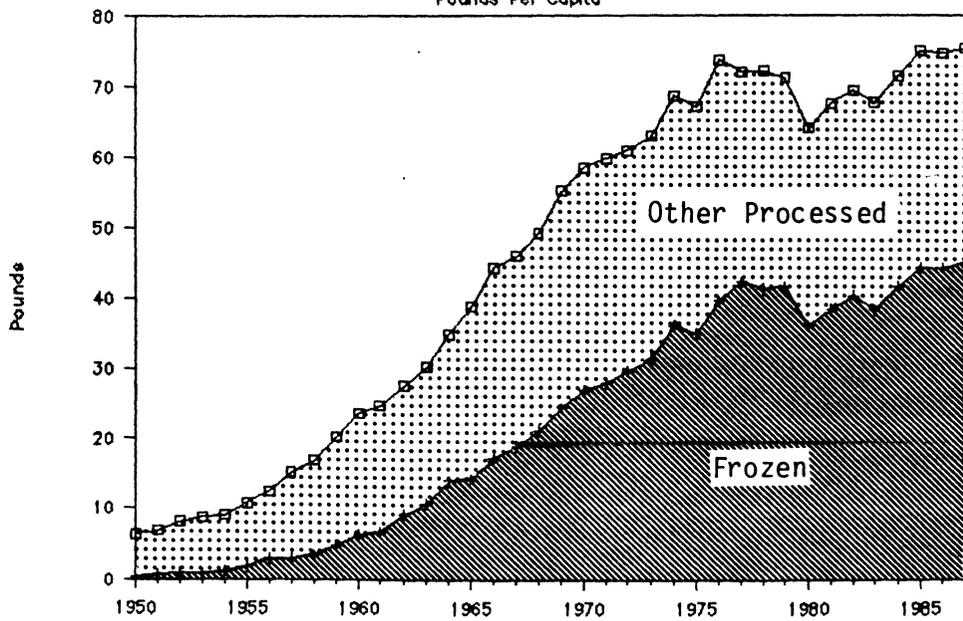


Figure 2

changes resulted primarily from the aforementioned socioeconomic factors. While all of the described socioeconomic factors contributed to increased consumption of processed potato products, growth of the fast-food industry provided the most change.

A growing demand for frozen potatoes led naturally to an expansion of potato production in Idaho, Oregon and Washington. These states have a comparative advantage in producing the elongated Russet Burbank potato that is preferred for frozen french fries. Average yields per acre in these states are more than 5 tons higher than in Ohio and other Northeastern states. And since processing takes out most of the water and gives the product increased value, transportation costs per unit of product are lowered to competitive levels so as to make distribution possible on a national and international scale.

The total U.S. farm value of potatoes in 1987 is estimated to be in excess of \$2 billion. Ohio's production at the farm level amounts to roughly \$10 million. These relative dollar values suggest that Ohio is a minor potato producer, accounting for less than one percent of total potato production. Still, the state ranks 18th in potato production, producing 112.7 thousand tons in 1987. Roughly 50 percent of Ohio's production goes to fresh consumption while the remaining half is used for processed potato chips. Potatoes used for processing are shipped throughout the Eastern U.S.

Economic Consequences

Declining fresh potato consumption resulted in a drastic decrease in the number of potato farms. Fewer than 25,000 potato farms exist today as compared to 686,000 in 1960, a decline of 96 percent. This rate of decline is three times that of all U.S. farms. Many of these farms were simply unable to sustain the high year-to-year variability in price and income. Indeed potatoes

have more year-to-year variability in price (percentage terms) than any other farm commodity. Fewer potato farms are also due to the natural forces of supply and demand and limited marketing outlets. For example, as technological innovations and new marketing techniques made processing of potato chips too costly in small plants and therefore led to the ultimate closing of these plants, potato farms supplying these plants were frequently left with no alternative marketing outlets. Even though some of the product brands and plants of smaller firms were purchased and kept open by larger chipping firms, smaller producers still lost their marketing outlets because larger firms instituted product acquisition of raw potatoes through forward-price contracts with larger producers. More than 240 potato chip plants closed between 1960 and 1987, primarily because accepted marketing practices of by-passing wholesalers and delivering chips directly to retail stores were not cost effective for smaller chip firms. The number of potato farms and chip plants in Ohio also declined as a result of this industry reorganization.

Ohio and other Eastern producers of potatoes for fresh marketing not only faced declining per capita consumption but also increased competition in the fresh market from Russet Burbank and other russet potatoes. As consumers were introduced to russets as 'bakers' in fast-food and other food establishments, a preference for this potato also developed for in-home consumption as a convenience food. Pacific Northwestern producers supplied this market by sorting their potatoes and shipping the larger and most appealing ones to fresh markets at a premium. Smaller and less appealing potatoes were used for dehydrated and some frozen products with limited size and grade requirements. While this sorting process is good economics for producers in close proximity to dehydrated and frozen plants, it hurts Ohio producers who have no frozen and dehydrated plants in the state. Similar grading procedures would yield

potatoes with no marketing outlets. Yet a failure to use stringent grading results in low prices and limited marketing alternatives. Even today, some Ohio producers are faced with dwindling markets because of their reluctance to use stringent grading standards.

