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A Description of the Policies and Procedures of Retail Feed Dealers in Utah, 1958

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A DESCRIPTION OF THE POLICIES AND PROCEDURES OF RETAIL FEED DEALERS IN UTAH, 1958

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INTRODUCTION

The retail feed industry has grown continually in importance during the past 60 years. Increased population has placed ever greater demands upon food production to feed our nation's people. During 1958, the average American consumed 80 pounds of beef, 63 pounds of pork, 8 pounds of veal, 4 pounds of lamb, 26 pounds of chicken, and 11 pounds of lard (6, p. 4). This amounted to an annual per capita consumption of 188 pounds of red meat. With 173 million people to feed, vast quantities of livestock must be produced, finished, and marketed to satisfy our nation's needs.

Large quantities of feed and feed ingredients must be produced to meet the feed requirements of the livestock and poultry industries. Feed producers are not always livestock feeders. Also, feed production is not limited to one section of the country. Therefore, it becomes necessary for the functions of marketing to coordinate movement and supply of the various feeds and ingredients between producers of the feeds and users. The retail feed industry provides a vital service in supplying the needed feed requirements to sustain our poultry and animal production.

Background and development of the retail feed industry in the United States

The commercial feed industry has been in existence in the United States for a little more than 100 years. One of the first men to combine grain by-product ingredients into a commercial feed was

Ferdinand Schumacker, an oat miller in Akron, Ohio. His mill was established in 1856 and his feed carried the brand name of "COB Feeds" (13, p. 37). This feed consisted of the by-products of milling corn, oats, and barley. Schumacker made no attempt to produce a balanced feed. He was interested only in disposing of the by-products from his milled grains, etc. were disposed of as worthless by-products of the milling process.

In 1895, manufacturing commercial feeds on a larger-volume basis began. Among the first companies to concentrate on marketing prepared feeds were the Great Western Cereal Company, The American Cereal Company, and The Cleveland Linseed Oil Company. The first two later became part of the Quaker Oats Company. This company in turn became the first company to manufacture and distribute commercial feeds on a nation-wide basis. About the same time, a St. Louis firm, the Robinson-Danforth Commission Company, began to manufacture horse and mule feeds from crushed grains. This firm later became the Purina Mills Company.

After the turn of the century, the demand for manufactured feeds increased. Prior to this time, the feed industry consisted largely of exchanging hay, whole grains, and milling by-products. Little or no importance was placed upon nutritional values, balanced rations, or scientific feeding. In many cases, hogs were a means of disposing of household garbage. With a little grain and enough time, they would fatten. The poultry industry consisted mainly of small, backyard chicken flocks. They were good scavengers and a few occasional handsful of grain seemed to satisfy their needs. Hay and a few oats kept the horses and mules well fed. Grass from the mountains and plains provided grazing feed for cattle and sheep herds.

The basic foundation for the development of the feed industry was laid by the early research workers in the area of animal nutrition. They demonstrated the value of protein supplements, minerals, etc. and showed the positive results of balanced rations. This work began to develop around 1900. Most experimental work was performed with dairy feeds. Because dairy animals were less hardy than other breeds of livestock, it was felt that the diet of these animals was more important. As early as 1901, dried beet pulp appeared as "the feed sensation among dairymen (13, p. 38). Other dairy feeds were also advertised. One particular calf feed was offered as "the perfect milk substitute for raising calves" (13, p. 38). A few commercial hog feeds were also introduced as early as 1910. However, it was not until 1915 to 1920 that such feeds gained much acceptance among producers. During the 1920's, pig meals, all-purpose feeds, brood sow conditioners, and fattening rations were used in greater amounts.

With increased demand for commercial rations and mixtures, the feed industry became more important. It was estimated in 1935 that approximately 12 to 15 million tons of ready-mixed feeds were manufactured. During the war years of 1942-1946, great emphasis was placed on livestock production. The demand for commercial feeds greatly increased and the feed industry became more important in providing large quantities of mixed feeds. Estimates indicate that approximately 36 million tons of feed were consumed by livestock and poultry during the 1943-44 production year. This amount approximately doubled the tonnage consumed during any single year between 1935 and 1940 (3, p. 5).

Growth of the industry has been rapid since 1939. Value of shipments of manufactured feed increased 416 percent between 1939 and

1954 (table 1). Data show two developments during the 1939-54 period: (a) the number of establishments doubled between 1939 and 1947 and then decreased from 1947 to 1954. (b) Establishments decreased and employees increased which indicates that average plant volume increased during the 1947-1954 period.

Table 1. Prepared animal feeds industry: establishments, employees, and value of feed shipments, United States, 1958

Year	Establishments	Employees	Value of shipments (000)
1927	447	11,378	299,793
1935	942	15,427	288,662
1939	1,383	24,177	401,880
1947	2,688	55,152	2,112,241
1954	2,292	59,890	2,702,267

Source: Census of Manufacturing, Bulletin MC-20D, Grain Mill Products

While the number of establishments decreased, tonnage output increased 63 percent (from 25 to 40 million tons) during the 1948-1958 period (table 2). The year 1958 was a record production year, with an estimated 40 million tons of feed manufactured. During this time, many new feeds and feed ingredients were introduced. Improved milk replacers and calf feeds, greatly improved poultry feeds, and the use of medications and antibiotics were part of the newer feeds being offered. In addition bulk handling of feeds on larger volume scale and pelleted feed handling of complete rations (particularly in poultry feeds) were among the new technologies introduced.

Table 2. Estimated annual production of United States feed manufacturing industry, 1948-1958

Year	Tons of feed (millions)	Year	Tons of feed (millions)
1948	25.5	1954	35.0
1949	28.5	1955	33.6
1950	29.1	1956	35.7
1951	32.8	1957	36.0
1952	34.4	1958	40.0
1953	33.7		

Source: Marketing Research Dept. American Feed Manufacturing Ass'n., Table 106, February, 1959

Development of the retail feed industry in Utah

Information regarding the development of the retail feed industry in Utah is lacking. Very little data has been recorded as to its status past or present. The industry developed historically with the expansion and settlement of the West. Mention is made of a flour miller selling wheat bran for feed in the Salt Lake Valley during the late 1850's (8, p. 182). However, the industry seemed rather slow in making its start in the State. With the limited methods of transportation and limited numbers of livestock, feed sales were confined mainly to an exchange of hay and whole grains between feed producers and users. Flour mills also sold their by-products as feed.

As the numbers of livestock increased, greater demands were created for commercially produced feeds. The retail feed industry expanded to meet these needs. In the more sparsely populated areas of the State, the country elevators usually provided the feed needs.

Local grocery and hardware stores, general mercantile shops, and flour mills were also sources of feed supplies.

The industry has evolved from a meager start to a large, highly competitive business. Sales include numerous scientifically devised feeds and ingredients. Drugs, hormones, medications, vitamin supplements, and many new advances in better feed ingredients and components have caused the feed industry expansion to include a very diversified inventory of feed stocks.

Regulation

As with many young industries, the retail feed industry had its problem and "growing pains." One of its major problems was feed control and quality regulation. Early manufacturers had little or no restrictions regarding kind or type of feed mixtures sold. As the demand for more specialized feeds increased, measuring standard quality feeds from all manufacturers became an important problem.

The first feed law was enacted by the state of New York in 1894 (13, p. 49). By 1915 at least half of the states had similar legislation. Today every state except Nevada has passed a feed control law. In most of the early feed laws, declaration of only the protein and fat content were required. The opportunity to use by-products of little or no feed value still existed. Later, laws and amendments prohibited the use of ingredients, such as rice hulls, peanut hulls, and other excessive fiber content materials.

Utah's feed law was enacted in 1919 (13, p. 50). The law defined the term "commercial feed stuffs" to include all feed ingredients used for livestock and poultry feeding except whole grain or seeds; unmixed meals made from the entire grains of wheat, rye, barley, oats,

buckwheat, flaxseed, kaffir and milo; whole hays, straws, cottonseed hulls and corn stover when unmixed with other materials.

