Cow-Calf Enterprises on Wheat Farms in the Columbia Basin of Oregon

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Contents

AUTHORS: C. Kerry Gee is Agricultural Economist and Henry H. Stippler is former Agricultural Economist, Farm Production Economics Division, Economic Research Service, United States Department of Agriculture, stationed at Oregon State University, Corvallis.

COW-CALF ENTERPRISES ON WHEAT FARMS IN THE COLUMBIA BASIN OF OREGON

C. Kerry Gee and Henry H. Stippler

SUMMARY

The number of cow-calf enterprises in the Columbia Basin wheat area of Oregon has increased in recent years. In Wasco, Sherman, Gilliam, Morrow, and Umatilla counties, 23% of the farmers incorporated a beef-cow herd into their farming operation between 1955 and 1965. However, 10% of those who had a cow herd in 1955 left the cattle business during this same period. Fifty-eight percent of all wheat farmers in these counties had a cow-calf enterprise in 1965.

The purpose of this report on cow-calf enterprises on wheat farms is to provide data on resource requirements, management practices, costs, and returns for researchers investigating adjustment problems in agriculture and for farmers interested in the value of this particular enterprise to their farming operations.

Cow herds were found to be predominantly small in size, under 70 head. Herds of 160 cows or more appeared only on farms having abundant range resources and large grain enterprises which provided extensive areas for spring, summer, and fall grazing.

Rangeland per cow varied between 15 and 47 acres. The reason for this variation was partly in the carrying capacity of the range but also in the availability of aftermath grazing. The smaller amounts of rangeland per cow were found on wheat farms with a relatively large grain enterprise. These farms relied heavier upon aftermath grazing for their

feed supply than upon rangeland or other wasteland. As herd size increased, rangeland per cow increased and reliance upon aftermath for feed decreased. Range and aftermath supplemented each other to some extent, providing from 75 to 80% of the needed feed; range provided 33 to 67% of the annual feed supply, aftermath grazing from 14 to 41%. Harvested roughages consisting of alfalfa, grass, or grain hay supplied from 24 to 39% of the feed. The amount of hay needed depended not only upon the availability of other roughages but also upon weather conditions during the winter.

Average investment in land, buildings, and livestock, as well as other personal property related directly to the cow-calf enterprise, ranged between $470 and $770 per cow. The few buildings used for livestock, while generally well kept, were older structures. Investment in them accounted for $48 to $117 per cow. Equipment exclusively used for livestock represented a minor investment item.

Except when cow-calf enterprises were large, the annual work schedule on wheat-livestock farms could readily be adjusted to permit timely performance of all tasks involved in both crop and livestock enterprises. Calving, roundup, and winter feeding, the main jobs of the livestock enterprise, were accomplished during relatively slack work periods for grain production. Livestock required a minimum amount of attention from April to September, when most field operations were performed. Total labor requirements for livestock varied between 5.7 and 10.0 hours per cow.

Return on investment in cow-calf operations was between 3 and 5% based on 1955-1965 average cattle prices. At prices 20% above this level

the rate of return reached over 5%. With prices 20% below the average, it dropped to 1%.

The hay-feeding period had an important influence on returns to investment. An 82% greater return was obtained with a short hay-feeding period than with a long feeding period.

When just the additional investment needed to establish a beef-cow herd was considered, the rate of return was considerably higher, ranging from 4 to 8%.

A cow-calf enterprise was found to be valuable in paying fixed costs associated with full-time labor and range connected to cropland.

INTRODUCTION

The Columbia Basin wheat area of Oregon includes Wasco, Sherman, Gilliam, Morrow, and Umatilla counties. Collectively, these counties have 6,211,200 acres of land and 5,397,511 acres of land in farms.[1/] In 1965 these farms accounted for 61% of the state's wheat production and 41% of the barley production.[2/] In 1959 there were 1,871 farms with wheat allotments.[3/]

1/ U. S. Census of Agriculture, 1941 Preliminary Reports, Series AC 64-41, for Wasco, Sherman, Gilliam, Morrow, and Umatilla counties.

2/ Oregon Commodity Data Sheet, Wheat and Barley, August 1966, Oregon State University Extension Service and Oregon Crop and Livestock Reporting Service, cooperating.

3/ Wheat Farming in the Columbia Basin of Oregon, Part 1. Major Characteristics of Agriculture, Henry H. Stippler and Emery N. Castle, Agricultural Experiment Station, Oregon State University, in cooperation with the Agricultural Research Service, U. S. Department of Agriculture, Station Bulletin 577, 1961.

