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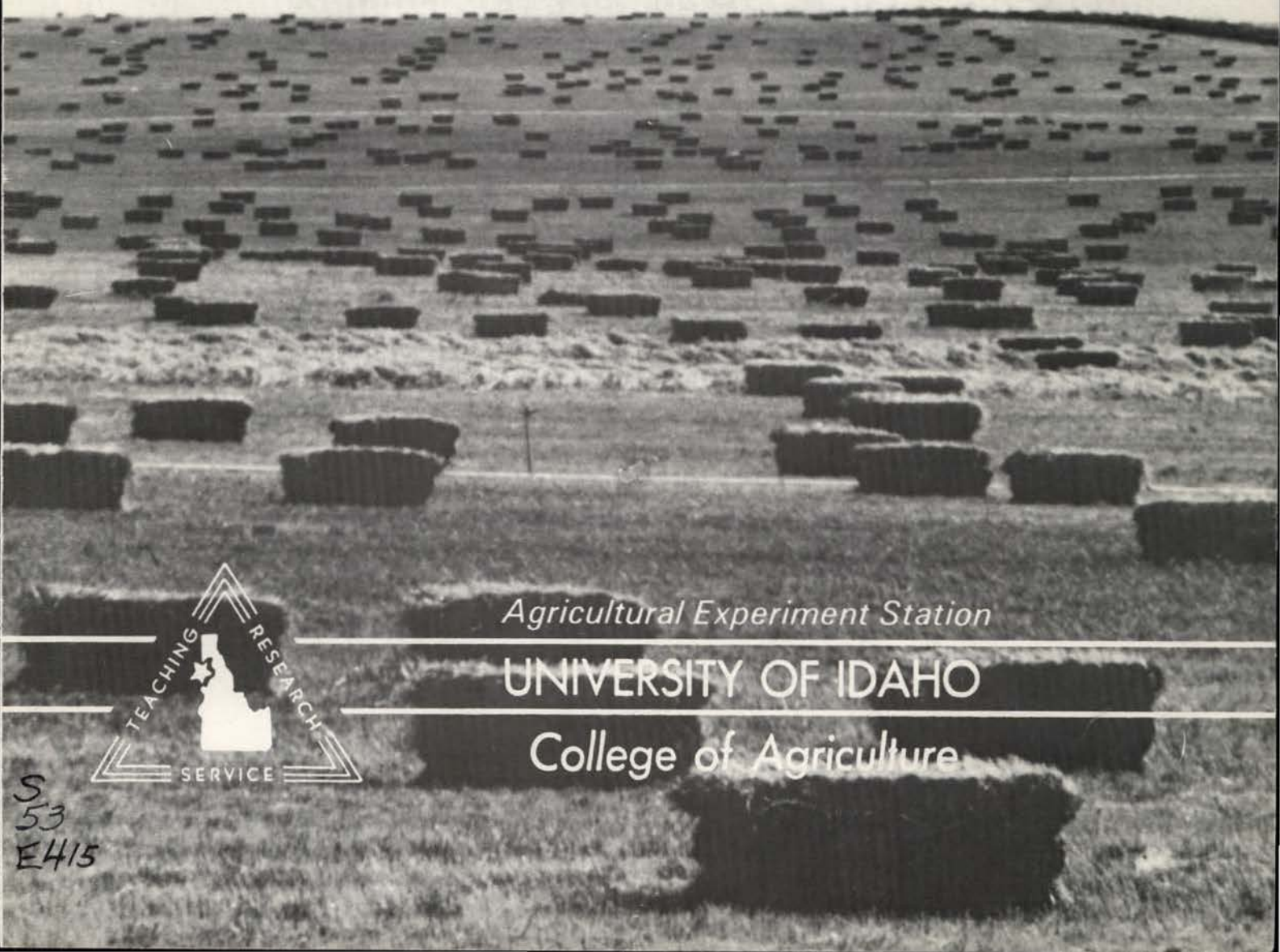
MARKETING ALFALFA HAY IN IDAHO

Gerald Marousek



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Marketing Alfalfa Hay in Idaho

by Gerald Marousek

Production of animal feeds is an important agricultural activity in Idaho. Much of the feedstuffs is consumed on farms where grown and thus does not enter directly into commercial market channels. However, some producers sell part or all of their feed grain and hay, either regularly or in some years. During the 1966-70 period, cash marketings of feed crops in Idaho had a value of $35 to $50 million annually. This includes sales of hay, barley, oats and corn. Hay sales comprised slightly more than one-half of the total. · In addition, wheat is marketed for feed use when the price structure makes it competitive with other feed grains.

The producer markets for animal feeds are typically subject to wide variation with respect to price, quality and other terms of trade, including weight or volume. This is especially true of hay and other nonconcentrates. The hypothesized reasons are several: (1) lack of continuity of trading on the part of sellers and/or buyers, (2) lack of quality standards and recognition of quality factors, (3) lack of facilities for measuring quantity and quality, (4) lack of knowledge of price and supply-demand relationships and (5) lack of market alternatives over other than a limited geographic area for a low-value, bulky product.

The physical and marketing characteristics of alfalfa hay are quite typical of the animal feed products group. It is grown and fed throughout the state of Idaho, although its relative importance as an agricultural crop varies by area.

Objective and Data Sources

This report is part of a Western Regional Research Project entitled "Structure, Conduct, and Performance of the Hay and Feed Grain Markets of the Western Region." The objective of the hay phase of the study was "to determine the hay market structure and to analyze aspects of market conduct in selected submarkets in the west and to evaluate the market performance relative to the impact upon hay producers and hay users." Subsequently, for purposes of standardization and data availability, the study was limited to consideration of alfalfa hay.

The study reported here is based on surveys of alfalfa hay producers, dealers and users. The producer sample population was the USDA Statistical Reporting Service (SRS) list of alfalfa hay producers, eliminating those with less than 25 tons annual production. Two mailings resulted in the return of 1,436 useable responses. This represents 8.7 percent of the 16,551 farms reporting alfalfa hay production in the 1964 Census of Agriculture. Details on the distribution of survey respondents, by area, size and hay marketing activities are recorded in Appendix Table I.

From the producer listing of hay buyers, a sample of names was selected for survey. More than 200 mail questionnaires were returned by this group, hereafter referred to as "hay users." In addition, 23 hay dealers and truckers were personally interviewed.

Survey data are for 1965, and in some cases, 1966. Published data from the Census of Agriculture for 1964 and for 1969, and from the USDA Statistical Reporting Service are used for purposes of comparison and supplementation of the survey data.

Production Characteristics

Production of alfalfa hay in Idaho has increased quite steadily over the past 20 years, from less than 2 million tons annually in the early 1950's to 3.5 million tons in 1970. The Idaho trend parallels that of total United States alfalfa hay production, which increased from 40 million tons in 1950 to 75 million tons in 1970. Annual production of alfalfa hay, 1950-70, for the United States and for Idaho is plotted in Fig. 1.

Alfalfa hay production is reported for every county in Idaho by the Census of Agriculture. The southern areas of the state, however, account for 90 percent of the acres and farms growing alfalfa and 95 percent of total tonnage. ·

The Census of Agriculture reported some 2.8 million tons of alfalfa hay produced in Idaho in both 1964 and 1969. This is somewhat less than the production shown for those years in Fig. 1, which is from SRS crop estimates. The discrepancy may be due in small part to omission of farms with less than $2,500 annual farm product sales from the census compilation. More likely, it is due to incomplete census enumeration, SRS sampling error, or a combination. Census data show Idaho alfalfa acreage declined by 6.6 percent from 1964 to 1969 and number of farms growing the crop decreased by 20 percent. Number of farms growing alfalfa hay, acreage and tons of hay harvested are shown by areas for the two census years in Table 1.

· **Farm Income Situation,** Economic Research Service, USDA, Supplements 214, 216 and 218, August 1969, August 1970 and August 1971, respectively.

· In this report the geographic areas of Idaho are described as "North Idaho," "Southwest Idaho," "Southcentral Idaho" and "Southeast Idaho." These areas are delineated in Fig. 2; they correspond to USDA-SRS Crop Reporting Districts 1, 7, 8, and 9, respectively.

