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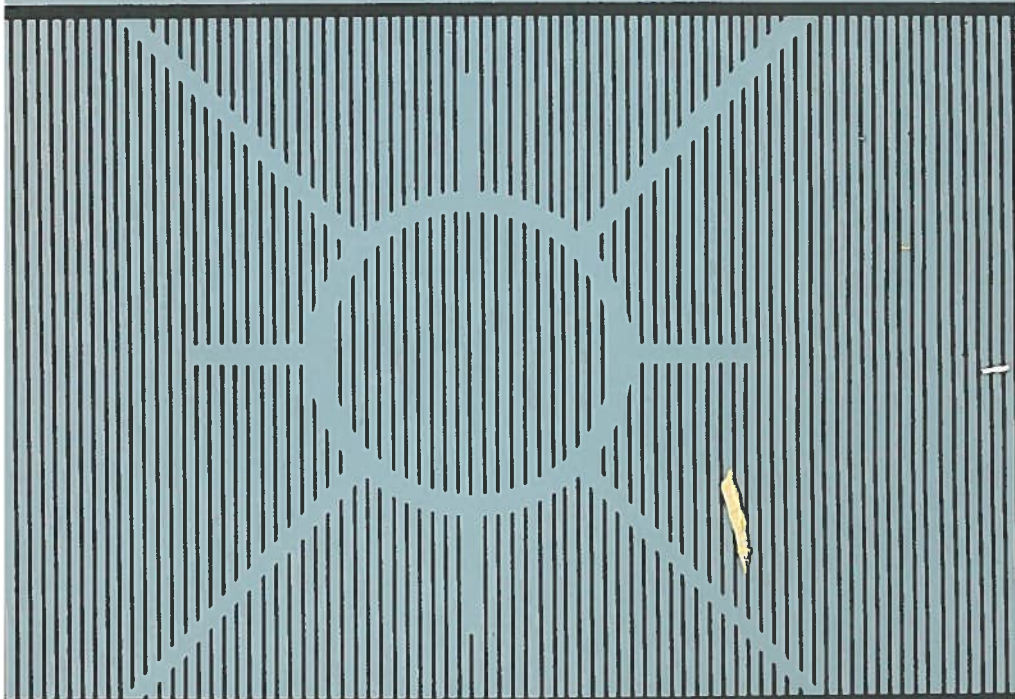
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THE TART CHERRY SUBSECTOR OF U.S. AGRICULTURE: A REVIEW OF ORGANIZATION AND PERFORMANCE



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Chapter 1

AN OVERVIEW OF TART CHERRY PRODUCTION AND UTILIZATION

INTRODUCTION

The value of analyzing the tart cherry marketing system stems not from its absolute size, which is dwarfed by many other agricultural commodity subsectors, but from the fact that in many respects it represents a microcosmic case study of the current U.S. food system. Therefore, the tart cherry sector can be used to identify and explain some of the dynamic forces causing evolution in the organization, behavior, and performance of a number of vertical food subsectors in the United States. This paper highlights the effects of some of these evolutionary forces.

The first two chapters contain a discussion of the overall nature of the tart cherry subsector. In Chapter 3, the reasons for tart cherry supply instability are documented and explained. Description and analysis of the structure, conduct and performance of the subsector are in Chapters 4, 5 and 6. Chapter 7 includes some analysis of the tart cherry federal marketing order program. Some of the most significant organizational changes occurring in the subsector are highlighted in Chapter 8. The final chapter is a summary and overview.

Wide annual supply fluctuations are in many ways a pivotal aspect of the tart cherry subsector because the supply fluctuations affect the subsector's behavior and performance in so many different respects. Supply instability creates high risks regarding product availability and price change for all subsector participants. Consequently, subsector supply fluctuations and risks are the driving forces, either explicitly or implicitly, behind many aspects of system structure, conduct, and performance. Because of these overriding forces, the content at times may seem redundant. The authors believe that some repetition is necessary in view of the all-pervasive nature of these risks and fluctuation features.

NATIONAL PRODUCTION SITUATION

Tart cherries are a perennial tree fruit. This fact along with the effects of variable weather conditions impact in a number of important ways on the marketing system, behavior and problems of cherry marketing.

Almost all tart cherry production is sold for processing. The processed tart cherries are used primarily as an ingredient in certain manufactured food products such as pies. This feature also leads to a number of special marketing patterns and to particular challenges.