In 1957, the Utah Legislature repealed the Feed Law of 1919 and its existing ammendments and enacted new control legislation. It provided for more clearity of terms and definitions used in the retail feed industry, and forced greater compliance to the stated regulations.

This complete revision of the Utah feed law was not necessarily a reflection of unscrupulous practices by the Utah retail feed industry. It was designed to provide a means of preventing any such practices, and was intended to protect the legitimate feed dealers and users of feed.

Interstate regulations

Commercial feed shipped in interstate commerce was subjected to Federal Controls with the enactment of the Food and Drug Act in 1906. Because of the variation in state feed laws, manufacturers found it difficult to engage in interstate business. With the organization of the Association of The American Feed Control Officials in 1909, steps were initiated to alleviate this problem. However, problems in simplification and unification in methods of registering and selling feeds were still numerous. The Federal Food, Drug, and Cosmetic Act of 1938 improved the situation by imposing further identification of the feed ingredients. The Wheeler-Lea Act of 1938 empowered the Federal Trade Commission with authority to check all advertising of feeds moving into interstate channels. However, compliance with interstate regulations is the responsibility of those shipping feed.

PURPOSE OF THE STUDY

Statement of the problem

Livestock producers and feeders, in many cases, do not produce their feed needs. Feed producers, in many cases, do not feed livestock. Therefore, one reason for the existance of the feed industry is to perform the necessary coordinating operations in providing a feed supply source to feeders. Utah is a deficit feed producing state and considerable quantities of feed and feed ingredients must be procured from out-of-state sources. Obtaining necessary quantities of feeds from surplus production areas in the midwest, south-west, and neighboring states is a function of the retail feed industry. Also, preparation of feeds, such as pelleting, rolling, grinding, mixing, etc. is a service provided for livestock feeders and producers. In most cases, cost of equipment and facilities make it prohibitive for feed users to justify necessary capital investment to provide means of preparing and processing their own feed.

During the past decade, technological changes in scientific feeding have rapidly taken place. Greater emphasis placed on improved feeds and ingredients, balanced rations, cost per pound of gain, and other input-output relationships have resulted in shifts toward methods of feeding which are more economical and efficient. Changes have taken place in methods of handling feeds, such as-- bulk handling, conveyor feeders, pelleted rations, and overhead elevator storage. Organizational changes have occurred through vertical and horizontal integration

in the livestock and poultry industries. Feed dealers who actively enter into such integrated operations, also become farm production advisors, and sources of credit facilities. Each of these functions have particular problems to be met.

Information pertaining to the industry is lacking. There is a need for informative data with regards to price making, production costs, procurement sources, existing processing facilities, custom services performed, etc. The industry has grown rapidly in the past, and many changes have taken place. In this dynamic industry, research which provides data to increase the knowledge of its needs will aid in making many of the adjustment problems facing Utah's retail feed industry. A description of the industry, its size, location, facilities, etc. as it now exists in the state is a starting point for research in this field. Such a study will provide basic data about the industry and furnish a basis for research into specific areas.

Objectives

This study was concerned with the operation and management of the retail feed industry in Utah. It was a descriptive survey designed to furnish a general situation-type analysis of the industry as it presently exists. The major objective was to ascertain the present procedures and policies in retail selling of feed grains through retail stores. This major objective was accomplished by investigating seven specific areas in the industry.

1. Determine types of ownership, location of establishments and sales volume of feed.

2. Present retail feed prices.

3. Present the types and charges for custom services offered.

4. Investigate equipment and facility capacities and the extent of use.

5. Present major sources of grain and ingredient procurement.

6. Determine sales volume of owner and contract feeding engaged in by feed dealers.

REVIEW OF LITERATURE

Manuscripts have been published on various feed studies in New Hampshire, Wisconsin, West Virginia, Nevada, New Mexico and Montana. Until the present, no attempts have been made to provide a description of the policies and procedures of the retail feed industry in Utah.

A study by Nybroten and Kesecker (9) in 1955 of approximately 400 feed businesses in West Virginia indicated that 96 percent of the mixed feed sold was shipped into the State. Gross margins per ton of feed sold ranged from 2 to 20 dollars per ton. No apparent relationship existed between margins and credit policies (margins were very nearly the same for cash and credit sales).

In 1955, Rogers and Woodworth (11) conducted a study of the characteristics of milling and distributing firms in New Hampshire. They found that less than two percent of the grain and mixed feeds used annually was home-grown. Therefore, efficiency of distribution was a major problem area. As farm units increase in size and decrease in number, larger quantities of feed can be sold to fewer customers. This results in increased efficiencies and economies of scale. The study also indicated that management decisions relative to adoption of technological improvements were frequently made on the basis of following competition rather than solely on the basis of costs and returns.

A second study conducted by Rogers and Woodworth (12) in 1955 showed that in New Hampshire, locational factors play an important role in maintaining sales volume and remaining competitive. This study also pointed out that recent changes to bulk feed pricing are indicative of a discount more closely reflecting actual savings rather than an "incentive discount."

In 1957, McClothlin (7) conducted a study considering the supply, utilization, and interstate movement of hay and feed grains in the eleven Western States. The study indicated that Utah was a deficit feed production area with an average net import shipment of 14,000 tons of feed grains during 1955.

In 1958, Gray (4) of New Mexico State University, studied hay and feed grain marketing in New Mexico. The study indicated that since 1942, sorghum grains have been of greater production importance in the state than all others combined. The gross margin for grain formula feeds ranged from 11 to 20 percent among dealers, with an average margin of 16.1 percent. The most common margin for whole grains ranged from 5 to 10 percent.

Retail feed distribution in Wisconsin was studied by Bakken et al. (1) in 1959. Dealers included in this study had a gross feed sales volume ranging from 20,000 to 1,600,000 with 25 percent of the dealers having a gross sales less than 100,000 dollars. Bakken pointed out that the feed dealers had no sound measures in determining costs of services rendered. He recommended that positive action be taken to determine such costs and to bring charges into line with these costs. This study also showed that business handled on credit ranged from 26 to 70 percent, with an average of 39 percent.

Phillips (10) of Iowa State College conducted a study in 1959 on the cost of procuring, manufacturing and distributing mixed feeds in the Midwest. This study was based on the cost of manufacturing and distributing 40,000 tons of poultry feeds. Costs were studied under four systems: (a) premix operations with mixing done by dealers, (b) concentrate operations with grain added by dealers, (c) centralized complete-feed operations through dealers without mixing facilities, and (d) independent manufacturer-retailer operation. The retail-manufacturer system resulted in slightly lower cost than the others studied. Costs were less affected by type of organization than by factors such as: shipping costs, variation in ingredient costs, volume of shipment, and bulk or sack purchases. Overhead costs were affected primarily by volume of feed manufactured, volume of feed merchandised, and size of activities in the business in addition to feed sales.

METHOD OF PROCEDURE

Data for this study were obtained from 114 retail feed dealers in Utah during the summer of 1959. A personal interview with 114 dealers was made with the use of a prepared questionaire. An attempt was made to contact 100 percent of the retail feed dealers in the State of Utah. A list of contacts was obtained by use of telephone directory listings and from personal inquiries of dealers as they were contacted. Dealers with an annual gross sales volume of feed less than $5000 were excluded from the analysis. Dealers selling less than this minimum amount handled feed only as a minor sideline to groceries, farm supplies, garden supplies, etc.

A preliminary analysis of the first data collected indicated a need for further inquiry in the area of owner and contract feeding. Consequently, a supplemental survey of dealers engaged in these operations was made by personal interview with the use of a prepared questionnaire during the summer of 1959. A total of 32 dealers were interviewed. However, nine of these dealers later were excluded from this phase of the analysis since their feeding operations involved merely the extension of normal credit.

ANALYSIS OF DATA

Location and size of dealerships

Results of the study showed that the 114 retail feed dealers included in the study consisted of 47 proprietorships, 18 partnerships, 32 cooperatives,[1] and 17 corporations.

Location. Beginning with Box Elder and Cache Counties on the extreme north, most feed stores were located along the Wasatch Front and extended down the central part of the state to Sanpete and Millard Counties (figure 1).[2] The major part of the more productive farming land lays in this area. Therefore, more livestock requiring feed store support are raised here. Seventy-nine feed dealers or 69 percent included in the study were located in this general area.

