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Alaska's Dairy Industry: The Relationship Of History and Statistics

Carol E. Lewis
Associate Professor, Resource Management, University of Alaska Fairbanks

Roger W. Pearson
Associate Professor and Head, Geography, University of Alaska Fairbanks

INTRODUCTION

The Alaska Crop and Livestock Reporting Service of the United States Department of Agriculture has provided an annual publication detailing the quantity and value of agricultural products in Alaska since 1960. Although the statistics are an excellent source of information, they do not provide a historical insight into events which might have effected rises and falls in product quantities and values. To quote:

> *What statistics cannot always show us is why such trends have occurred (and) what factors have influenced their progress. These are a matter of interpretation. (Weaver, Alaska Crop and Livestock Reporting Service 1987a).*

Indeed, one of the challenges of agricultural statistical interpretation is to reflect economic, political, and social events locally, nationally, and internationally.

APPLICATION OF AGRICULTURAL STATISTICS

The Agricultural and Forestry Experiment Station and the Department of Geography are cooperating to compile annual agricultural statistics from 1960 to the present for presentation in a graphic format. The graphic format lends itself to interpretation. The parameters of concern are value of production at the farm level, volume of production, and acres utilized. The data are being classified by region and product. Historical literature concerning political and economic conditions statewide for the same period is being collected and reviewed with particular attention to national and worldwide events.

The purpose of this effort is twofold. The first is to develop an understanding of the driving forces behind agricultural production. The second is to determine what product or group of products have played a dominating role. Several product sectors can be singled out as examples of the research program. One of these is the dairy industry.

AN EXAMPLE: THE DAIRY INDUSTRY

Alaska is a frontier. Frontiers take time to develop mature agricultural landscapes and economies (Abelson and Rowe 1987). The agricultural sector of the midwest developed from its beginnings over time, and several approaches were attempted (Spencer and Horvath 1963). The development of the dairy industry in Alaska has followed a similar pattern. Farming for personal consumption dominated the early years but was largely abandoned when sufficient acreage was developed to attempt more extensive enterprises (Johnson and Irwin 1952). A core of agricultural production began in the Matanuska Valley with the construction of the Alaska

Railroad. A creamery constructed in 1927 was operated through 1932 by the Alaska Railroad. It produced a variety of products. The facility and a distribution system for its products helped promote the increase in number and size of dairy farms (Report of the Territorial Governor of Alaska 1940).

Today, the dairy industry is a dominating factor in Alaska's agricultural sector. The receipts from the industry at the farm gate represent 21 percent of all farm receipts in Alaska.* The farm gate value of milk production in 1986 was $6.1 million of a total of $28.8 million for all agricultural production. This represents 3.95 million gallons of milk, or approximately 7.5 gallons per person based on 520,000 state residents. The greatest milk production comes from Matanuska Valley and Pt. MacKenzie. The latter area emerged in the early 1980s and is supported through state loan programs and land sales (Thomas et al. 1983). The only other commercial milk production in Alaska is in the Tanana Valley (fig.1).

Historical and Statistical Relationships of Milk to Other Products

The Matanuska and Tanana valleys make the largest contribution to agricultural production in Alaska. The Matanuska Valley produces primarily milk; potatoes; hay; and the vegetable crops lettuce, carrots, and cabbage. The main products in the Tanana Valley are barley, beef cattle, and hogs. The Kenai Peninsula makes up almost all the rest, with its highest contribution in livestock (Lewis et al. 1987). Other commodities such as eggs, poultry, lamb, and wool have been, and still are, produced in the state. Production for sale through retail outlets for these products, except eggs, has been discontinuous as they have come from only one or two suppliers.

The products chosen for comparison to milk in this study are those which have been consistently available statewide to the final consumer through customary outlets such as grocery stores, custom slaughter facilities, and military and state institutional markets (potatoes, pork, beef, vegetables, eggs). Hay and barley were excluded because a large portion of the market is the secondary consumer such as the owner of livestock raised for sale as meat animals.

Milk production declined from 1964 through 1980 (fig. 2). This was not due to a drop in production per cow. There was actually an increase in production from cows in herds registered with the Dairy Herd Improvement Association (DHIA) (Lewis et al. 1980). The decline in milk production was caused by a decline in numbers of dairy cattle (fig. 3) due in part to increasing urban pressure from the Anchorage area. As land values rose in the Matanuska Valley, older farm families subdivided and sold their farms (Beasley and Workman 1986). Additionally, there were few younger families interested in maintaining family farms or entering the industry as new dairy farmers. The inception of Production from new dairy farms located in the Pt. MacKenzie Agricultural Project began in 1983 and caused a dramatic increase in the milk production in Alaska in 1984 (Lewis et al. 1980). The trend was still increasing in 1986. With this increase, Matanuska Maid Cooperative, the fluid milk processor in the Anchorage area, is approaching its capacity based on an 8-hour operating day. Local milk, now has about 38 percent of the road and railbelt (primarily Fairbanks and Anchorage) market share, the highest reached during the study period.