Most U.S. tart cherry production occurs in the Great Lakes states in Michigan, New York, Wisconsin, and Pennsylvania (Figure 1). These states together usually produce 90-95% of the U.S. tart cherry crop. Michigan is by far the largest producing state, with usually about 70-75% of the total U.S. crop. The western states of Utah, Oregon, Colorado, Washington, Idaho and Montana produce about 5-10% of the national total. Utah leads the western states, producing an average 4% of the national crop.

Annual U.S. tart cherry production ranges from 140 to 310 million pounds. Wide annual fluctuations characterize cherry production and market supplies (Figure 2). As mentioned previously, this phenomenon has important influences on many aspects of cherry marketing. And while cherry production has not shown a distinct long-term production pattern during the past 30 years, there has been a gradual downward trend in average production since the mid-1960s.

Figure 1. Great Lakes Tart Cherry Production Areas

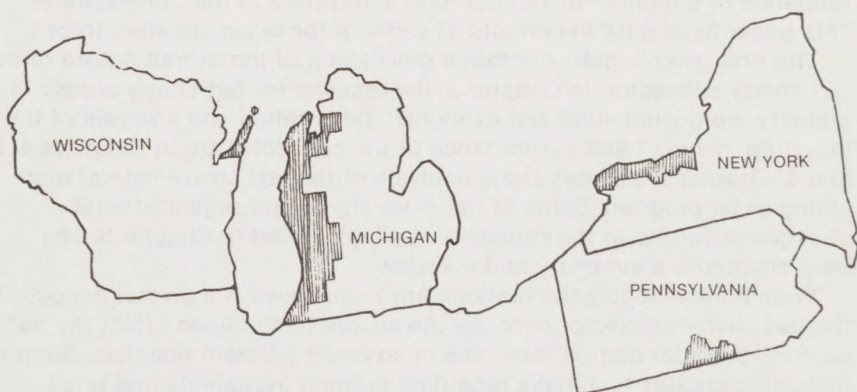
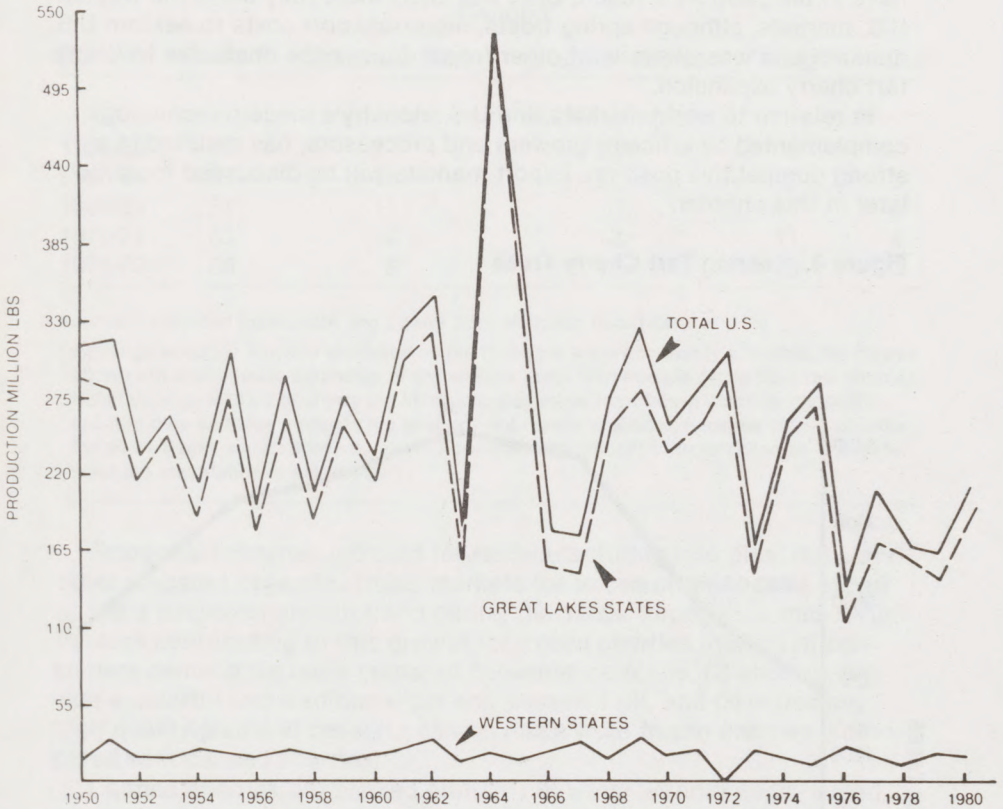