The area of heaviest dealer concentration was area two which includes Weber, Davis, Salt Lake, Tooele, Wasatch and Utah Counties (figure 1). Some 50 dealers or 44 percent of the state's total were found here. Utah County contained 17 retail feed stores. Areas one, two, and three contained 90 dealers.

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1. There were only seven cooperatives incorporated in the state included in this study. However, there were twenty-five branch offices operating more or less as individual dealerships. Because of the heterogeneity of operations which existed among these branch dealerships, they were included in this study as separate operations in all cases.

2. Area delineations made in figures 1 and 2 were made only for convenience in describing the locational factors.

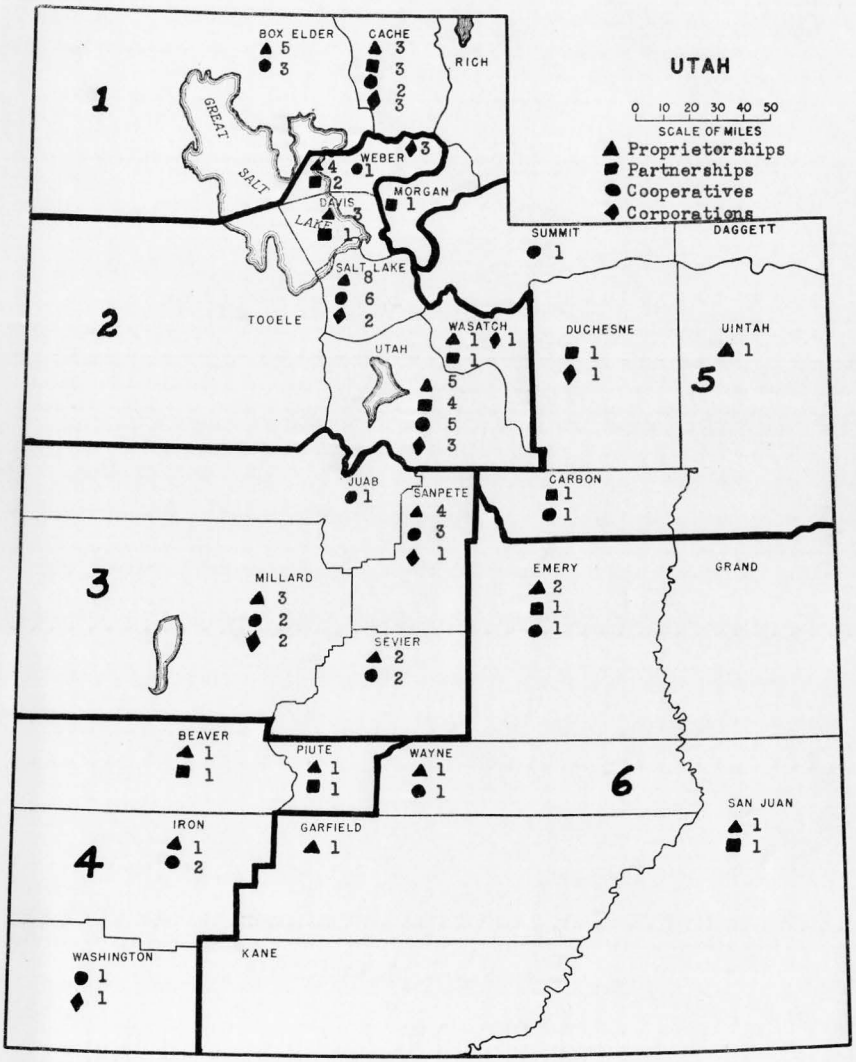


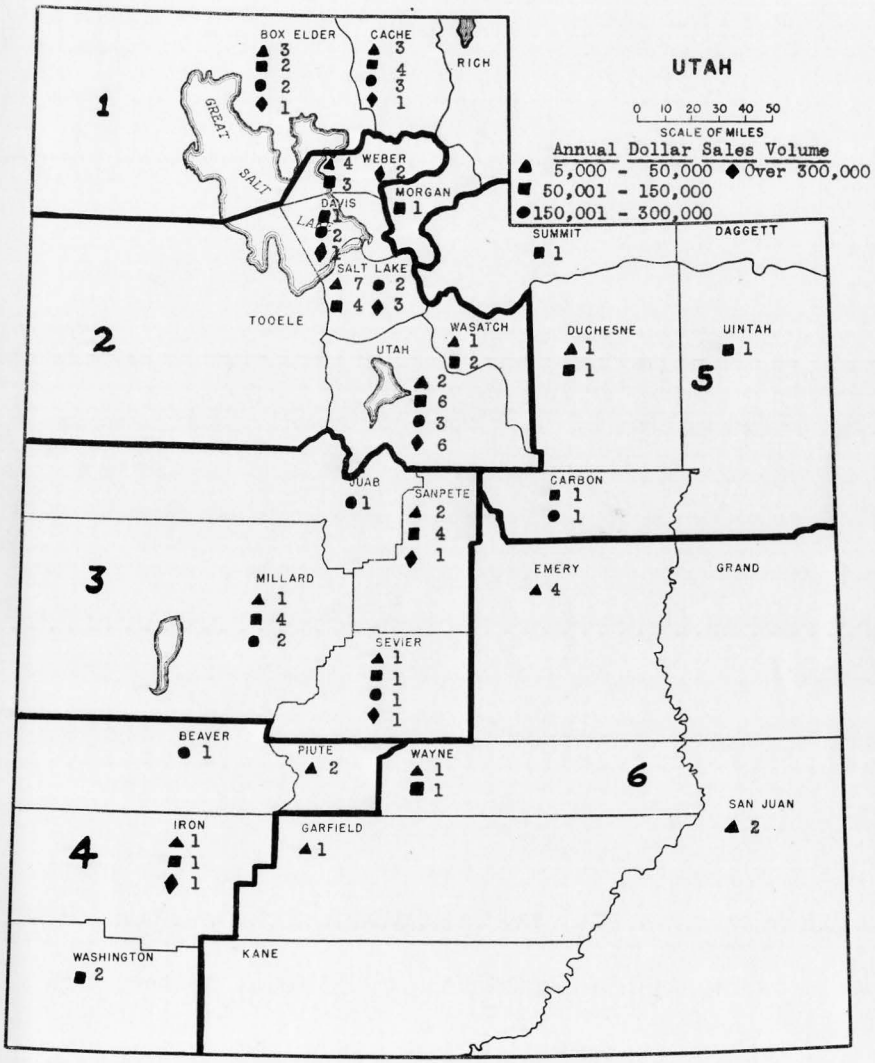
Figure 1. Location of retail feed stores and type of business organization, Utah, 1958

Size of dealerships based on sales volume. An attempt was made to establish a gross feed sales volume for individual firms. However, 69 percent of the dealers had no breakdown between actual feed sold and custom services performed. The major reason given by dealers for not separating these two sales figures was that in many cases custom services were performed in connection with the feed sale and, consequently, the two were billed together. There was no reason for the dealer to keep the feed sales separate.

Firms with $5,000 to $50,000 in feed and custom service sales accounted for 30 percent of those included in the study. They were located throughout the state.

Thirty-six percent of the feed dealers had sales between $50,001 and $150,000. This range included a majority of the dealers in the study. A heavy concentration of firms in this sales range were located in areas one, two, and three (figure 2). Eighty percent of the dealers with sales in this range were located in these three areas.

Sixteen percent of the dealerships in the study had sales of feed and custom services over $300,000. The heavy dealer concentration was found in area two (figure 2). Seventy percent of the dealers with sales over $300,000 were located in this area. The remainder of the dealers in this range were scattered over the state from Box Elder County on the North to Iron County on the South. Seventy-five percent of the dealers in this higher range, had a sales volume over $500,000; 19 percent had sales over one million dollars.



Note: 1 proprietorship, 2 partnerships did not report sales volume.