As producers observed their dwindling markets for fresh potatoes, they implemented a commodity check-off fee in 1971 to promote increased consumption of fresh and processed potatoes. Producers initially assessed themselves \$.01 per hundredweight, but increased the fee in 1986 to \$.02 per hundredweight. While the evidence on the effectiveness of potato promotion is still being debated, there is evidence to suggest that the image of potatoes as "fattening and filling, with little or no dietary nutrients" is changing. Since potato promotion began, studies by the National Potato Board have shown that the percentage of consumers who feel the potato has little nutritional value has fallen from 70 percent to 33 percent. Consumers who feel the potato is fattening have declined from 50 percent to 25 percent. These factors are believed to have either reversed or slowed declining consumption of fresh potatoes. Moreover, it is believed that such attitude changes are necessary to increase consumption.

Looking To The Future

The major thrust of change, growth of the fast food industry, that propelled the U.S. potato industry forward for the past three decades has lost much of its impetus. Recognizing this fact, the potato industry is now looking to the fast-food industry in Pacific Rim countries to revive its growth. With the aid of Targeted Export Assistance (TEA), the industry has achieved dramatic increases in sales of frozen potatoes. Sale increases of 28.5 percent were achieved in the Pacific Rim for 1986, though individual countries had more

impressive gains (Figure 1). The TEA funds to the potato industry amounted to \$2 million in 1986 and \$2.4 million in 1987. As part of the 1987 grant, Indonesia was added as a targeted country.

Figure 1. DRAMATIC SALES INCREASES IN PACIFIC RIM

Sales of U.S. Fries for 1986 vs. 1985

	Percentage Increase	1986 Sales in Metric Tons
Japan	+28 %	62,391 metric tons
Singapore	+20 %	3,162 metric tons
Malaysia	+10 %	1,119 metric tons
Hong Kong	+32 %	5,266 metric tons
Taiwan	+624 % //	543 metric tons

Frozen potato sales in the Pacific Rim countries increased 32 percent in 1987, even more dramatic growth than for 1986. Growth was especially pronounced in Japan, though sales figures for individual countries are still not available. While this export market provides growth opportunities for the U.S. potato industry, it is important to recognize that it now accounts for less than 4 percent of the U.S. annual production of 4.9 billion pounds of frozen potatoes. Still, the U.S. potato industry is looking to this market to provide growth and expansion comparable to that provided by the U.S. fast-food industry. An added factor is the growing imports of fresh potatoes. Much of the U.S. import demand is supplied by Canada and it is due in part to Canada's uniform grading and sizing of consumer packs. Between 1986 and 1987, Canadian shipments of fresh potatoes to the U.S. increased 68 percent, from a dollar

value of \$14.8 million to \$22.2 million. In other words, potato imports from Canada are more than twice Ohio's production. By contrast, the U.S. increased its exports of fresh potatoes during this period by 23 percent, from a dollar value of \$4.5 million to \$4.9 million. Despite this imbalance between imports and exports of fresh potatoes, net potato exports in 1987 amounted to almost 1 percent of potato production. Net changes, of course, are what determine prices and income to producers.

Expanding exports is just one of several marketing alternatives the potato industry is using to try and boost potato prices and producers' income. Research and promotion of fresh potatoes is continuing and expanding. Recent consumption figures show rising fresh consumption, though the time trend is too short to be meaningful because short-run consumption of perishable commodities reflects production. The industry is also attempting to increase consumption of 'bakers' at fast-food establishments. Single women are the targeted population because of their limited preference for frozen potatoes. Frozen potato processors are developing new products and marketing alternatives for expanding retail and away-from-home potato consumption. Since only 60 percent of American households purchase frozen potatoes at the retail level, new marketing strategies are being targeted to non-purchasing households. Ohio potato producers are also using new marketing strategies. New potato varieties that yield more chips per pound of raw potato and higher proportions of grade A's per acre are being substituted for existing varieties.

Although Ohio producers are receiving increased competition from russet potatoes, the effects of this competition are diminished somewhat by the comparable nutritional value of Ohio's round white potatoes and russets. However, Ohio producers and other Eastern producers faced with increased competition in fresh potato marketing are experimenting with several varieties

of russet potatoes for fresh marketing and frozen potatoes. Ohio producers recognize that the long-term viability of their industry is dependent upon expanding existing markets and developing new markets with new varieties of potatoes. New varieties of potatoes offer tremendous marketing advantages because wholesale potato buyers have a preference for mixed truck loads. Producers who can meet these demands not only sell more potatoes but also receive a premium price. Ohio producers are working with researchers to develop new varieties for chips, frozen potato processing, and fresh marketing. Producers and other potato marketing specialists are also working with the potato processing industry to bring frozen potato processors to the state. At the same time, Ohio producers are improving grades of fresh potatoes and attempting to expand their market share. The overall marketing strategy for Ohio producers is to provide greater variety and higher quality potatoes.