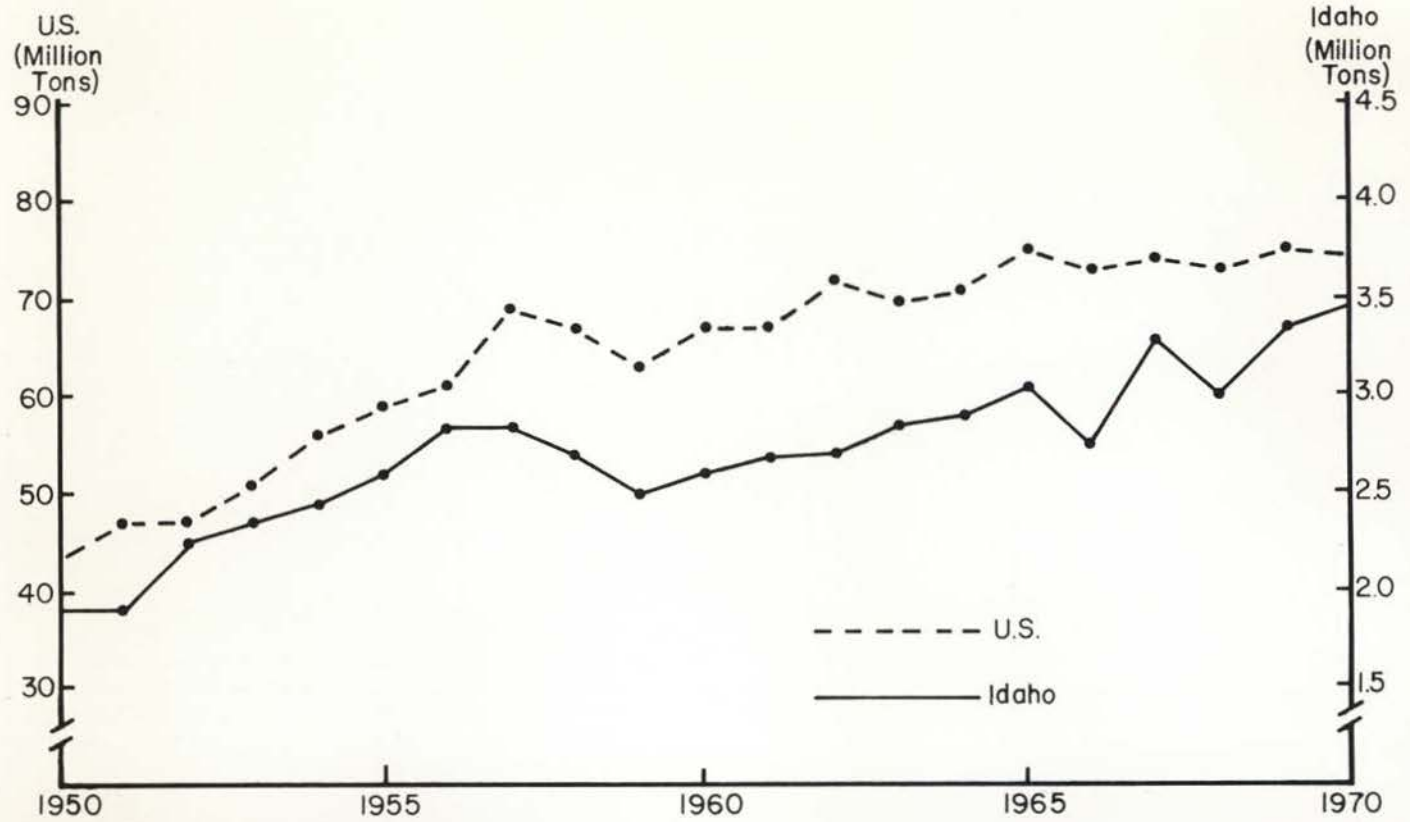

Fig. 1. Alfalfa hay production, United States and Idaho, 1950-1970. (Source: Agricultural Statistics, USDA, and Idaho Annual Crop Summary, SRS, USDA)

Table 1. Number of farms, acres and tons of alfalfa hay harvested in Idaho, by area, 1964 and 1969. ·

Area	1964			1969		
	Farms	Acres	Tons	Farms	Acres	Tons
North	1,692	85,799	148,911	1,361	82,493	166,117
Southwest	4,098	203,348	637,798	3,049	167,696	575,425
Southcentral	4,754	271,045	936,854	3,946	263,981	977,632
Southeast	6,007	406,997	1,116,905	4,918	388,962	1,132,344
State	16,551	967,189	2,840,468	13,274	903,132	2,851,518

· Alfalfa and alfalfa mixtures for hay or dehydrating (dry basis) on Class 1-5 farms (sales of farm products in 1969 amounting to $2,500 or more).
Source: Census of Agriculture, 1969.

Table 2. Acreage and tonnage per farm and yield per acre, alfalfa hay harvested in Idaho, by area, 1964 and 1969. ·

Area	1964			1969		
	Acreage per farm	Tonnage per farm	Tonnage per acre	Acreage per farm	Tonnage per farm	Tonnage per acre
North	50.7	88.0	1.74	60.6	122.0	2.01
Southwest	49.6	155.6	3.14	55.0	188.7	3.43
Southcentral	57.0	197.1	3.46	66.9	247.8	3.70
Southeast	67.8	185.9	2.74	79.1	230.2	2.91
State	58.4	171.6	2.94	68.0	214.8	3.16

· Source: Census of Agriculture, 1969.

Alfalfa hay acreage and tonnage totals shown by area in Table 1 were converted to a per farm basis in Table 2. Acreage per farm ranges from 50 to 79 for the two census dates, is larger in Southcentral and Southeast Idaho than in the North and Southwest, and was greater in all areas in 1969 than in 1964. Tonnage per farm was also greater in 1969 than in 1964, with the Southcentral area growing nearly 250 tons per farm in the latter year compared to 122 tons in North Idaho. Yield per acre was 3.16 tons in 1969, nearly one-fourth ton greater than reported in 1964. Highest average yields were recorded in the Southcentral and Southwest areas.

The Census of Agriculture for the first time in 1969 reported the number of farms and acres with irrigated alfalfa production. In the three southern areas, 90 to 95 percent of the farms and 75 to 85 percent of the acreage of alfalfa hay involved irrigated land.

These alfalfa hay production data afford a general picture of the extent and location of the crop in Idaho. They also provide a basis for comparison with the mail survey of producers. Table 3 shows the per farm tonnage of alfalfa hay reported grown, by areas, by 1,436 respondents. In all areas except Southeast Idaho, the tonnage produced per farm reported in the survey is within 4 percent of the Census of Agriculture figure. In Southeast Idaho the survey production is 13 percent lower than the Census figure.

Fig. 2. Boundaries of the major geographic areas within Idaho.

Table 3. Per farm tonnage of alfalfa hay reported produced, by areas in Idaho, 1965 (Mailed sample survey).

Area	Production	Survey response
	(tons)	(no.)
North	91.7	239
Southwest	152.1	451
Southcentral	204.7	326
Southeast	161.9	420
State	156.9	1,436

The comparison indicates that the 1964 survey respondents in the North, Southwest and Southcentral areas did not differ significantly with respect to average production from the 1964 Census results. In Southeast Idaho, and consequently for the state as a whole, the survey respondents had a significantly smaller average production than the Census reported. · Study results therefore must be conditioned by recognition of this discrepancy. (Details of survey data, by area and size, are recorded in Appendix Table II.)

Farm Price

Farm price for alfalfa hay in Idaho has fluctuated widely over the past 20 years. The extremes on an annual average statewide basis are from nearly $30 per ton in 1952 to less than $14 per ton in 1958. In more recent years, the range has been $18 to $25 per ton. When seasonal and locational factors are considered, it is apparent that alfalfa hay prices have been very volatile. The price behavior nationwide is not unlike that for Idaho, although the degree of fluctuation is less (Fig. 3).

Utilization

A 1964 USDA study analyzed hay production and utilization by counties for all of the United States. The author points out that nationally 60 percent of total hay production is alfalfa and alfalfa-grass mixtures, but in the Mountain and Pacific Coast states, 75 percent is alfalfa. Of the approximately 117 million tons of hay produced annually in the United States, about 15 percent enters the market. ·

· The "t-distribution" values were 0.66, 0.38, 0.44, 2.74 and and 2.59 for the N, SW, SC, SE areas and the state repectively.