Figure 2. Location of retail feed stores and size of operation, Utah, 1958

Size of business by type of ownership. Forty-six percent of the proprietorships had sales volumes between $5,000 and $50,000 (table 3). Most firms with gross sales between $50,001 and $150,000 were parterships (50 percent). There were 34 percent of the cooperatives with gross sales between $150,001 and $300,000. Thirty-five percent of the corporations had sales of feed and custom services over $300,000.

Table 3. Feed and custom service sales of retail feed dealers by sales ranges and type of ownership, Utah, 1958

Dollar sales	Proprietorships	Partnerships	Cooperatives	Corporations	Total
			(percent)		
5,000 - 50,000	46	31	13	18	30
50,001 - 150,000	37	50	28	35	36
150,001 - 300,000	13	6	34	12	18
Over 300,000	4	13	25	35	16
Total percent	100	100	100	100	100

The $150,001 to $300,000 sales range included 18 percent of the dealers in the study. A concentration of dealerships in this sales volume range was also found in areas one, two and three (figure 2). Approximately 67 percent of all dealers in this range were located in these areas.

Cooperatives accounted for nearly half of the feed and custom service sales made in Utah during 1958 (table 4). Cooperatives represented 30 percent of the feed dealers reporting and 47 percent of the feed and services sold. Proprietorships accounted for 42 percent

of the dealers reporting and 19 percent of the total sales. Corporations held 16 percent of the dealerships and a sales volume representing 23 percent of the total sales. Partnerships accounted for 12 percent of the dealerships and 11 percent of the sales.

Table 4. Feed and custom service sales of retail feed dealers by type of ownership, Utah, 1958

Type of ownership	Dealers reporting	Feed and custom service sales	Share of total sales	Average annual sales
	(percent)	(dollars)	(percent)	(dollars)
Proprietorships	42	4,400,000	19	97,778
Cooperatives	30	10,915,000	47	341,099
Corporations	16	5,228,000	23	290,483
Partnerships	12	2,476,000	11	190,460
Total	100	23,019,854	100	XXX

Note: Based on reported sales of 108 dealers.

Retail feed prices

Retail prices of feed sold. In order to achieve comparability among prices, a selected list of 18 representative mixed feeds and five whole grains was used in collecting the price data. In most cases, dealers handled feeds other than those included in the study. However, in order to maximize uniformity among the collected data, prices of the various feeds with a specific protein content were used. Quoted prices were based upon the retail sack price of 100 pounds of feed at the feed store.

Rolled barley was handled by more dealers than any other grain or mixed feed (table 5). Eighty-four percent of the dealers interviewed handled this product. Whole wheat was handled by 75 percent while 20 percent laying mash was handled by 71 percent of the dealers. Analysis of the data indicates that these three feeds were the most widely purchased feeds in the state. Large amounts of milo were fed, but relatively few dealers handled it (35 percent). This grain was restricted mainly to poultry feeds.

The average retail prices presented are state-wide averages for the selected feeds. Prices were influenced by many factors. Most of the barley fed is grown in the northern part of the state or imported into the state from Idaho and some from Montana. As the grain moves down the state to feeding destinations, additional transportation charges were added. Variation among prices may also be expected to be influenced by differences in energy content of mixed feeds, local competition, amount of processing involved, and quality differences in whole grains. Other factors such as differences in mixing formulas, purchasing power of large volume dealers, and overhead costs also contributed to variations in prices.

Distribution of feed sales. Dealers were asked to furnish percentage data on amounts of feed sold to the various livestock and poultry groups. Nearly half of the feeds sold in Utah were for poultry uses (figure 3). This was followed in importance by dairy feeds, beef and sheep feeds, and hog feeds, respectively.

Table 5. Average retail prices of selected feeds, Utah, 1958*

Kind of feed and percent protein		Dealers handling feed	Average retail price	Retail price high 10%	Retail price low 10%
		(percent)	(dollars per cwt.)		
Laying mash	16	26	4.25	5.05	3.75
Laying mash	18	53	4.19	4.79	3.82
Laying mash	20	71	4.35	5.24	3.74
Broiler starter	22	61	5.19	5.95	4.14
Broiler finisher	19	44	5.19	5.74	4.32
Turkey starter	28	30	5.47	6.45	4.60
Turkey grower	20	26	4.65	5.21	3.85
Hog grower	16	64	3.96	5.13	3.32
Hog finisher	12	53	3.78	5.15	3.08
Sow feed	15	29	4.18	5.10	3.21
Dairy feed	12	14	3.43	4.40	2.80
Dairy feed	14	69	3.71	4.17	3.06
Dairy feed	16	49	3.62	4.37	3.10
Beef range	16	21	3.61	4.13	3.25
Beef supplement	20	14	3.66	4.27	3.13
Beef supplement	32	23	4.87	5.06	3.48
Beef & sheep	12	11	3.60	4.55	3.20
Beef fattener	14	17	3.63	4.28	3.31
Rolled barley		84	3.08	3.56	2.67
Rolled oats		68	3.21	3.37	2.90
Whole barley		81	2.91	3.42	2.49
Whole wheat		66	3.35	3.69	3.00
Whole milo		40	3.14	3.76	2.70

* Based upon 100 pound sack price at feed plant.

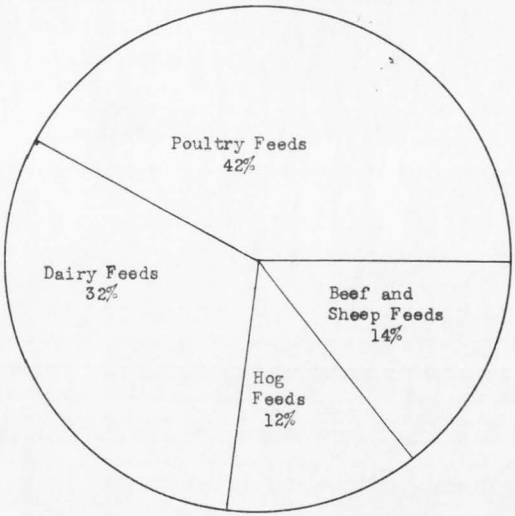


Figure 3. Distribution of retail feed sales to livestock and poultry groups, Utah, 1958

Gross margin on feed sales. Because of the great variation in feed ingredients, mixes, differences in quality of whole grains, etc., an overall gross margin was difficult to obtain. Sixty-one percent of the dealers reported a gross margin. Analysis of the data showed a range from 6 to 22 percent, with an average of 13 percent. Some of this variation was explained by differences in the form in which the products were sold. The margin on whole grains sold was very narrow, whereas more highly processed feeds realized a wider margin. Also, some dealers selling nationally branded feeds on a per sack or per hundred weight basis. These arrangements varied from 50 cents per sack of feed sold to a 10-15 percent markup per hundred weight.

These figures approximate those reported in other research work. A similar study was made by Bakken and Temple, in 1956, on wholesale feed distribution in Wisconsin. This study showed gross margins on six selected feed grains were found to range between 4 and 20 percent (2, p. 24). This study was based upon wholesale distribution of grains. However, results of the study showed that most of the grain sold by dealers with gross sales volumes under one million dollars was sold to feeders at retail price levels.

Custom services

Custom services performed. Considerable variation was found in the types of custom services offered and charges made by feed dealers. Variation may be attributed to several factors, ie., location, type of livestock or poultry fed in the area, competition among dealers, and size of volume necessary to justify the service. Dealers offering specific services ranged from eight percent (storage) to 63 percent (delivery) (table 6). Delivery was offered by more dealers than any other service, followed by grinding, credit, and mixing, respectively.

Delivery charges made ranged from 5 to 25 cents per hundred. The average charge was 11 cents per hundred. The wide variations in delivery charges may have been influenced by the type of feed delivered, distance hauled, method of handling (bulk or sack), and competition in the area.

Prepared laying hen feeds were delivered by more dealers than any other feed group (table 7). Fifty-one percent of the dealers interviewed delivered this item. However, their delivered sales accounted for only 38 percent of the total laying hen feeds sold. This may be due to the wide dispersion of small laying flocks. It is characteristic

of producers owning small laying flocks to purchase their feed needs in small quantities and pick up the feed from the dealer's store at time of purchase.