Changing economic conditions have caused wheat farmers to make adjustments in their farm operations. One of these adjustments has been an increased number of beef-cow enterprises. Oregon Extension and Crop and Livestock reporting services have indicated that cow numbers in the Columbia Basin counties increased by 23% between 1955 and 1963.[4/]

A mail survey of wheat farmers in this five-county area was conducted in 1965. It showed that 58% of the farmers had a beef-cow herd at that time, 42% had no cattle, and 32% had never owned beef cows.[5/] The survey also indicated that 23% of the wheat farmers incorporated a beef-cow enterprise into their farming operation between 1955 and 1965. Ten percent of the respondents left the cattle business and one percent entered and left it during the same 10-year period.

Source of Data

Information on cow-calf operations on Columbia Basin wheat farms was obtained from interviews with 65 wheat-livestock farmers in Wasco, Sherman, Gilliam, Morrow, and Umatilla counties. The survey was conducted in 1963.

Farms for which records were obtained were divided into two groups according to the type of beef cattle enterprise reported. The first group, cow-calf operations, consisted of farms with cow herds where calves were sold as weaners. The other group consisted of cow-yearling operations

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4/ Oregon Commodity Data Sheet, Cattle, June 1964, Oregon State University Extension Service and Oregon Crop and Livestock Reporting Service, cooperating.

5/ Based on a 20% systematic sample of all farmers with wheat allotments in Gilliam, Morrow, Sherman, Umatilla, and Wasco counties in 1965. An 81% response was obtained by sending an initial letter and two reminders. The survey was conducted by the author in the spring of 1965.

in which calves were wintered and sold in the spring as yearling feeders or grass-fattened during the summer. A cow-calf operation was reported on 53 of the 65 farms studied, or 82%.

For purposes of the analysis, the 53 farms with cow-calf enterprises were stratified according to cropland acreage and herd size (Table 1). Herds were predominantly small, under 70 head of cows. Only 19% of the farms had herds of more than 160 head.

Budgets for eight enterprise situations were prepared from data obtained in the survey. Labor requirements for specific operations were determined from a subsample of wheat-livestock farmers. Supplementary information from county Agricultural Stabilization offices, county tax assessors, insurance agencies, and other business establishments in the area was also used.

Characteristics of Wheat-Livestock Farms

Tenure

Variations in land tenure existed among the farmers. Forty percent indicated complete ownership of cropland, while sixty-one percent owned all of their range. Twenty-three percent of the total acreage of cropland and seventeen percent of the range were rented or leased.

Labor use

Of the 53 farmers with cow-calf enterprises, 20 employed full-time workers and 50 used seasonal labor. On small (0-900 acres) and medium (901-1,500 acres) farms, the operator and his family provided 67% of the labor.

Table 1. Sample distribution of wheat-livestock farms in the Columbia Basin of Oregon with cow-calf enterprises by size of cropland and beef herd, 1963

Size classification of beef herd	Size classification for cropland			Total	
	Small (up to 900 acres)	Medium (901-1,550 acres)	Large (1,551 acres and over)	Farms	Percentage of all farms
	No.	No.	No.	No.	%
Small (up to 70)	10	6	7	23	43
Medium (71-160)	8	6	6	20	38
Large (161 and over) ..	--	4	6	10	19
Total	18	16	19	53	100

Competition for available labor occurred between crop and livestock enterprises on some farms during critical periods. Nine operators reported competition for labor in March and April. This was calving season as well as plowing time. One farm had the same difficulty in the June-July harvest months.

Hiring reliable employees was a major problem. Farmers with large operations (1,551 acres of cropland and over) frequently kept a cow herd to provide work for full-time hired men during slack seasons. A cow herd also helped pay the additional cost of keeping this type of employee.

Land inventory and use

Land resources and use appear in Table 2. Range consisted of canyons, hills, and nontillable areas scattered among grain fields. Irrigated land was limited to small acreages on canyon floors where streams made surface irrigation possible.

Table 2. Average land resources[1/] and use per farm on wheat-livestock farms, Columbia Basin, Oregon, 1963

Item	Size classification for cropland							
	Up to 900 acres		900-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Range	1,058	4,198	797	3,762	12,802	754	3,723	10,988
Irrigated cropland[2/]	22	36	22	26	40	---	15	52
Alfalfa	22	36	22	26	40	---	15	52
Nonirrigated cropland	405	457	1,100	996	1,055	2,828	2,171	3,732
Wheat	144	157	373	300	316	787	824	993
Barley	66	73	163	97	142	358	214	522
Grain hay ...	5	43	10	20	95	15	32	42
Alfalfa	---	10	---	52	50	11	47	50
Fallow	190	174	554	527	452	1,657	1,054	2,125
Diverted from grain[3/] ..	65	28	71	26	69	91	181	328

1/ Includes both owned and rented land.
2/ All irrigated cropland was in permanent alfalfa. Surface irrigation was predominant.
3/ This included land diverted from both wheat and barley. Practically all diverted land was in summer fallow.