· Mildred R. DeWolfe, **Hay in the United States: Quantities Grown in a Normal Year, Surplus and Deficit Areas,** Statistical Bulletin No. 349, Marketing Economics Division, USDA-ERS, Washington D. C., August 1964.

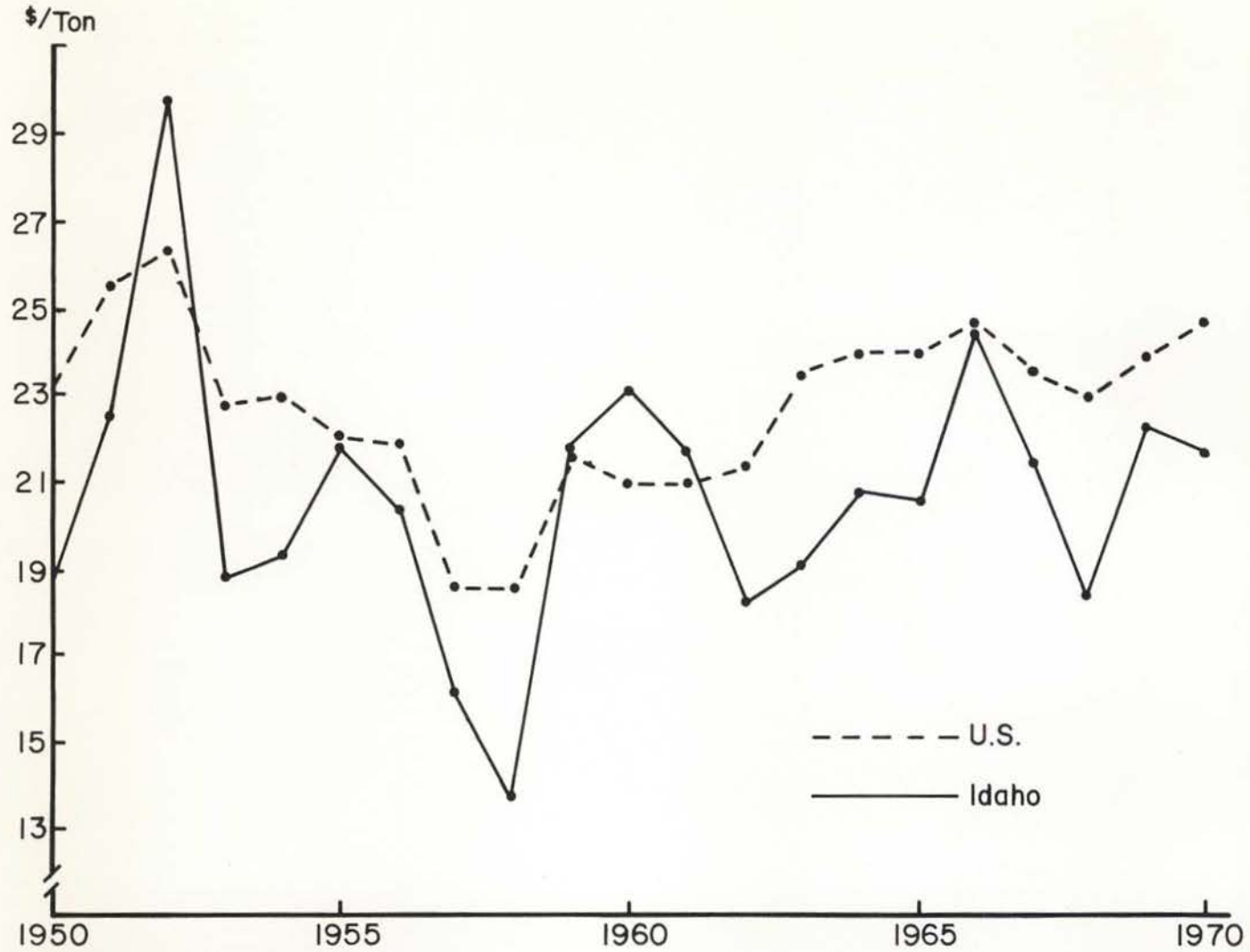

Fig. 3. Farm prices for alfalfa hay, United States and Idaho, 1950-1970. (Source: Agricultural Statistics, USDA, and Agricultural Prices, SRS, USDA)

This USDA study reports Idaho with estimated hay surpluses from 857,000 tons to 1,062,000 tons for the years 1959 through 1963. Within the state, 18 counties are defined as hay exporting areas in a normal year, 16 counties are self-sufficient and 8 counties are importing areas. The importing counties are Clark, Teton, Franklin and Bear Lake in the Southeast area; Ada, Canyon and Gem in Southwest Idaho, and Idaho county at the lower extreme of the northern area (Fig. 4). The 18 exporting counties are interspersed with the self-sufficient counties but only two exporting counties are in North Idaho. Information was not available for Boise and Shoshone counties.

Normal hay production and expected production trend by counties in Idaho, as determined by the USDA study, is shown in Table 4. Of the 37 counties classified, only Minidoka county had a downward production trend for alfalfa. The 13 counties with upward production trends were not arranged in any geographical pattern; they included all areas of the state. The remaining 23 counties were expected to continue production within the normal range shown in the table.

Using information obtained in the mail survey, the average per farm hay sales volume was computed. January 1, 1965, inventory was added to production. Volume fed and the January 1, 1966, inventory were subtracted from this total. The resulting computed sales ranged from 12 to 21 tons per farm in the several areas with a statewide average of 18.8 tons (Table 5).

This figure should not be interpreted as representing the typical size farm hay sale. A large number of hay producers do not sell any of their production; consequently, those who are selling will sell considerably more than the average cited. This will be discussed in the following section of this report.

Table 5 also records the computed sales as a percentage of production. These percentages range from 10.3 in Southcentral Idaho to 13 in North Idaho, with a state average of 12 percent. This is below the U.S. average of 15 percent of total production reported entering the market. However, the smaller per-farm production recorded in the survey, as compared to census enumeration, and the method of computing sales percentage prevent precise comparison of the U.S. and Idaho figures. It is possible that a smaller proportion of Idaho's alfalfa hay enters commercial channels than occurs for hay nationally; it would appear unlikely that the Idaho percentage is greater than the U.S.

Fig. 4. Idaho hay supply situation in normal years. (Source: Statistical Bulletin 349, ERS, USDA)

Table 4. Idaho hay: Normal production and expected trends, by principal kinds of hay. ••