Table 6. Custom services and charges offered by feed dealers, Utah, 1958

Type of service	Dealers providing services (percent) yes	no	Average charge per cwt. (cents)	Charge per cwt. high 10% (cents)	Charge per cwt. low 10% (cents)
Grinding	62	38	19	26	15
Rolling	49	51	23	28	19
Mixing	47	53	15	26	9
Pelleting	16	84	21	40	13
Storage	8	92	11	30	4
Delivery	63	37	11	25	5
Cleaning and treating	32	68	28	41	18
Credit	59	41	(See table 9 for breakdown of credit charges)		

While only 16 percent of the dealers reporting delivered beef feeds, approximately half of the beef feed sold was delivered. This item was purchased in larger quantities and in most cases involved bulk truck delivery.

Feed delivered in bulk ranged from 15 percent (hog feeds) to 35 percent (turkey feeds) (table 8). Because of the relatively large numbers in a single flock of turkeys, producers realize a price advantage by handling feed in bulk. Thirty-three percent of the

dealers delivered laying feeds in bulk. Twice as many dealers handled laying feeds in bulk as the next highest feed group, dairy feeds.

Table 7. Feed delivered by feed dealers, by livestock or poultry groups, Utah, 1958

Livestock or poultry group	Dealers delivering	Feed delivered
	(percent)	(percent)
Laying hens	51	38
Broilers	30	39
Turkeys	16	43
Hogs	26	27
Dairy	39	43
Beef	16	49

Storage was offered by only eight percent of the feed dealers interviewed. Considerable variation existed in the charges made for storage due mainly to the number of arrangements made between feed dealers and producers. In some cases, producers stored grain in feed dealer's facilities with an agreement to have the dealer mix concentrates and roll, grind or mix the feeding ration for the producer as it was needed. In such instances, storage costs were low or free. In areas where storage was limited and no arrangements between producer and dealer were made, the cost was considerably higher. Although storage costs ranged from 5 to 40 cents per hundred, the average of all dealers reporting was 11 cents per hundred.

Table 8. Percent of bulk feed deliveries, by livestock or poultry fed, Utah, 1958

Livestock or poultry group	Dealers delivering bulk	Feed delivered in bulk
	(percent)	(percent)
Laying hens	33	20
Broilers	15	22
Turkeys	11	35
Hogs	5	15
Dairy	17	27
Beef	5	27

Credit facilities. Sixty-nine dealers or 59 percent offered credit service (table 9). Results of the study indicated that 45 percent of the dealers offering credit were not collecting the credit charges. Many of the dealers offering credit felt this was a particular area of difficulty in operating their feed business. The reason most frequently given for not offering credit terms was that it was too costly to administer. Most cash dealers felt that operating margins in the feed business were too narrow to justify the risk of credit losses and the costs of collection. There was a general feeling among feed dealers in the state, that measures should be taken to tighten credit extension policies.

Table 9. Percent of feed dealers offering credit and credit terms, Utah, 1958

Terms of credit	Dealers offering credit	Credit charges collected	
		yes	no
	(percent)	(percent)	
30 days	23		23
No restrictions	16		16
6% over 30 days	12	9	3
1% per month	3	1	2
6% over 60 days	2	1	1
6% over 90 days	1	1	
7% over 30 days	1	1	
3% over 60 days	1	1	
Total	59	14	45

Plant facilities and equipment for processing and storing feed

Availability of equipment and facilities. Data were obtained regarding the major operating equipment and facilities used by retail feed dealers. Hammer mills were used by more dealers than any other piece of operating equipment. Sixty-three percent of the dealers interviewed owned a hammer mill; 51 percent a mixer; 50 percent a roller. Forty-eight percent of the dealers in the state mixed feeds for sale under their own name brand. Analysis of the data showed that hammer mills, rollers, and mixers were owned by dealers other than those manufacturing their own brand feeds. This suggests that in some cases, such equipment was maintained for custom services only. Dealers who

reported no manufacturing equipment were either branch outlets for cooperatives or dealers handling only major brand name, premixed, feeds and supplements bought at wholesale price and sold at retail.

Only 16 percent of the feed dealers in the study owned a pellet mill. This limited ownership of pellet mills was attributed to two major reasons: (a) the pellet feeding process was relatively new, and (b) a comparatively large sales volume is necessary to justify the high cost of this equipment. Some of the dealers who sold pelleted feeds purchased them in pelleted form, thus, eliminating the need for a pellet mill.

Warehouse storage facilities were provided by 82 percent of the dealers. Size of warehouse facilities varied greatly among dealers.

Percent of use of equipment and facilities. Dealers interviewed were asked to estimate the percent of time their facilities and equipment were in use. One hundred percent capacity was established as the point where, without overtime work, an additional unit of equipment would be needed to meet any increased demand for the service.

A relatively wide range of use in percent capacity existed among dealers (table 10). Those dealers using their equipment for manufacturing ranging from approximately 300 to 20,000 square feet of floor space. Of the 82 percent offering warehouse facilities, 37 percent of the dealers had facilities with more than 5,000 square feet of floor space; 13 percent had facilities with more than 10,000 square feet.

Bulk storage space for storing grain was provided by 68 percent of the dealers interviewed. Of this 72 dealers who offered bulk storage facilities, 28 had facilities with storage capacity over

50,000 bushels; 12 dealers had facilities with capacity over 100,000 bushels.

Table 10. Percent use of equipment and facilities used by feed dealers, Utah, 1958

Equipment or facilities used	Percent use		
	Average	High 10%	Low 10%
Processing equipment		95	
Pellet mill	52	95	20
Roller	52	76	20
Hammer mill	47	89	10
Mixer	43	83	8
Other facilities			
Trucks	57	90	25
Warehouse storage	56	89	19
Bulk storage	48	65	18

Dealers processing their own name brand feeds used the equipment considerably more than dealers who utilized the equipment for custom services only. Among the processing equipment, pellet mills had the highest average percent of use. As indicated previously, this equipment is relatively expensive to purchase, and a high percent of use is necessary to justify the capital investment. In the cases where use was less than 50 percent of capacity, the dealers indicated they were concentrating on developing more outlets for pelleted feeds in an attempt to increase the return to capital invested in the pellet mill.

Warehouse storage and trucks had the highest average use by dealers (table 10). These facilities are a necessity in operating the feed business. Due to seasonality of feeding, and inventory stock needs, warehouse storage space is essential to the business operations. Likewise, procurement, handling, delivery of products, etc. makes trucking equipment a necessity. Size and numbers of trucking facilities varied considerably among dealers. However, all dealers had some type of trucking equipment.

Percent of use of equipment and facilities by area. Results of the study showed that the percent use by dealers of facilities and equipment was quite evenly distributed in the various areas of the state (table 11). On an overall basis, area five (Beaver, Piute, Iron, Garfield, Washington and Kane Counties) obtained the greatest percent use of the available equipment and facilities. This was an area where dairy and beef cattle were quite prevalent. These factors may account in part for the relatively high percent use of the feed dealers' equipment and facilities.

Area six (Emery, Grand, Wayne, San Juan Counties) showed the lowest percent use of the dealer equipment and facilities. This area had only eight small feed establishments and is located in the south-east corner of the state. It is sparcely populated with livestock due to the large amounts of waste land. Relatively small quantities of feed were sold in this area.

Type of livestock or poultry fed in the various areas also influenced the amount of use of the equipment and facilities. Analysis of the data showed that the percent use of rolling equipment was relatively high in the dairy areas of the state, while hammer mill use was high in the poultry areas.

Table 11. Percent of use of equipment and facilities used by feed dealers, by designated areas in the state, Utah, 1958

Equipment or facilities used	*Area 1	Area 2	Area 3	Area 4	Area 5	Area 6
			(percent)			
Trucks	67	57	49	48	68	43
Warehouse storage	60	56	59	48	59	51
Pellet mill	51	50	45	40	65	0
Roller	50	52	59	41	60	46
Bulk storage	51	49	39	46	68	44
Hammer mill	33	46	46	50	57	47
Mixer	42	43	35	63	58	31

* See figure 1 for area boundries.