The value of total farm production in Alaska began to increase in the early 1970s. This was a reflection of increases in personal income to state residents as construction of the trans-Alaska pipeline began and the desire of some to invest in a nonextractive, local industry (Lewis and Thomas 1981). The period from 1978 through 1984 saw a sharp increase in the combined value of beef, pork, eggs, potatoes, and all vegetables. Overall, this increase was due to a general increase in the promotion of agriculture in Alaska by the state, initiated with the sale of land in the Delta Agricultural Project (Thomas and Lewis 1980). This was the only period during which the value of milk production was below the combined value of the other products (fig. 4). After 1980, an increase in prices paid by Matanuska Maid Cooperative to dairy farmers caused an increase in the value of milk even though quantities increased only slightly. Increases in value of milk after 1984 correspond to increases in quantity despite a decline in the price paid to dairy farmers.

The production of milk in Alaska has a multiplier effect on the dollars generated within the state. The multiplier for the dairy industry in Alaska is 1.83 times the value paid to farmers at the farm gate (Weddleton 1986). Thus, for every dollar paid to the dairy farmer, $1.83 is returned to the state's economy. This means that the $6.1 million paid to farmers in 1986 was worth $11.2 million in the state. This may be a conservative estimate because the multiplier does not include an induced effect on secondary industries such as restaurants and retail stores.

There are indirect as well as direct implications of milk production in the state. Dairy calves produced in Alaska are now an important segment of the feeder calf supply. The Alaska dairy industry provides jobs and opportunities for which there are no substitutes. Jobs are available not only in the dairy industry itself but also in associated industries including, but not limited to, slaughter facilities and the beef industry. Finally, consumers receive a product with a longer shelf life than that from out of state.

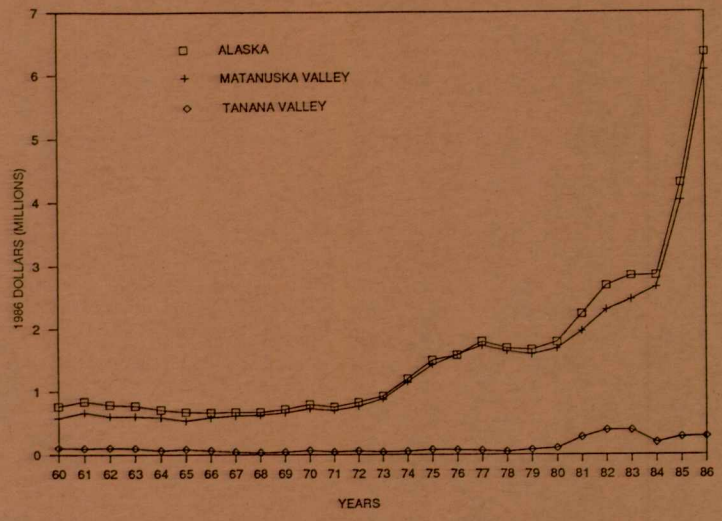

Figure 1. The value of milk production in Alaska, the Matanuska Valley, and the Tanana Valley. (Values adjusted to 1986 dollars using the Alaska Consumer Price Index as a base.)

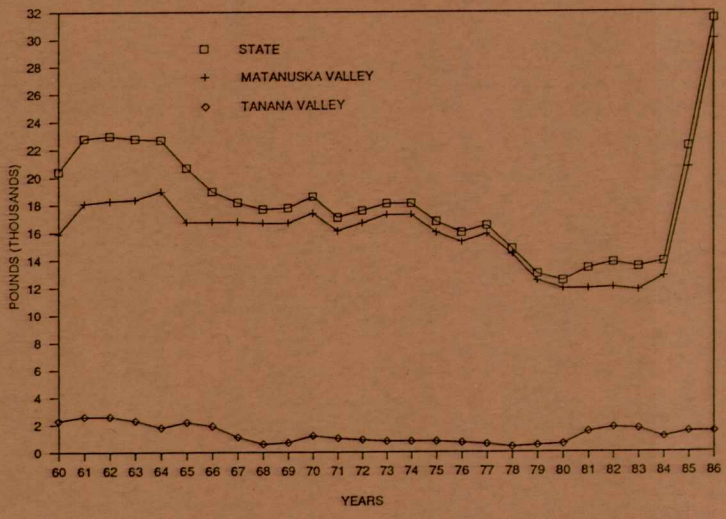

Figure 2. The quantity of milk produced in Alaska, the Matanuska Valley, and Tanana Valley.