County	Alfalfa, alfalfa and grass mixtures		Clover, timothy and grass hays		Small grains hay		Wild Hay	
	Normal	Expected trend	Normal	Expected trend	Normal	Expected trend	Normal	Expected trend
	1,000 tons		1,000 tons		1,000 tons		1,000 tons	
Ada	100.1 - 200.0	Stable	1.0 - 10.0	Stable	·	Stable	·	Stable
Adams	10.1 - 25.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable
Bear Lake	25.1 - 50.0	Up	1.0 - 10.0	Up	1.0 - 10.0	Down	25.1 - 50.0	Up
Benewah	1.0 - 10.0	Stable	1.0 - 10.0	Stable	·	Stable	1.0 - 10.0	Stable
Bingham	100.1 - 200.0	Stable	1.0 - 10.0	Down	·	---	1.0 - 10.0	Down
Blaine	50.1 - 100.0	Up	1.0 - 10.0	Stable	·	Stable	·	Down
Bonner	10.1 - 25.0	Up	10.1 - 25.0	Up	---	---	---	---
Boundary	10.1 - 25.0	Up	1.0 - 10.0	Down	·	---	1.0 - 10.0	---
Butte	25.1 - 50.0	Up	·	Down	·	Stable	·	Stable
Camas	25.1 - 50.0	Up	·	Stable	·	Stable	1.0 - 10.0	Stable
Canyon	100.1 - 200.0	Up	1.0 - 10.0	Stable	·	Stable	·	Stable
Caribou	50.1 - 100.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Down
Cassia	200.1 - 400.0	Stable	---	---	·	---	1.0 - 10.0	Stable
Clark	10.1 - 25.0	Up	1.0 - 10.0	Stable	·	Down	·	Down
Clearwater	1.0 - 10.0	Up	1.0 - 10.0	Up	·	Stable	·	Stable
Custer	25.1 - 50.0	Up	1.0 - 10.0	Down	1.0 - 10.0	Up	1.0 - 10.0	Stable
Elmore	25.1 - 50.0	Up	---	Stable	·	Stable	---	Stable
Franklin	50.1 - 100.0	Stable	1.0 - 10.0	Stable	·	Stable	1.0 - 10.0	---
Fremont	25.1 - 50.0	Stable	1.0 - 10.0	Stable	·	Stable	·	Stable
Gem	25.1 - 50.0	Stable	1.0 - 10.0	Stable	·	Stable	---	Stable
Idaho	25.1 - 50.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable
Jefferson	100.1 - 200.0	Up	·	Stable	·	Stable	·	Stable
Jerome	100.1 - 200.0	Stable	---	---	·	---	---	---
Kootenai	10.1 - 25.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Down	·	Stable
Latah	25.1 - 50.0	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable	·	Stable
Lemhi	25.1 - 50.0	Stable	10.1 - 25.0	Stable	1.0 - 10.0	Stable	10.1 - 25.0	Stable
Lewis	1.0 - 10.0	Stable	1.0 - 10.0	Stable	·	Down	·	Stable
Madison	25.1 - 50.0	Stable	·	---	·	---	·	---
Minidoka	50.1 - 100.0	Down	·	Stable	·	Stable	---	---
Nez Perce	10.1 - 25.0	Stable	1.0 - 10.0	Stable	---	---	·	---
Oneida	50.1 - 100.0	Stable	---	---	1.0 - 10.0	Stable	1.0 - 10.0	Stable
Payette	50.1 - 100.0	Stable	1.0 - 10.0	Stable	·	Stable	·	Stable
Power	25.1 - 50.0	Up	·	Stable	1.0 - 10.0	Stable	1.0 - 10.0	Stable
Teton	10.1 - 25.0	Stable	1.0 - 10.0	Up	1.0 - 10.0	Up	1.0 - 10.0	Up
Twin Falls	200.1 - 400.0	Stable	1.0 - 10.0	Stable	·	Stable	1.0 - 10.0	Stable
Valley	1.0 - 10.0	Stable	1.0 - 10.0	Up	·	Down	·	Stable
Washington	50.1 - 100.0	Stable	1.0 - 10.0	Down	---	---	·	---

· Less than 1,000 tons.
•• Reproduced from USDA, Economic Research Service, Statistical Bulletin No. 349, August 1964, p. 89.

Table 5. Average per farm alfalfa hay inventories, production, feeding and sales, by areas in Idaho, 1965 (Mailed sample survey; N = 1,436).

Area	Inventory in	Production	Fed	Inventory out	Computed sales	Sales as % of production
	(tons)	(tons)	(tons)	(tons)	(tons)	(percent)
North	57.8	91.7	69.1	68.5	11.9	13.0
Southwest	89.4	152.1	123.5	99.5	18.5	12.2
Southcentral	150.3	204.7	179.9	154.0	21.1	10.3
Southeast	102.1	161.9	136.1	108.0	19.9	12.3
State	100.8	156.9	130.3	108.6	18.8	12.0

Market Transactions

Size

Alfalfa hay producers were classified by geographic area and tonnage of hay grown in 1965. Geographic areas were those used throughout this report. Producer size categories were small (less than 100 tons of hay produced in 1965), medium (100-299 tons) and large (300 or more tons).

The largest single sale of alfalfa hay in the small producer group averaged 22 tons in North Idaho, 40 tons in the Southcentral area. The largest single sale accounted for 50 to 75 percent of total production for the 1965 year.

Among the medium-size producers, the largest single hay sale was 150 tons, equal to nearly 95 percent of 1965 production.

Largest single sale for the large producer category was an average 600 tons. This was 80 to 129 percent of hay production for the year.

North Idaho producers overall reported the smallest single sale tonnage (30 tons) and the smallest percentage of production represented by the single largest sale (52 percent). In Southwest Idaho the comparable figures were 61 tons and 70 percent. Largest single sale in the Southcentral area averaged 105 tons and 79 percent of production. Southeast area sale size was somewhat below that of the Southcentral, but the survey sample in that area was below the Census of Agriculture with respect to producer size. For the entire sample of respondents, the single largest sale of alfalfa hay averaged 76 tons in 1965, or 72 percent of that year's production (Table 6). The second largest sale averaged, in aggregate, 82 percent the size of the largest sale.

Alfalfa hay buyers, identified by those producers who sold hay, were also sent a questionnaire. These "hay users" were asked to record, among other items, their major hay consuming enterprise, their total hay production and purchases and the size of their largest single hay purchase. The 1965 average alfalfa hay production and purchases for 172 dairies, feedlots and ranches (by areas) are shown in Table 7.

Table 6. Largest single sale of alfalfa hay in tons and as a percentage of production, by area and size of producer, Idaho, 1965 (Mailed sample survey; N = 679).

Area	Producer size *			
	Small	Medium	Large	Total
	tons (percent of production)			
North	22.1 (50)	126.0 (79)	--	30.3 (52)
Southwest	33.0 (63)	146.9 (93)	429.0 (80)	60.9 (70)
Southcentral	40.1 (72)	159.4 (96)	600.0 (94)	105.3 (79)
Southeast	38.0 (72)	149.8 (96)	683.3 (129)	94.4 (81)
Total	33.7 (65)	149.8 (94)	600.1 (106)	75.8 (72)

*Small: less than 100 tons produced in 1965
Medium: 100 - 299 tons produced in 1965
Large: 300 or more tons produced in 1965

Table 7. Per farm tonnage of alfalfa hay produced and purchased by sample of Idaho dairymen, cattle feeders and ranchers by areas, 1965 (Mailed survey; N = 172).

Area	Type of operation					
	Dairy		Feedlot		Ranch	
	Produced	Purchased	Produced	Purchased	Produced	Purchased
	(tons)					
North	135	58	92	94	169	224
Southwest	178	193	146	591	140	106
Southcentral	218	295	922	1,223	164	200
Southeast	150	137	508	362	228	201

The hay users responding reported an indicated average consumption (production plus purchases) for 1965 of from 200 tons for dairies and feedlots in the North to over 2,000 tons for feedlots in the Southcentral area. This contrasts with 69 tons fed in the North and 180 tons in the Southcentral for the sample of hay producers (Table 5). Where the producer sample had net hay sales of 12 percent of production, the hay user sample had purchases of 30 percent (northern dairies) to 80 percent (Southcentral feedlots) of their total needs. These are group averages; large hay consuming enterprises may purchase all of the hay used. In general, the type of operation showing the greatest dependence on purchased hay supply was the feedlot and the areas with greatest dependence were the Southwest and Southcentral sections of the state.

For operators having the least dependence on purchased hay, the percentage of total purchases represented by the single largest purchase is the greatest. Thus, the largest single alfalfa hay purchase for dairymen in North Idaho was, on the average, 74 percent of their total purchases. For feedlot operators in Southcentral Idaho the largest single hay purchase was only 22 percent of total purchases. In most groups the largest single hay purchase accounted for more than one-half of the total tonnage bought in 1965. This gives a measure of the frequency with which the several types and sizes of hay users can be expected to enter the market (Table 8).

A final indication of size of firms engaged in alfalfa hay marketing was obtained by personal interviews with 23 hay dealers. Volume of hay handled was reported for each of the years, 1962 through 1965, that the dealer was in business. Annual volume ranged from 50 tons for one dealer in 1964 to 40,000 tons each of the four years for one dealer. The mean or average volume for all dealers for 1962-65 was 5,577 tons; the median tonnage was 3,000. The size of individual purchases or sales by the dealers was not available. Table 9 records the dealer volume figures.

Table 8. Largest single purchase of alfalfa hay as a percentage of total purchases, sample of Idaho dairymen, cattle feeders and ranchers, by areas, 1965 (Mailed survey; N = 172).

Area	Type of Operation		
	Dairy	Feedlot	Ranch
	(percent)		
North	74	51	73
Southwest	47	45	51
Southcentral	60	22	69
Southeast	69	68	54

Table 9. Volume of alfalfa hay handled by sample of dealers in Idaho, 1962-65 (personal interview).