Based on the overall average use in percent capacity of the selected facilities and equipment, their use could have been approximately doubled before investments in additional units would have been required. This deduction was based on an average of all dealers reporting and did not reflect individual situations. Some individual dealers were operating near capacity while others could have increased the use of their equipment and facilities considerably more than double before the need for additional units would have been necessary. Variation in use also existed within individual plants due to type of feed processed as well as differences in capacity output of the specific machine being used.

Use and procurement of grain and feed ingredients

Extent of use and handling. Thirteen feed grains and ingredients were selected for the study. Barley was handled by more dealers than any other grain or ingredient (figure 4). Oats, wheat, and corn were sold by approximately two-thirds of the dealers, while cottonseed meal and bran were handled by about half. The other grains and feed ingredients included in the study were handled by 40 percent of the dealers or less. Linseed meal was handled for resale and used by the least number of dealers (32 percent).

Because Utah is a deficit grain producing state, procurement of grains and feed ingredients is an important phase of the retail feed business. The three major procurement sources are (a) local farmers, (b) brokers, truckers, wholesalers and other sources within the state, and (c) out-of-state sources.

Procurement from local farmers. Feed dealers indicated that where ever possible, whole grains were purchased from local farmers. This source was a means of saving transportation charges and developing potential sales customers. Barley, oats, and wheat were the grains purchased in any sizeable quantities from local sources (table 12). Sixty-one percent of the dealers purchased all of their oat requirements from local farm sources; 33 percent purchased all their wheat requirements from local farmers; 18 percent purchased all their barley. In most cases, dealers filling all their needs for these grains from local farm sources were small enterprises with limited requirements (sales volumes less than $50,000). Oats and wheat requirements were comparatively limited. Small quantities of oats were fed and the high support prices on wheat made it prohibitive as a major feed.

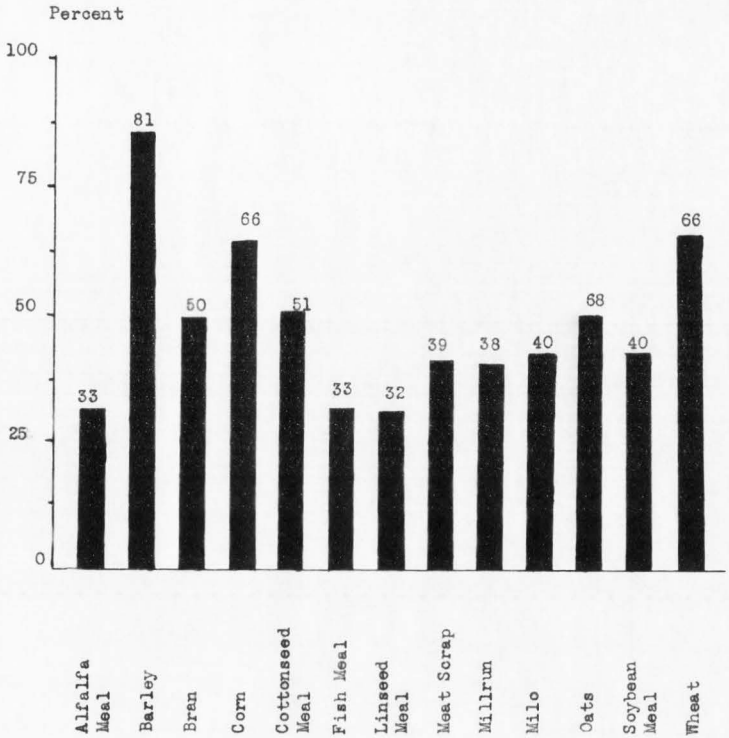


Figure 4. Percent of feed dealers handling grain and feed ingredients, Utah, 1958

Barley needs were filled from local farm sources by only 18 percent of the feed dealers. About half of the 114 dealers in the study filled 50 percent or more (but less than 100 percent) of their needs from local farmers. Seventy-five percent of the dealers filled 50 percent or more (but less than 100 percent) of their needs for wheat from such sources. Out-of-state sources were used mainly to fill the needs which local sources could not meet.

Procurement from other sources within the state. Many of the small volume feed businesses in the state did not have procurement needs large enough to establish direct arrangements for out-of-state purchase. Therefore, most of these dealers procured their needs through broker and wholesale sources within the state. This factor was particularly evident in such products as fish meal, soybean meal, linseed meal and cottonseed meal. A high percentage of dealers in the study obtained their needs for these products from sources within the state (table 12), even though none of these products were produced in Utah.

Two feed ingredients were produced in the state in quantities to meet 100 percent of all feed dealer's needs. They were alfalfa meal and mill run (table 12). The alfalfa meal was produced by two alfalfa mills in the state. These mills are located in Mendon and Delta. The mill run needs were filled from feed and flour processing establishments throughout the state.

Most of the meat scrap and bran was supplied by local sources (table 12). Meat scrap was procured from various meat packers in the state and most of the bran was obtained from the state's milling industry.

Table 12. Percent of feed dealers procuring grain and feed ingredients from various sources, Utah, 1958

Kind of grain or feed ingredient	Sources of procurement			
	Local farmers	*Other sources within the state	**Major out-of-state sources	***Other out-of-state sources
	(percent)			
Oats	61	9	23 v	7
Wheat	33	9	45	13
Barley	18	15	51	16
Corn	3	35	57	8
Milo	--	40	58	2
Cottonseed meal	--	51	45	4
Fish meal	--	75	25	--
Linseed meal	--	80	--	20
Soybean meal	--	85	--	15
Bran	--	97	--	3
Meat scrap	--	98	--	2
Mill run	--	100	--	--
Alfalfa meal	--	100	--	--

* Brokers, truckers, wholesalers, etc., within the state.
** Major areas of out-of-state production (see figure 5).
*** Various other out-of-state producing areas where minor amounts were purchased.

Procurement from major out-of-state sources. The largest group of dealers to obtain grain or feed ingredients from out-of-state sources was the 58 percent who purchased milo from Colorado and Texas. Corn procurement followed closely with 57 percent of the dealers obtaining their corn requirements from Kansas, Iowa, and Nebraska. Idaho was the major out-of-state supply area for wheat, oats, and barley.

Approximately half of the dealers in the study procured their barley and oat requirements from this area (figure 5). The major out-of-state procurement areas were the locations where most of the feed dealers obtained their various grains and ingredient needs.

Procurement from other out-of-state sources. In most cases, whole grains and ingredients were obtained from other areas than those shown (figure 5). As an example, minor quantities of cottonseed meal came from Texas; some barley came from Montana; some corn came from other mid-west states.

While comparatively small amounts of the various products were obtained from "other" sources, this type of procurement was important in supplying the needs of the retail feed dealer. Linseed meal was obtained by more dealers from various "other" sources than any other product in the study (20 percent) (table 12).

Method of handling - sack vs. bulk. Most of the meal type feeds were handled in sack form (table 13). Sack handling of meal feeds by dealers ranged from a high of 100 percent (fish meal and meat scrap) to a low of 77 percent (mill run). Those dealers handling meal feeds and ingredients in bulk were the dealers with large sales for their own mixed feeds.

Over 75 percent of the 114 dealers in the study handled their whole grains in bulk form. Bin storage facilities used by most dealers made bulk handling of whole grain much more economical. Many trucks and transport carriers are built for bulk handling of these grains. All of the larger volume dealers (sales over $50,000) handled their whole grains in bulk. Those who used sacked grains were usually small dealers selling small quantities of whole grains.