Wheat, barley, dryland alfalfa, and grain hay were the major crops. A common practice was to overplant wheat allotments, then cut the least productive excess areas for hay.

Good hay was expensive and frequently hard to obtain. Therefore, most irrigated land was planted to alfalfa.

Rangeland and aftermath (stubble fields) were grazed where water was available. Table 3 shows the relationship between cow-calf enterprises and these resources. The average rangeland and aftermath per cow for all farms was 30.9 and 8.7 acres, respectively. This averaged 29.6 acres of forage per cow. Lowest and highest average forage acres per cow occurred on farms with small beef herds. Where low cow-forage ratios existed, hay feeding was required much of the year. Large farms with small herds had excess forage in the form of aftermath.

Table 3. Relationship between herd size and forage on wheat-livestock farms, Columbia Basin, Oregon, 1963

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	Acres	Acres	Acres	Acres	Acres	Acres	Acres	Acres
Rangeland per cow	26.8	33.2	15.0	35.2	37.0	17.1	35.6	47.4
Aftermath per cow	6.1	2.4	11.7	4.4	1.8	27.1	11.3	4.8
Rangeland and aftermath per cow	32.9	35.2	26.7	39.6	38.8	44.2	46.9	52.2

Land productivity

Wheat yields varied between 15 and 60 bushels per acre. The average was 35 bushels. Seventy-six percent of the farms yielded at least 30 bushels per acre. Barley yields were generally 3 to 4 bushels per acre more than wheat.

Aftermath included stubble from wheat, barley, and hay land. The average yield in terms of acres per AUM (animal unit month) was 3.55 acres. Only farms using all available aftermath were included to obtain this figure.

The average carrying capacity for range with a 6.5-month grazing period was 3.8 acres per AUM.

Yields for dryland alfalfa and grain hay were similar. Dryland alfalfa yielded from 0.5 to 1.5 tons per acre with an average of 0.9 ton. Production of grain hay per acre ranged between 0.5 and 2.0 tons. The average for all farms was 1.15 tons per acre.

The Cow-Calf Enterprises

Livestock inventory

Herd size and composition are shown in Table 4. Bull-to-cow ratios ranged from 1:17 to 1:23, with an average of 1:20. The most common brood-cow replacement rate was 15% per year.

Investment

Total investment for the cow-calf enterprise is shown in Table 5 while investment per cow appears in Table 6. On most farms, range was the major investment item with the cow herd next in importance. Investment in buildings was small. Fencing costs were high, averaging $61 per cow over all of the farms.

Table 4. Average livestock inventory and calf crop on wheat-livestock farms, Columbia Basin, Oregon, 1963

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	No.	No.	No.	No.	No.	No.	No.	No.
Brood cows	35	120	39	107	346	44	102	285
Bulls	2	6	2	5	15	2	5	14
Heifers, 1 to 2 yrs.	5	20	6	16	52	7	15	45
Heifers, under 1 yr.	6	21	7	17	54	8	16	48
Calves, weaned	31	108	36	93	304	40	89	254

Table 5. Average investment per farm related to livestock enterprises on wheat-livestock farms, Columbia Basin, Oregon, 1963 1/

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	$	$	$	$	$	$	$	$
Range 2/	15,870	55,845	11,955	51,000	146,265	6,705	29,345	123,420
Buildings and fences 3/...	4,059	6,944	4,925	8,072	18,279	5,162	9,518	19,095
Equipment 3/.	30	219	30	219	570	30	219	560
Cattle	6,960	23,985	7,765	20,915	67,230	8,720	19,669	56,430
Total	26,919	86,993	24,675	80,206	232,344	20,617	58,742	199,505

1/ For a detailed breakdown of buildings and equipment see Appendix Table 1.
2/ Does not include the value of rented range. Range investment was based on a value of $15 per acre.
3/ Based on the original purchase price halfway depreciated.

Table 6. Investment per cow for livestock enterprises on wheat-livestock farms, Columbia Basin, Oregon, 1963 1/

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	$	$	$	$	$	$	$	$
Range	453	465	307	477	423	152	288	433
Buildings and fences.....	116	48	126	75	53	117	93	67
Equipment	1	2	1	2	1	1	2	2
Cattle	199	200	199	195	194	198	193	198
Total	769	715	633	749	671	468	576	700

1/ For detailed breakdown of investment items see Appendix Table 1.