	1962	1963	1964	1965	4 Years
	(tons)				
Largest	40,000	40,000	40,000	40,000	40,000
Smallest	900	600	50	600	50
Mean	5,592	5,158	5,621	6,033	5,577
Median	4,000	2,625	3,000	3,000	3,000
No. dealers	23	20	17	16	16-23

Market Boundaries

The alfalfa producers reporting hay sales in 1965 were asked to indicate the area from which the buyer came. Because all sales could not be feasibly recorded, it was requested that the two largest single sales be identified as to tonnage and name and address of the buyers. For 678 producers responding, 95 percent of the buyers were from Idaho.

By areas, 6 percent were from North Idaho, 23 percent from Southwest Idaho and 33 percent each from the Southcentral and Southeast areas. This is in nearly the same proportion by areas as was total alfalfa hay production (See Table 1). The 5 percent of the buyers from out of state were mainly from Washington (2.5 percent), with some from Utah and Nevada (1.5 percent) and a few from Montana and Wyoming.

Individual Idaho counties from which most hay buyers were cited also correspond with the highest producing counties in 1964. Counties having 5 percent or more of buyers included Ada and Canyon in Southwest Idaho, Cassia, Minidoka and Twin Falls in the Southcentral area and Bonneville and Madison in the Southeast.

Although only one-half as many producers identified the buyer of their second largest sale, the pattern of buyer location was very similar to that of the largest sale, more than 95 % within Idaho, with the largest incidence of out-of-state buyers from Washington.

There was no discernible relationship between producer size and location of buyers to whom hay was sold.

The survey of hay users revealed essentially the same picture with respect to buyers' geographic sources of hay as the producers' response to buyer's location. This is confirmed by statewide figures in the last line of Table 10.

Table 10. Geographic source of alfalfa hay purchases, by buyer location in Idaho, 1965. ·

Buyer location	Source of hay					
	N Idaho	SW Idaho	SC Idaho	SE Idaho	Out of state	No Answer
	(percent of market transactions in each buyer area)					
North	58	3	0	0	25 ··	14
Southwest	0	82	12	6	0	0
Southcentral	0	0	98	2	0	0
Southeast	0	0	4	96	0	0
State	11	22	30	29	5	3

· Based on largest single purchase of 185 hay users (mailed survey).
·· Washington.

Table 11. Geographic location of alfalfa hay purchases and sales by 21 Idaho dealers, 1962-65.

Area	Purchases	Sales
	(percent) *	
Local community	58.6	51.6
Adjacent communities	8.4	10.2
Neighboring counties	14.0	18.3
Other Idaho counties	19.0	14.0
Out of state	0	5.9

* Unweighted average percentage of dealers' tonnage of hay bought (sold) in each area.

The limited geographic boundaries of the alfalfa hay market is further illustrated by the other data in Table 10, which show the source of hay for buyers from each area of Idaho. That is, 83 percent of North Idaho buyers got their hay from their own area or the adjacent Washington state area (this does not account for 14 percent who did not give an answer). In other areas, the percentage of market transactions involving hay grown within the area was 82, 98, and 96 for the Southwest, Southcentral and Southeast, respectively. The table also indicates some hay movement into Southwest Idaho from the areas to the east, and a minor cross movement of hay between (probably adjacent counties of) the Southcentral and Southeast areas.

Hay dealers might be expected to avail themselves of geographically larger procurement and distribution areas than hay producers and hay users making direct transactions. The terms used to describe dealers' purchase and sale areas do not allow a direct comparison with growers' and users' data. However, the 21 interviewed dealers who responded stated that two-thirds of their hay purchases and over 60 percent of their sales were from their local community or adjacent communities. Only 19 percent of purchases were from areas beyond neighboring counties, and 20 percent of sales were in areas outside neighboring counties, including 6 percent out of state (Table 11). All of the dealers interviewed were in the southern areas of Idaho; marketing of alfalfa hay by dealers in the panhandle area of northern Idaho may very well involve more interstate transactions with Washington.

The implication from the dealers interviewed would seem to be that while they may have larger procurement and, particularly, distribution areas than hay users and hay growers making direct transactions, dealers nevertheless confine a large part of their hay purchase and sales activities to a relatively small geographic area.

Form of Hay Bought and Sold

Most alfalfa hay transactions among the groups sampled were made in baled form — 94 percent of producers and users alike reported sales or purchases in bales. Three percent of each group reported transactions in chopped hay, two percent in standing (unharvested) hay and one percent in loose hay. There were 786 respondents in the producer group and 181 in the user category. Producer size or geographic area did not appear to be related to the form in which hay was sold.

Only three of 21 interviewed hay dealers bought hay in other than baled form. Those three bought standing hay to the extent of 10 percent, 15 percent and 100 percent of volume handled.

Types of Buyers

Producers reported making nearly 60 percent of their alfalfa hay sales to cattle feeders. About 15 percent of sales were made each to (1) farmers and ranchers and (2) dairymen. Truckers and dealers accounted for approximately 10 percent and processors 1 percent. Thus, some 88 to 90 percent of producer hay sales were made to the ultimate hay user (feeder, rancher, dairyman) and 9 to 12 percent to middlemen (truckers, dealers, processors). Percentage figures for each type of buyer for producers' two single largest sales are shown in Table 12.

Further analysis of these data shows that the percentage of sales to ultimate users was some 8 to 9 percent lower in Southcentral Idaho, where the size of sales was highest, than in the other areas. Also, large producers made a smaller proportion of sales to users (78 percent) than did medium size producers (84 percent) and small producers (93 percent). Larger sales appear more likely to be made to middlemen buyers.

Table 13 shows the average size, by area, of the major animal enterprises reported by 212 hay users. Other than feedlots (which averaged from 667 head in the Southeast to 1,778 head in the Southwest), most enterprises are of rather modest size. Dairy operations averaged about 60 head in Southwest and Southcentral Idaho, and about 30 head in the North and Southeast. The enterprises requiring only seasonal hay feeding, cattle and sheep ranches, averaged about 200 and 3,000 head, respectively. To the extent that these hay users are producing hay for their own use as well as buying, their impact on the market is diminished.

Ninety-eight percent of the largest single hay purchases by the user group in Southcentral and Southeast

Table 12. Type of buyers for the two single largest sales of alfalfa hay by producers in Idaho, 1965 (Mailed sample survey).

	Feeder	Trucker	Dealer	Farmer or rancher	Dairyman	Processor	Other
				(percent)			
Largest sale [1]	58.4	5.9	4.7	14.7	15.0	1.0	0.3
2nd largest sale [2]	58.6	5.4	3.0	15.0	16.5	0.9	0.6

[1] N = 678
[2] N = 334

Table 13. Type and size of major animal enterprise, sample of Idaho hay users, by areas, 1965 (Mailed survey; N=212).

Area	Dairy	Feedlot	Cattle ranch	Sheep ranch
	(average number of animals)			
North	29	66	231	—
Southwest	59	1,778	101	—
Southcentral	64	1,455	264	3,068
Southeast	34	667	220	3,158
State	42	1,083	207	3,111

Idaho was from producers. However, in Southwest Idaho dealers and truckers were the source of 18 percent of purchases, and in North Idaho dealers and truckers provided 31 percent of the single largest purchases. The remainder in each of these two areas came from producers. These data are based on reports of sources of hay purchases by 180 hay users.

Hay dealers reported nearly one-half of their volume of hay sales to dairymen, one-third to feedlot operators and nearly one-eighth to ranchers (Table 14). This is a much larger proportion of sales to dairymen than reported by producers. Conversely, producers indicated more sales to feeders than did dealers. However, the dealer and producer percentage data are not strictly comparable; the former is based on sale tonnage, while the latter is computed from the number or incidence of sale transactions. Both show some 90 percent of sales to the dairyman-feedlot operator-rancher group.

Hay dealers also reported 70 to 100 percent of their sales to repeat customers (average, 98 percent). The seller-buyer relationship on the consumer side of the market is a continuous one, based on the 21 dealers reporting.

Seasonal Distribution of Purchases and Deliveries

In Southern Idaho 85 percent of alfalfa hay purchases by users was made in the summer (May-August) and fall (September-December) months, about equally divided between the two periods. In North Idaho, however, 31 percent of purchases was during the winter months (January-April) and only 10 percent in the fall.