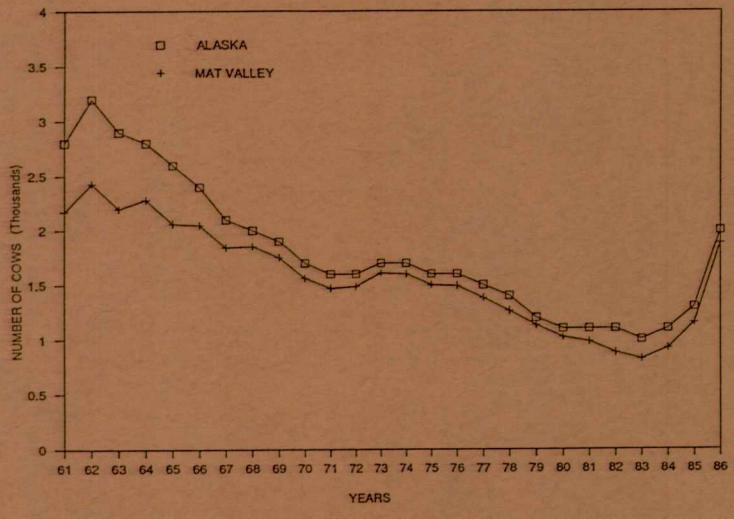

Figure 3. Number of milk cows in Alaska and the Matanuska Valley. Before 1970, data show milk cows that have calved after they are two-years old. After 1970, data show cows that have calved after they are one-year old.

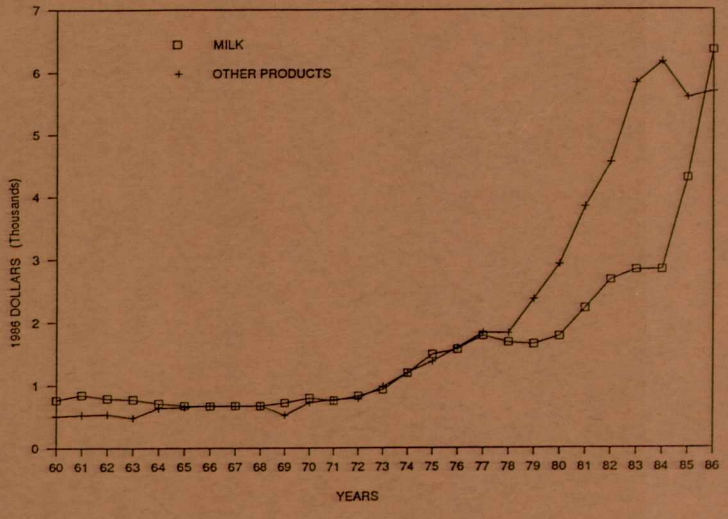

Figure 4. Milk production value compared to the value of potatoes, eggs, beef, pork, and all vegetables produced in Alaska. (Values adjusted to 1986 dollars using the Alaska Consumer Price Index as a base.)

COMMENTS

Analysis of Alaska agricultural data since statehood reveals the dominance of the dairy industry in Alaska. During the late 1970s, there was a renewed effort toward development of an agricultural strategy for Alaska. An emphasis was placed on development of agricultural projects oriented toward production of specific commodities (Thomas et al. 1983). A part of this strategy was the promotion of milk production at Pt. MacKenzie. The dairy industry was successful because the infrastructure for movement and processing of milk was almost entirely in place when implementation began. A well-developed infrastructure has never been in place for statewide marketing of other products; such as beef and pork (Englebrecht and Thomas 1987). A limited infrastructure is available for vegetables, but only for their sale as a fresh product. Thus an apparent key to successful implementation of a development strategy for most commodities is the availability of a system through which quality products can enter the market (Lewis et al. 1987). In general, this system will only exist if the industry is already fairly well developed as evidenced by quantity and value of production.

*Farm receipts exclude from the horticulture industry (bedding plants, cut and potted flowers, ornamentals, trees, shrubs, and greenhouse vegetables) which totaled $13.3 million in 1986 (Alaska Agricultural Statistics 1987b).

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