Figure 2. Tart Cherry Production



Changes in tree numbers suggest future production trends. Michigan's tree numbers have been relatively stable although declining somewhat from the mid-1960s. Michigan has been increasing its percentage of the national tart cherry production. Tree numbers in Wisconsin, New York, and Pennsylvania declined for a number of years (Figure 3), but non-bearing trees have increased somewhat in the last few years. Utah's production, although historically small, has recently shown significant growth through acreage expansion. Based upon analysis of tree number data and age distribution, future production can be expected to expand in New York, Utah and Michigan.

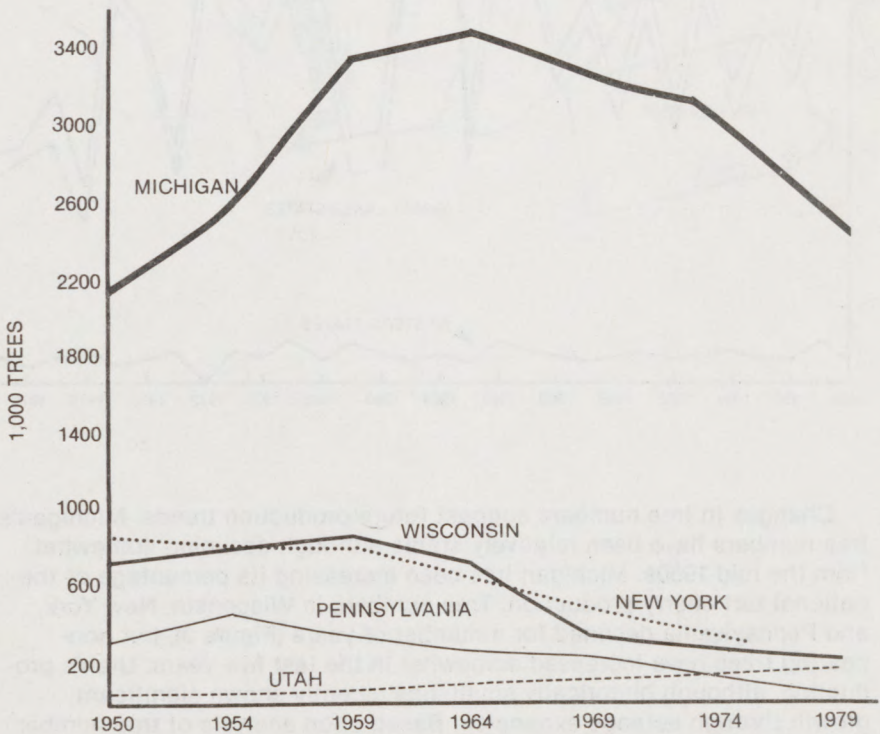
Michigan appears to have enjoyed somewhat of an historical comparative advantage over other areas of the United States. Climate and soils are favorable in Michigan. Compared to western states, Michigan also realizes transportation cost advantages in supplying eastern U.S.

markets. Producing and processing a desirable product mix of several frozen fruits for pies and desserts augment Michigan's comparative advantage.

Utah's production position is growing and will likely continue to do so in the future. Utah now has a sufficiently large volume of tart cherries to perhaps encourage buyers to rely on Utah more in the future than they have in the past. As a result, Utah will likely more fully serve the western U.S. markets, although spring frosts, high transport costs to eastern U.S. markets and less diversity of other frozen fruits pose obstacles to Utah's tart cherry expansion.

In relation to world markets, the U.S. industry's modern technology, complemented by efficient growers and processors, has resulted in a strong competitive position. Export markets will be discussed more fully later in this chapter.

Figure 3. Bearing Tart Cherry Trees



MAJOR TART CHERRY USES

Tart cherries are initially processed into four basic forms — frozen, canned, pie filling and juice. A noticeable trend has been for more cherries to be frozen than canned (Table 1).