Table 14. Type of buyers sold alfalfa hay by 21 Idaho dealers, 1965.

Buyer type	Percent [1]
Dairyman	46.7
Feedlot Operator	32.0
Rancher	11.7
Feed Processor	4.2
Horseman	0.1
Other	5.3

[1] Unweighted average percentage of hay sold to buyer type.

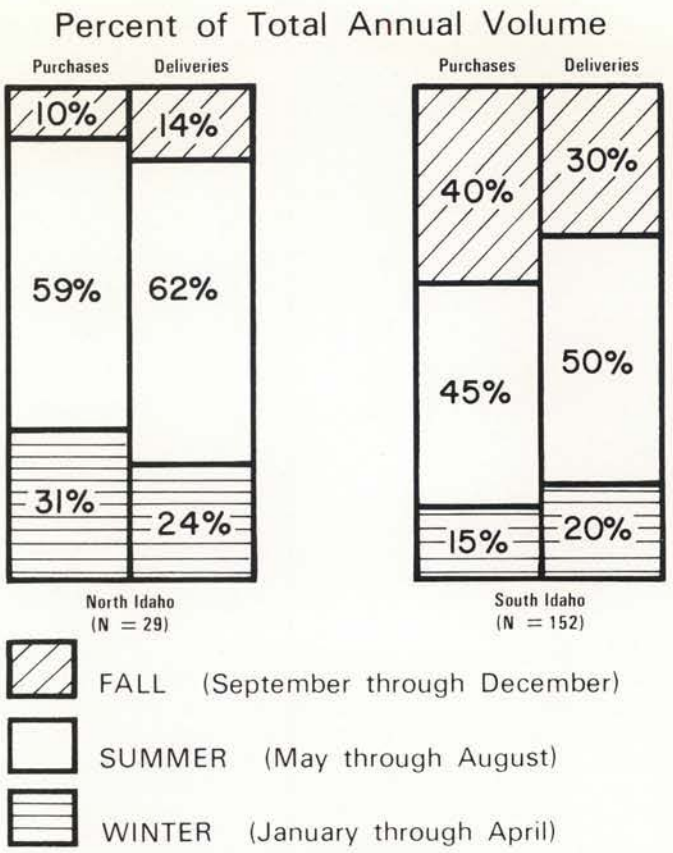

Fig. 5. Seasonal distribution of alfalfa hay users purchases and deliveries in north and south Idaho, 1965. (South Idaho includes the southwest, southcentral and southeast areas.)

Hay deliveries showed a seasonal pattern similar to sales. Figure 5 shows graphically the distribution of purchases and deliveries by seasons for each section of the State. The three areas of Southern Idaho had very similar patterns and were combined in the graph.

The seasonal pattern of purchases and deliveries for Southern Idaho is logically explainable by the alfalfa hay production pattern. That is, hay is purchased following harvest in the late summer and fall months. Delivery is not always taken at the time of purchase due to pressure of other activities and lack of immediate need for the hay. Hence the lag in deliveries during the fall, made up during the winter and following spring and perhaps early summer months.

The purchase-delivery pattern for Northern Idaho is less clear. Possibly the sample of respondents was too small to be representative and therefore no conclusions can be made. One hypothesis is that hay purchases and deliveries are delayed relative to Southern Idaho. In such a case the current year's crop would be held over the fall to a large degree, with purchases increasing in the winter months and being most active the following spring and summer. Deliveries lag purchases in the early part of the yearly cycle (winter), but exceed purchases during other seasons. A proportionally greater dairyman component in the hay-user population, (as compared to seasonal feeders and ranchers) might contribute to such a purchase-delivery pattern.

The frequency with which the seller delivered the hay varied by areas and was directly related to the type of seller. That is, in the North and Southwest areas where dealers and truckers provided hay more often, delivery by sellers occurred in 35 to 40 percent of the largest single sales. In the Southcentral and Southeast where producers were the nearly exclusive source, less than 10 percent of deliveries was made by sellers.

Alfalfa Hay Quality

No recognized quality grading system exists for alfalfa hay. Purchasers were asked to identify the indicators of quality which they considered when buying hay. Among hay users and dealers, personal inspection was by far the most relied upon factor. All dealers responding cited visual inspection as the basis for determining quality. Personal inspection was the only evaluation used by 50 percent of hay users; an additional 38 percent relied on personal inspection along with one or more other factors.

The factors other than personal inspection which hay users considered include reputation of the seller and asking price. Seller reputation was the sole consideration for only 7 percent of the respondents and price only was never given as the quality-determining basis. However, 39 percent considered seller reputation along with other factors and 23 percent considered price among other factors.

Table 15. Quality indicators considered by users when purchasing alfalfa hay, Idaho, 1965.

Quality indicator	Number responding	Percent of total
Personal inspection (1)	88	50
Chemical test (2)	1	1
Reputation of seller (3)	12	7
Price of the hay (4)	0	0
Items (1) and (2)	2	1
Items (1) and (3)	31	18
Items (1) and (4)	14	8
Items (3) and (4)	8	4
Items (1), (2) and (4)	1	1
Items (1), (3) and (4)	18	10
Totals	175	100

Objectively measurable quality indicators were not being employed by users purchasing hay. Only 3 percent listed chemical tests (protein, TDN, etc.) either alone or in combination with other factors, and none cited use of a moisture test. The results from 175 user respondents are summarized in Table 15.

Sources of Price Information

Alfalfa hay market price is conveyed primarily by word of mouth. Two-thirds of the hay users gave oral contacts with producers, dealers, truckers and other hay buyers as the basis for determining current market price. One-fourth cited direct buyer-seller contact as the price determining basis, either producers offers (16 percent), buyer bids (2 percent) or buyer-seller bargaining (7 percent). Market reports were named by only 8 percent of the hay users as a price information source. These are probably prices posted by feed dealers, truckers, extension agents and others, rather than formal market reports (Table 16).

Hay dealers relied on similar price sources: farmers (producer sellers), feedlot operators, ranchers (user buyers), truckers and "local market" or "local conditions." The latter could be expected to include several of the specific sources cited.

Thus, it can be concluded that price information in Idaho alfalfa hay markets is conveyed informally among actual and potential buyers, sellers and dealers. This word-of-mouth information system is comprised of prices offered, asked and paid in the local area. It also includes reports of prices beyond the local area as a result of buyer-seller contacts and dealer-trucker activities. The margin for inaccuracy, rumor and vacuum in this type of price reporting system, coupled with the subjectiveness of quality determination, contributes to instability and risk in the market.

Table 16. Bases for determining current market price by users purchasing alfalfa hay, Idaho, 1965.

Price source	Number responding	Percent of total
Oral contacts	117	67
Market reports	14	8
Producers' offers	27	16
Buyer's bid	4	2
Buyer-seller bargaining	13	7
Totals	175	100

Problems and Improvement Suggestions

1. Producers

The marketing problems faced by alfalfa hay producers are exemplified by their suggestions for improvement. Table 17 shows that more than 40 percent of the improvement suggestions concerned quality and 24 percent involved the measurement and designation of quality — that is, quality testing and grading. Other quality-oriented suggestions concerned the achievement of quality, primarily in the growing and harvesting stages, but to a small degree in storage also.

Another two-fifths of the improvement suggestions were in the economics-marketing area. Included here was the desire for improved market information — that is, supply, demand and price relationships. More than one-fourth of the suggestions concerned market information, while 16 percent called for efforts and programs to increase demand, including advertising and other publicity.

Better regulation of hay truckers and dealers was favored by 11 percent of producers offering suggestions, and one in 20 listed pooling arrangements as a possible selling method.

Producer size showed no relationship to the number and type of improvement suggestions cited.

2. Users

Eighty-eight percent of 137 hay users expressed satisfaction with alfalfa hay which they purchased. The 12 percent who were not satisfied almost always gave low quality as their reason.

Hay users experienced difficulty in fulfilling their hay needs through repeat purchases. Of 252 respondents, comprised of nearly equal numbers from each of the four geographic areas of Idaho, only 11 percent reported that they bought from the same seller year after year. By areas, the percentages were 7 in Southwest and Southcentral Idaho, 9 in the Southeast area and 20 in North Idaho.

The reason for not buying hay from the same source year after year was availability — after consideration of quality, price and distance factors. Other than users who confined their hay sources to local growers and dealers, the combination of factors cited summarizes the response from users who "shop" for hay.