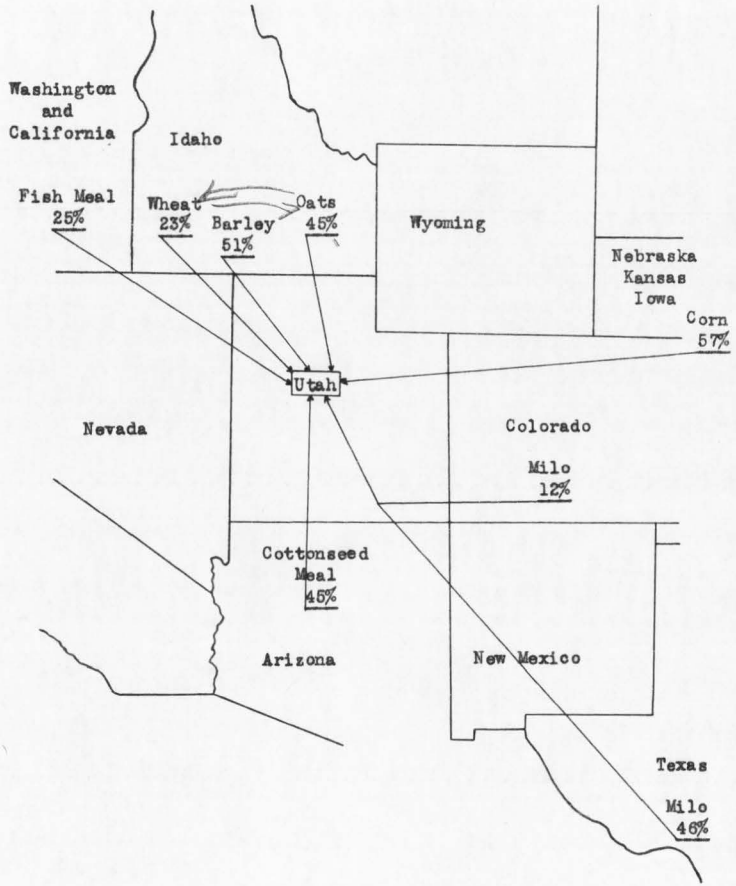


Figure 5. Proportion of retail feed dealers procuring whole grains and feed ingredients direct from major out-of-state sources, Utah, 1958

In most cases where sacked grains were used, the sales of the items were too small to justify storage bins for bulk handling. In those cases, sacked products were kept in the warehouse and usually sold out a few bags at a time.

Table 13. Percent of feed dealers handling grain and feed ingredients in bulk and sack form, Utah, 1958

Kind of grain or feed ingredient	Method of handling		Kind of grain or feed ingredient	Method of handling	
	Bulk	Sack		Bulk	Sack
	(percent)			(percent)	
Barley	79	21	Cottonseed meal	6	94
Oats	74	26	Soybean meal	11	89
Wheat	80	20	Linseed meal	6	94
Corn	82	18	Alfalfa meal	3	97
Milo	73	27	Fish meal	0	100
Bran	18	82	Meat scrap	0	100
Mill run	23	77			

Method of transporting - truck vs. railroad. An average of 80 percent of the dealers handling the 13 grains and ingredients transported the products by truck. Two feed ingredients (alfalfa meal and meat scrap) were transported by truck by 100 percent of the dealers (figure 6). The major reason for truck transportation of these items was that all dealer requirements were produced within the state. In many cases, the dealer used his own trucks for hauling and in cases where commercial carriers were used, the hauls were too short to warrent railroad service.

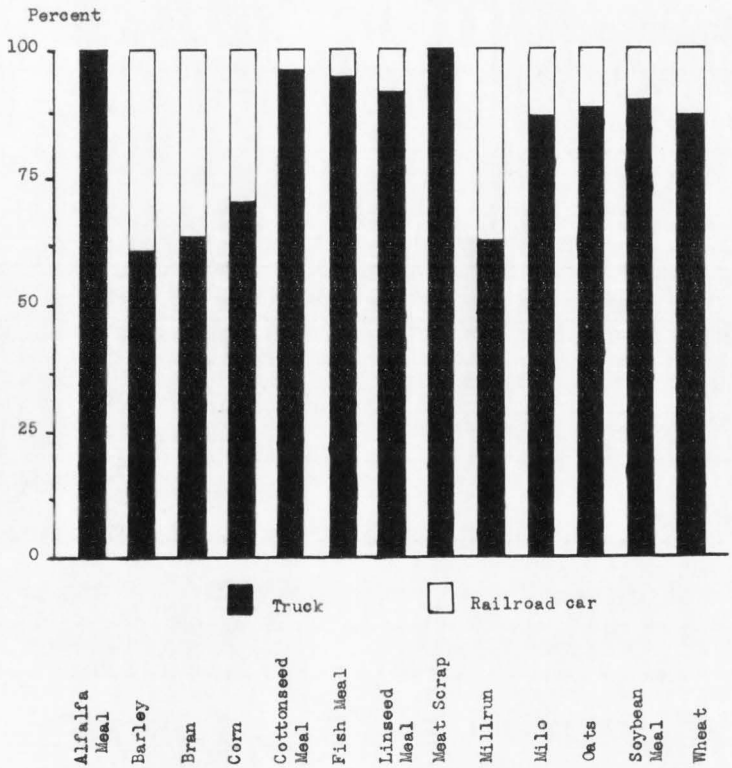


Figure 6. Proportion of feed dealers transporting grain and feed ingredients by truck and railroad cars, Utah, 1958

Parts of the other 11 grains and feed ingredients were transported by rail. This type of transportation ranged from a low of three percent of the dealers transporting cottonseed meal to 40 percent of the dealers transporting barley by rail.

The major reason barley was transported by rail by 40 percent of the dealers handling it was because of large quantities shipped. Car load lots of barley coming out of Idaho have good railroad distribution into Utah. Therefore, convenience of handling probably was a major factor in shipping barley by rail. Another reason for less trucking of barley may be due to less opportunity for back-haul service from Idaho. Very little of Utah's commercial products move into Idaho. Arizona, Texas, and the midwest locations lend themselves to more hauling of various products thus giving more opportunity for grain and feed products being return backhauls.

Dealer owned and contract feeding

During the past 20 years, dealer owned feeding and contract feeding activities have greatly increased in importance. Dealer owned feeding includes those operations where the retail feed dealer uses his own supplies to feed his own livestock or poultry enterprises. These feeding enterprises are maintained on a side-line or supplemental basis to the feed business.

Contract feeding includes those enterprises fed on a predetermined contractual basis with other growers. The feed dealer's major contribution to such a contractual arrangement is to provide the feed and share in the risk of the enterprise on a profit-sharing basis. Broiler and turkey operations are two of the most common type enterprises included in contract feeding arrangements.

Reasons for dealer owned or contract feeding. Feed dealers were asked, "Why did you enter into your own feeding or contract feeding enterprises?" Every dealer interviewed stated that a main reason for such operations was to maintain or increase feed sales (table 14). In most cases, it was the larger dealers (those with sales over $150,000) who were concerned with "putting surplus labor to work." Those dealers interested in obtaining a uniform quality or a constant source of supply of the product were mainly dealers who held an interest in a processing plant. In some cases, contracts between feed dealers and processors called for uniformity in size and quality. The dealer, in turn, fed his own poultry or livestock or contracted other growers to help him meet the commitments of the contract with a processor.

Table 14. The five most frequent reasons given by feed dealers for entering into dealer owned and contract feeding enterprises, Utah, 1958

Reasons given by feed dealers	Percent of dealers stating reason	
	(Owner)	(Contract)
1. To maintain or increase feed sales	100	100
2. To put surplus labor to work	60	0
3. To obtain uniform quality of the finished product	51	62
4. To obtain constant supply of the finished product	43	37
5. To share in bearing the risk to retain feed outlets	30	55

Number and size of dealers feeding own enterprises and contract enterprises. Twenty-three feed dealers were involved in either owner feeding, contract feeding, or both. This accounts for 21 percent of the 114 dealers included in the study. The most popular feeding enterprise for either an owner or contract feeding was turkeys. Fifteen turkey enterprises were fed-- seven on a dealer owned basis, eight on contract basis. Nine dealers were involved in more than one type of enterprise. Combinations of enterprises included beef and turkeys; beef and hogs; turkeys and broilers; hogs and lambs; hogs and turkeys; and broilers and laying hens.

Participation in either type feeding operation was not restricted by the amount of feed sold (table 15). With one exception, dealers in all four sales categories participated. Dealers with sales of $50,001-$150,000 and those over $300,000 accounted two-thirds of all dealer owned feeding enterprises. Dealers with sales over $300,000 accounted for 97 percent of the dealers entering into contractual arrangements with growers.