Table 1. Utilization Trends of U.S. Tart Cherry Crop

| Period | Frozen | Canned | | Pie Filling* | Juice |
|---------------------|--------|---------------|--------------------|--------------|-------|
| | | Consumer Size | Institutional Size | | |
| ----- Percent ----- | | | | | |
| 1955-59 | 46 | 27 | 23 | 5 | - |
| 1960-64 | 54 | 15 | 22 | 7 | 1 |
| 1965-69 | 57 | 11 | 16 | 11 | 6 |
| 1970-74 | 63 | 8 | 12 | 11 | 4 |
| 1975-79 | 66 | 6 | 11 | 15 | 3 |

Source: Calculated from USDA and Cherry Administrative Board data.

* Although accurate industry statistics on pie filling pack are not readily available, the figures shown are approximate estimates of the amount processed into pie filling from raw cherries. Substantial quantities of cherry pie filling are also made from frozen cherries, although specific data on these amounts are similarly not readily available. Because of this situation, the percentages shown above somewhat overstate the amount of frozen cherries and understate the importance of pie filling.

Frozen tart cherries are sold for remanufacturing into pies, tarts, and other prepared desserts. These markets for frozen cherries have experienced a long-term growth trend during the 1950s through the mid-1970s. Factors contributing to this growth for frozen cherries include (1) consumers demand for more prepared convenience foods, (2) cherries provide a colorful and traditional pie and dessert fruit, and (3) especially high quality pies and desserts can be made from frozen cherries (compared with canned cherries).

Canned cherries are packed primarily in water without sugar added, for both retail pack (No. 303 cans with approximately 16 oz.) and for institutional markets (No. 10 cans with approximately 103 oz.). Both canned cherry markets have experienced long-term declining trends. Consumer preference trends have shown a definite long-term switch from retail canned cherries to the more convenient and attractive cherry pie filling, ready-made pies, and other prepared desserts. Food service markets have substantially switched to frozen cherries or to ready-made pies manufactured by specialized pie firms. In part, as a result of these changes, the market for No. 10 canned cherries is now related in an important way to the export market.

Since tart cherries are used mainly for pies, other pie fruits such as apples, blueberries, peaches, and strawberries are important competing commodities. In eastern U.S. markets, apples and blueberries are especially important substitute fruits for tart cherries. In western U.S. markets, peaches, apricots, and other berries compete more strongly. Cream pies, pumpkin pies, and other nonfruit pies substitute for tart

cherries in the pie markets, but somewhat less strongly than do competing fruit pies.

The presence of close substitutes has an important influence on tart cherry marketing and the cherry industry. Nevertheless, the tart cherry's red color and the traditional use of cherry pie by many consumers have helped cherries maintain a consistent position as the second most important pie fruit in the country (apples are first).

Domestic U.S. markets consume about 92-95% of total tart cherry production and are by far the most important for the tart cherry industry. Export markets have amounted to approximately 5-8% of the total processed cherry sales and seem to have potential for growth.

IMPORTANCE OF EXPORT MARKETS

Although comprising a small percent of total sales, export markets are increasingly important, and it appears they may grow even more in the future. In Western Europe the most important markets for tart cherries are West Germany, Great Britain, and Belgium. While West Germany has the highest sour cherry production, its large population, strong economy, and preference for sour cherries also makes it the largest importer and the country with the greatest potential for future market growth. Great Britain, on the other hand, imports all of its sour cherries, and although the volume is substantially smaller than that imported by West Germany, the British market remains important in the total cherry export picture. Belgium both produces and imports significant quantities of sour cherries, re-exporting some to other European countries such as West Germany after additional processing into products such as cherry jam.

Competition for the U.S. in European export markets comes primarily from the Eastern European countries. Yugoslavia, the largest competitor, exports substantially more sour cherries than the U.S., and Yugoslavia's production is increasing. However, a number of factors favor the U.S. relative to Yugoslavia, including: (1) generally better quality of cherries, (2) more advanced mechanical harvesting, (3) higher average yields per acre, (4) greater use of a total package of modern technologies, (5) more efficient growers and processors, and (6) a market preference for U.S. Montmorency type cherries in certain western European markets. To date the U.S. has a superior average record of supplying quality cherries than does Yugoslavia, although this advantage will probably diminish in the future as the Yugoslavians improve their quality [10].

Export markets for tart cherries, especially in western Europe, appear to offer further expansion potential for the U.S. cherry industry. The U.S. competitive position versus other supplying countries seems basically sound, but not overwhelmingly superior. Exploiting the potential for expanded tart cherry exports will not occur automatically, but will depend upon the actions of the U.S. cherry industry [9, 14].