Consistent quality was cited by 72 percent of 151 users as the most serious problem in buying alfalfa hay. The quality factor involves deterioration resulting from adverse weather during harvesting and from improper storage, as well as weediness, overmaturity, etc. Fourteen percent found transportation and labor availability (including the time required to shop) as the most important problem in buying hay. Other problems listed were credit (8 percent), price (5 percent) and dealer integrity (1 percent). The types and incidence of problems cited were similar in all geographic areas of the state (Table 18).

Hay users were asked the question: "Do you buy hay cooperatively with other hay users to obtain price and quality advantages through volume purchases?"

Table 17. Alfalfa hay marketing improvement suggestions, mail survey of Idaho producers, 1965.

Improvement suggestion	Times cited	Percent of total citations
Market information	93	25.8
Advertising, publicity, increasing demand	59	16.3
Pooling arrangements	19	5.2
Regulation of truckers & dealers	41	11.3
Quality improvement & measurement	(150)	(41.4)
Growing, harvesting quality	52	14.3
Storage quality	10	2.8
Quality testing & grading	88	24.3
Totals	362	100.0

Only 8 respondents answered the question in the affirmative; 187 replied "no" and 30 gave no answer. In no area was the "yes" response as high as 10 percent; in Southcentral Idaho there were no "yes" answers.

The written comments accompanying the question included two reports from Southwest Idaho of a group of buyers entering into contracts with truckers. One respondent in the Southeast reported several related individuals joining together in quantity buying.

Judging by the incidence of cooperative hay buying arrangements reported, this method of operation has little appeal. Yet it would appear to offer a potential means for alleviating some of the problems cited by hay users, including those of transportation and labor availability, and perhaps those of credit, price, and dealer integrity — because of the financial resources and bargaining power that group, rather than individual, market activity could provide.

3. Dealers

With only one exception the hay dealers interviewed expressed satisfaction with their hay supply sources. However, they had reasons for going back to certain areas for repeat purchases and for avoiding other supply areas. These reasons were almost always related to hay quality. For instance, the reason most often cited for repeat purchases was "quality." Other reasons given were "customer satisfaction," which must be assumed to reflect the quality factor, and "seller integrity," which probably indicates honesty in business practices (including not attempting to misrepresent the product).

Table 18. Most important problem in buying alfalfa hay, cited by Idaho hay users, 1965.

Buying problem	No. responding	Percent response
Consistent quality [1]	109	72.2
Transportation and labor availability [2]	21	13.9
Credit	12	8.0
Price	7	4.6
Dealer integrity	2	1.3
Totals	151	100.0

[1]Including weather during harvesting and storage conditions.
[2]Including time to shop.

Similarly, all citations except one given for avoiding certain supply areas were based on quality. Some were specific ("weedy," "rocky") while others were the more general term "low quality." The single exception was a reference to "price."

Dealer-Trucker Operations

This section includes additional information on the organization and operations of hay dealer-truckers. The purpose is to provide some insight for evaluating the sector of the Idaho hay industry with the greatest marketing specialization. (Mobile or "fly-by-night" trucker-dealers are not included. It is this type of operator most often cited as creating problems with respect to credit and weights.)

As with information on dealers cited in other sections, the source is personal interviews with 23 dealer-truckers in Southern Idaho in 1965. In some instances, answers were not given by all interviewees; total response is indicated in such cases.

Type and Ownership

Of the 23 dealers, 10 handled hay only while 13 handled other commodities also. The unweighted average percentage of the group's total business volume accounted for by hay merchandising was 73.

Table 19 shows that 9 of the 23 dealers were trucker-merchants, taking ownership of the hay. Six were contract hay haulers, and most of the remainder engaged in processing or merchandising other feedstuffs.

Most dealers were single proprietors. Their average period of time in business was 8 years. None reported any branch businesses or stations.

Table 19. Type of operation and ownership, 23 Southern Idaho hay dealers, 1965.

	Number of dealers
I. Type of operation	
Trucker taking ownership of hay	9
Contract hay hauler	6
Feed manufacturer or processor	3
Feed store	2
Other	2
Total	23
II. Type of ownership	
Single proprietorship	18
Corporation	3
Partnership	1
Cooperative	1
Total	23

Purchase Terms

Dealers reported a variety of practices with respect to timing of payments for hay purchases, ranging from full payment at time of purchase to full payment after the hay was moved. The indication is that the degree of sellers' confidence in dealers' integrity may be quite variable.

Another measure of buyer-seller relationship in hay transactions is the place and time of weighing. Nearly two-thirds of the 21 dealers reported that weighing was done on the seller's premises. This would indicate that (1) the producers had scales, (2) portable scales were brought to the farm or (3) weight was estimated, perhaps on the basis of sample bales. Whatever the method of weighing, the response indicates a desire by the seller and willingness by the buyer to determine the sale volume before moving the hay. Weighing at the dealer's premises and on independent scales were each reported by an equal number of dealers (Table 20).

Sixteen of 22 dealers purchased hay throughout the year; five purchased in the fall only (4 to 6 months) and one was in the market from June to April (10 months).

Equipment and Facilities

The major equipment needed for merchandising alfalfa hay is a truck or trucks. The number of trucks operated by 17 dealers who responded ranged from 1 to 6, with an average of 2.5. Size varied from 14- to 43-foot bed length, or small single-rear axle "straight job" to semi-trailer.

None of the 18 dealers responding reported having hay storage facilities. Hay is either held at the seller's premises until delivered to the buyers or stored in the open.

Labor

Twenty dealers provided information on the labor required for their hay merchandising operation. Individually, it ranged from less than one-half man-year equivalent to more than 10. For the group, the average labor requirement was approximately 4 man-year equivalents.

Margins, Operating Capital, Credit

Limited information was obtained on financial aspects of hay dealers' operations. Eight dealers responded to the question "What gross margin do you strive for from hay handling, excluding transportation?" The most prevalent answer was 5 percent or $2 per ton. Although these margins appear rather modest, the figures may be plausible if transportation cost was interpreted as including the labor involved in loading and unloading as well as during movement.

Operating capital required in buying and selling hay ranged from none to $70,000 (average for 15 dealers was $10,200). The extreme range is partially accounted for by differences in the size of operation, but also reflects the timing of payment for purchases (Table 20)

Table 20. Hay purchasing terms, 23 Southern Idaho dealers, 1965.

	Number of dealers
I. Timing of payment	
In full at time of purchase	5
Deposit when purchased, balance when moved	1
In full when hay moved	3
In full after hay moved	5
Other arrangements	7
Total	21
II. Place of weighing	
Seller's premises	13
Dealer's premises	4
Independent scales	4
Total	21

and the sales terms with respect to payment or credit. At one extreme might be a dealer who deferred paying for hay (as well as labor and truck operating costs) until delivery was made to the buyer, and who required payment in full upon delivery. Such an operation could be carried on with no operating capital.

At the other extreme might be a dealer who pays for hay in full at the time of purchase, holds the hay for sometime at the seller's or his own premises, and gives generous credit terms upon delivery to the buyer. With even modest volume, the operating capital requirements under these policies would be large.

Actual payment and collection policy combinations typically lie between the extremes described above. Payment practices were cited earlier. That credit is extended to buyers is indicated by the affirmative response of 5 of 21 dealers when asked whether they had "outstanding accounts receivable that you consider uncollectable." The amount of these accounts ranged from less than 1 percent to 15 percent (average of 6 percent) of annual gross receipts of the 5 dealers.

Credit practices affect the operating capital requirements, and, when credit extended to buyers results in uncollectable accounts, will reduce dealers' gross and net returns. It can be expected that, over time, dealers who have experienced uncollectable accounts will either modify their credit extension practices or incorporate the risk of uncollectable accounts into their gross margins — or perhaps do some of each.

Transportation Rates

When hay is moved directly from the seller's to the buyer's premises, the middleman's largest cost is for transportation. Data on transportation rates obtained from dealers in Southern Idaho were very general, indicating per ton figures only for distances of less than 100 miles and for 100 miles or more. The range of rates within each category was therefore large — $1 to $8 per ton for the shorter distances and $4 to $10 per ton for distances 100 miles or more. The average and median rate was $4 per ton for distances below 100 miles and $7.25 to $7.50 per ton for longer distances (Table 21).