Table 15. Number of feed dealers entering into dealer owned or contract feeding, by gross sales volume range, Utah, 1958

Sales volume range	Number of feed dealers	
	Owner feeding	Contract feeding
(dollars)		
5,000 to 50,000	3	0
50,001 to 150,000	8	1
150,001 to 300,000	4	1
Over 300,000	6	6
Total	21	8

Dealer owned enterprises included all types of livestock and poultry enterprises (table 16). More broilers were fed than any other poultry or livestock. While over 500 thousand broilers were fed by dealers, only three dealers fed these enterprises. These were large enterprises fed by large gross sales volume dealers. There were seven dealers who fed their own turkeys.

Table 16. Number of enterprises and number of livestock or poultry fed on dealer owned and contract basis, Utah, 1958

Livestock or poultry group	Type of Enterprise			
	Dealer owned		Contract	
	Number of enterprises	Number of livestock	Number of enterprises	Number of livestock
Broilers	3	553,700	4	1,208,000
Turkeys	7	444,000	8	800,500
Laying hens	3	29,500	--	--
Total poultry	13	1,027,200	12	2,008,500
Beef	5	2,640	--	--
Hogs	7	3,690	--	--
Dairy	3	230	--	--
Lambs	1	200	--	--
Total	29	XXXXXXXXX	12	XXXXXXXXX

Broilers and turkeys were the only enterprises on contractual arrangement between producers and feed dealers. Four dealers fed 1.2 million broilers on contract with producers. Eight dealers fed over 800 thousand turkeys on similar contractual basis with producers (table 16).

Value of feed sales to dealer owned and contract feeding enterprises. Over $5.6 million in feed was sold to dealer owned or contract enterprises (table 17). Of this amount, $2.2 million or 40 percent was used by dealer owned enterprises. The largest amount of feed sales was to the turkey enterprises (69 percent). Next to turkey feed sales, beef feed sales amounting to 15 percent of the dealer owned feed sales were the most important. Owner sales accounted for nine percent of the approximately $23 million total industry sales.

Table 17. Value of feed sales to dealer owned and contract feeding enterprises, Utah, 1958

Livestock or poultry group	Value of feed sales		Percent of sales	
	Dealer owned	Contract	Dealer owned	Contract
	(dollars)			
Broiler	191,200	509,100	8	15
Turkey	1,527,200	2,908,600	69	85
Laying hen	95,600		4	
Total poultry	1,814,000	3,417,700	81	100
Beef	339,100		15	
Hogs	64,400		3	
Dairy	21,900		0.8	
Lambs	2,000		0.2	
Total	2,241,400	3,417,700	100	100

2-2914

5,659,100

Feed sales to contract enterprises amounted to $3.4 million or 60 percent of the feed sold to dealer owned and contract enterprises

(table 17). All of these sales were to broiler and turkey enterprises, with 85 percent going to turkey feed sales. Contract feed sales accounted for 14.5 percent of the approximately $23 million total industry sales.

Advantages and disadvantages of contract feeding

The major advantages expressed by feed dealers for contract feeding were: (a) assures improved feed sales, (b) helps growers stay in the feeding business, (c) yields a more uniform product, and (d) provides some means of control over feed sold as compared to feed sold on credit. The major disadvantages expressed for contract feeding were: (a) requires large amounts of supervision and management, (b) involves high risk at comparatively low returns, (c) does not attract the most efficient growers and managers, and (d) difficult to exercise adequate control measures.

Owner and contract feed sales accounted for approximately 24 percent of the total feed sales in Utah during 1958. This is an important part of the annual sales and significant source for utilization of the products handled by the retail feed industry in the state.

SUMMARY

1. Seventy-nine percent of the 114 retail feed dealers included in the study were located in 14 counties in the northwest quarter of the state. The major concentration of retail feed businesses were located down the Wasatch front, extending down-state to Sevier County.

2. The retail feed industry sold approximately $23,020,000 worth of feed and custom services during 1958.

3. Based upon type of ownership, the largest group of dealers in the $5- $50 thousand sales volume range was proprietorships (46 percent); in the $50- $150 thousand range the largest group of dealers was partnership (50 percent); in the $150- $300 thousand range the largest group was cooperatives (34 percent); in the over $300 thousand range it was corporations (35 percent).

4. Gross margins on feed sold ranged from 6 to 22 percent, with an average of 13 percent.

5. Retail prices were obtained on a selected group of 18 mixed feeds and five grains. Prices were based on 100 pounds in sack form at the feed plant. Average price of laying mash with 18 percent protein content was $4.19. Twelve percent protein hog finisher sold for an average price of $3.78. Whole milo sold for $3.14. Retail prices of the other feeds and grains are found in the study.

6. Whole barley was handled by more feed dealers (89 percent) than any other grain or mixed feed in the study. Twelve percent protein beef and sheep feed was handled by the least number of dealers (11 percent).

7. Forty-two percent of the feed sales made by the retail feed dealers were poultry feeds, 32 percent dairy feeds, 14 percent beef and sheep feeds, and 12 percent hog feeds.

8. Delivery and grinding were the custom services offered by the most feed dealers (63 and 62 percent, respectively). Grain storage service was offered by the least number of dealers (eight percent).

9. Fifty-nine percent of the 114 feed dealers offered credit service. Forty-five percent of them collected no charges for credit extension.

10. The major feed processing equipment used by dealers was hammer mills, mixers, rollers, and pellet mills. The hammer mill was owned by more dealers than any other piece of processing equipment (63 percent).

11. The three major procurement sources of grain and feed ingredients were: (a) local farmers, (b) brokers, truckers, wholesalers, etc. within the state, and (c) out-of-state sources.

12. Meal type feed ingredients were handled in sack form by 97 percent of the feed dealers; whole grains were handled in bulk form by over 75 percent of the dealers.

13. An average of 80 percent of the retail feed dealers transported their grains and ingredients by truck. Rail transportation accounted for the other 20 percent. Percent of dealers transporting

by truck ranged from 100 (alfalfa meal and meat scrap) to 62 percent (barley).

14. Twenty-three feed dealers were involved in either owner feeding, contract feeding, or both. There were 29 various dealer owned and 12 contract feeding enterprises included in the study.

15. Value of feed sales to dealer owned feeding enterprises amounted to over $2.2 million, or 9.6 percent of the total industry feed sales.

16. Value of feed sales to contract feeding enterprises amounted to over $3.4 million, or 14.5 percent of the total industry feed sales.

RECOMMENDATIONS FOR FURTHER RESEARCH

Because this study is the first of its kind in studying the retail feed industry in Utah, the descriptive nature of the data lends itself to suggested research in various areas.

Areas of consideration for further research may include:

1. A detailed study of retail feed prices in Utah. Such a study would investigate the factors accounting for the variation in prices found throughout the state.

2. Analyse the role of cooperatives in Utah's retail feed grain industry. Economic theory suggests that where large and small firms operate in the same market, large firms may assume a role as price leader. There are some indications of cooperative leadership in pricing and policy making in the state's feed industry. A study to investigate the extent and economic effect of such leadership and the importance of this type dealership is recommended.

3. Determine present sources of market information and their adequacy in reflecting changes in market conditions. This study should be oriented to the needs of smaller dealers and the adequacy of their market information as an aid in competing with larger feed firms.

4. Analyse the alternative feeding enterprises to maximize utilization of feed grains and ingredients. Much of Utah's feed needs are imported from out-of-state sources. A study to investigate present uses and alternative uses of these feed products may be helpful in achieving maximum economic returns.

5. Analyse the relative merits of integrated firms and cooperative firms. A comparative study showing returns to producers, extent and effect of shifting responsibility for the factors of production, and long-run effects of each type of firm upon producers and the industry may be useful in attaining maximized marketing efficiency.

6. Study the impact of changing technology on the state's feed grain industry. The development of new production methods and new forms of preparing feeds require new information concerning their efficiency, costs, etc. Such innovations as hay and complete ration pelleting are examples of areas for further study to aid the decision making of those participating in the feed industry and Utah's agriculture as a whole.

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