The transportation rate data do indicate the high cost of moving alfalfa hay, relative to its farm value. The farm price of alfalfa hay ranged from $18 to $25 per ton during the 1960-70 period (Fig. 3). The transportation rates cited above would add 16 to 22 percent to the farm price for hay hauled less than 100 miles, and 30 to 42 percent for hay moved 100 miles or more. Transportation cost is thus probably the single most limiting factor in defining the market boundaries for alfalfa hay in baled form.

Table 21. Truck transportation rates for hay, 21 Southern Idaho dealers, 1965.

	Length of Haul	
	Less than 100 miles	100 miles or more
	(dollars per ton)	
Highest reported	8.00	10.00
Lowest reported	1.00	4.00
Average	4.00	7.25
Median	4.00	7.50
Number of dealers	18	12

Summary and Conclusions

The pricing, quality and terms of trade problems experienced in the alfalfa hay market were hypothesized to result from lack of trading continuity, quality standards, measurement facilities, market information and alternative outlets. The results from the methodology applied (mail surveys of hay producers and users, and personal interviews of a sample of dealers) lend credence to the hypothetical propositions.

Idaho produces some 2.8 million tons of alfalfa hay annually with more than 90 percent grown in the southern areas of the state. From 1964 to 1969 there was a decline in total acreage and number of farms growing alfalfa hay. Production remained constant, however, due to greater acreage per farm, higher yield per acre and consequently greater production per farm.

Nationally, 15 percent of the hay produced enters market channels. Based on survey results, the proportion of Idaho alfalfa hay production sold is 12 percent. The Idaho figure is not strictly comparable, however, because of computational differences and because survey respondents in Southeast Idaho were not as large as Census of Agriculture enumerated producers. During the years 1959-63 Idaho showed 18 counties with a hay surplus, 16 counties self-sufficient and 8 counties as hay importers.

The largest single sale by producers surveyed averaged 76 tons in 1965, and represented 72 percent of that year's production for those selling hay. Hay buyer-users were typically modest-size dairymen, feedlot operators, and cattle or sheep ranchers. Their largest single sale accounted for one-half to three-fourths of their total annual hay purchases. Feedlots in South-central and Southwest Idaho had the greatest dependence upon purchased hay. Hay dealers surveyed handled an average annual volume of 3,000 to 6,000 tons.

Most alfalfa hay sales were made to buyers within the community or area where the hay was grown, although there was evidence of movement from east to west in Southern Idaho, and into Washington from North Idaho. The largest number of producer sales was reported to buyers in the counties of Ada and Canyon (SW Idaho), Cassia, Minidoka, and Twin Falls (SC Idaho), and Bonneville and Madison (SE Idaho). These are also among the largest-producing counties. Some of the known largest buyers were not represented in the survey. They may procure their hay supplies from a larger market area than the survey revealed.

Ninety percent of hay sales by producers was made to the ultimate users, with larger producers more often selling to middlemen. Hay user patronage of dealers and truckers was somewhat greater in Southwest and North Idaho than in other areas. The dealers interviewed reported nearly one-half of their hay sales to dairymen, one-third to feedlot operators, and less than one-eighth to ranchers.

Nearly all alfalfa hay is marketed in bales. Minor amounts are bought and sold as chopped hay, while standing in the field (unharvested), or in loose form. * Marketing is concentrated in the summer and fall months in Southern Idaho, but extends into the winter months in the North. Delivery commonly lags sales by up to several months.

There is no recognized quality grading system for alfalfa hay. Buyers, whether hay users or dealers, relied almost entirely on personal inspection in determining hay quality, although such factors as seller reputation and price were sometimes used as corroborative evidence.

Price information in the Idaho hay market is conveyed informally by word of mouth. Individual offers, bids and negotiations are the basis for arriving at a transaction price. The lack of a formal price reporting mechanism, coupled with the subjectiveness of quality evaluation, increases the instability and risk in the Idaho alfalfa hay market.

The conclusions regarding quality and market information are supported by comments from producers, users and dealers. Forty percent of producers' improvement suggestions concerned quality, including achieving and maintaining quality, but primarily testing and grading for quality. Seventy-two percent of user-buyers termed consistent quality their most important problem in buying alfalfa hay. And dealers reported returning to or avoiding supply areas because of quality.

Marketing economics improvement suggestions were cited by producers even more often than was quality. Improvements in market information accounted for 26 percent of total suggestions; those for increasing hay demand, 16 percent.

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* Since data for this study were collected more hay cubing has been observed. However, the statistical incidence of Idaho hay marketed in cube form has not been determined.

Although group action might be one means of correcting some of the stated problems, only 5 percent of the producer group suggested pooling arrangements — and less than 5 percent of users reported buying cooperatively.

The 23 Southern Idaho hay marketing middlemen interviewed were either merchant dealers or contract haulers. Most were organized as single proprietorships whose major equipment consisted of 1 to 6 trucks. They utilized no hay storage facilities and required an average of 4 man-year equivalents of labor in their hay merchandising operation. Operating capital requirements varied widely, reflecting both size of operation and firm payment and collection policies. Gross margins reported, excluding transportation costs, were modest.

Hay transportation costs, based on rates reported by trucker-dealers, add from one-sixth to more than two-fifths to the producer level alfalfa hay price. The transportation cost in dollar terms depends upon the distance hay is hauled; the proportionate increase from producer price is affected by the hay price level also. Transportation cost appears likely to be the factor which most often defines the market boundaries for baled hay.

Industry Potential and Needs

Given the resource base of Idaho agriculture, alfalfa hay can be expected to continue to be an important commodity. With greater specilization in both hay producing and hay consuming enterprises, more hay can be expected to enter marketing channels. This will tend to lessen the problems associated with small-volume, discontinuous market transactions. Market boundaries and outlet alternatives will continue to be limited by transportation cost as long as alfalfa hay is marketed in baled form.

The most crucial needs for market improvement of the Idaho alfalfa hay industry are (1) a system of objective quality standards and grades, (2) the physical facilities and pricing structure which makes the use of standards and grades operationally and economically feasible and (3) a market information system which conveys supply, demand and price reports promptly and accurately to all segments of the industry.

Appendix Table I. Percentage distribution of hay marketing activities, sample of Idaho producers, 1965, by area and by size (N=1,496).

Market activity [2]	Area [1]				
	North	Southwest	Southcentral	Southeast	State
	(percent of total)				
Buys	1	4	2	3	10
Sells	7	14	15	11	47
None	6	9	6	10	31
Stores	1	1	2	3	7
No reply	1	2	1	1	5
Total	16	30	26	28	100

Market activity [2]	Size [3]			
	Small	Medium	Large	State
	(percent of total)			
Buys	5	4	1	10
Sells	19	20	8	47
None	18	10	3	31
Stores	2	4	1	7
No reply	4	1	—	5
Total	48	39	13	100

[1] North, Southwest, Southcentral and Southeast denotes SRS Crop Reporting Districts 1, 7, 8 and 9, respectively.

[2] Terms describe the usual market activity; "none" denotes production equals consumption; "stores" indicates surplus production is held over and not sold.

[3] Small: less than 100 tons alfalfa hay produced in 1965
Medium: 100-299 tons alfalfa hay produced in 1965
Large: 300 or more tons alfalfa hay produced in 1965

Appendix Table II. Alfalfa hay production with number of producers, by area and size, mail sample survey, Idaho, 1965.

Area [1]	Size [2]							
	Small		Medium		Large		Total	
	Tons	No.	Tons	No.	Tons	No.	Tons	No.
North	44.0	158	158.8	71	369.8	10	91.7	239
Southwest	52.0	225	157.2	170	538.9	56	152.1	451
Southcentral	55.6	138	165.3	129	639.5	59	204.7	326
Southeast	53.0	180	156.7	178	493.3	62	161.9	420
State	51.2	701	159.2	548	546.5	187	156.9	1,436

[1] North, Southwest, Southcentral and Southeast denote SRS Crop Reporting Districts 1, 7, 8 and 9, respectively.

[2] Small: less than 100 tons alfalfa hay produced in 1965
Medium: 100-299 tons alfalfa hay produced in 1965
Large: 300 or more tons alfalfa hay produced in 1965