Management practices

The seasonality of operations for a cow-calf enterprise is illustrated in Figure 1. Seasonal labor requirements by herd size and operation appear in Appendix Table 10.

Labor needs were greatest in the winter for feeding and calving and again in the late fall for roundup and selling. Calving was the only operation that seriously conflicted with other farming activities.

Annual feed sources appear in Figure 2. Feeding patterns were dependent on the date of the first snow, spring range conditions, and time of harvest. Hay feeding was occasionally necessary as early as November 1

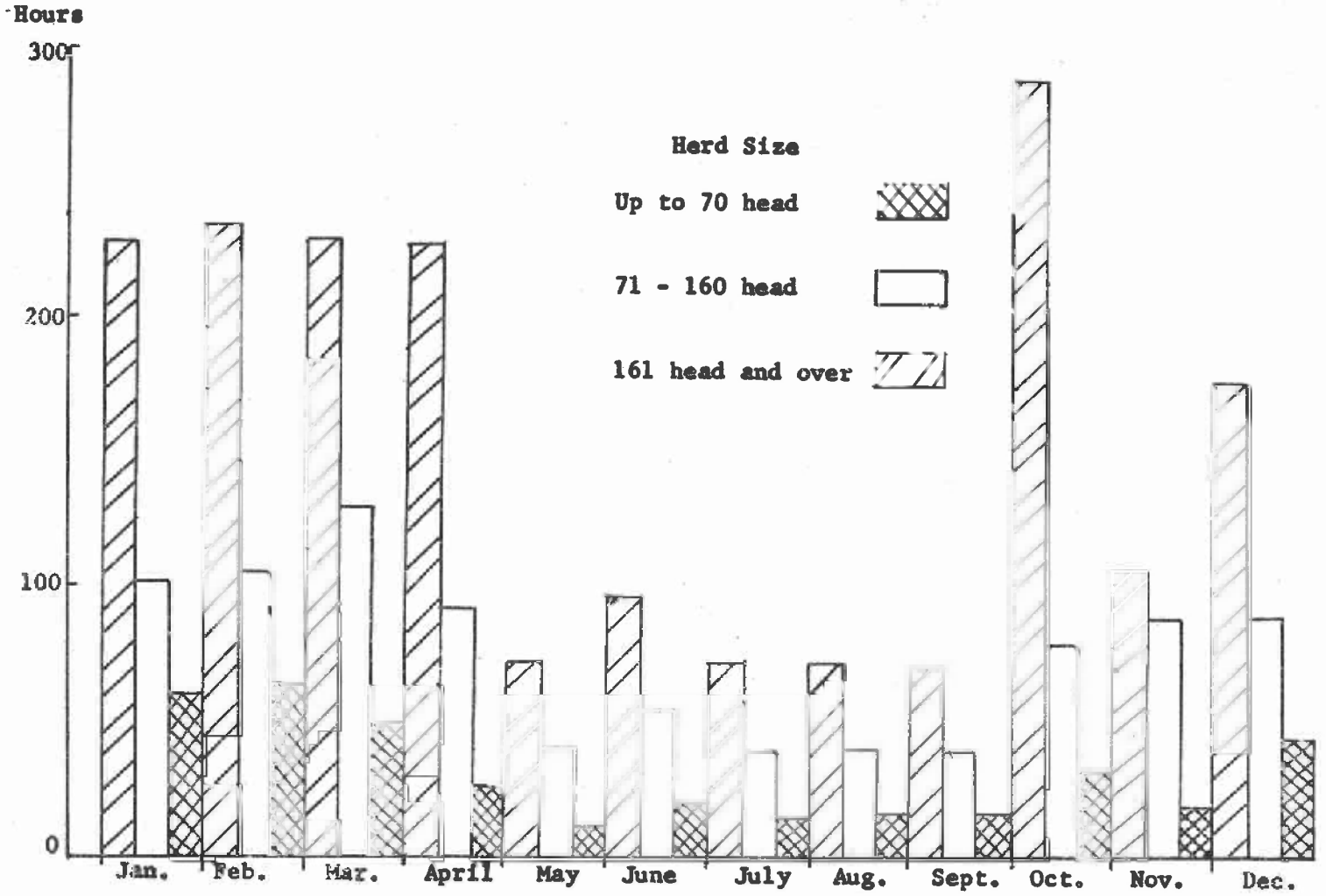

Figure 1. Seasonal labor distribution for livestock enterprises on wheat-livestock farms, hours per month, Columbia Basin, Oregon, 1963.

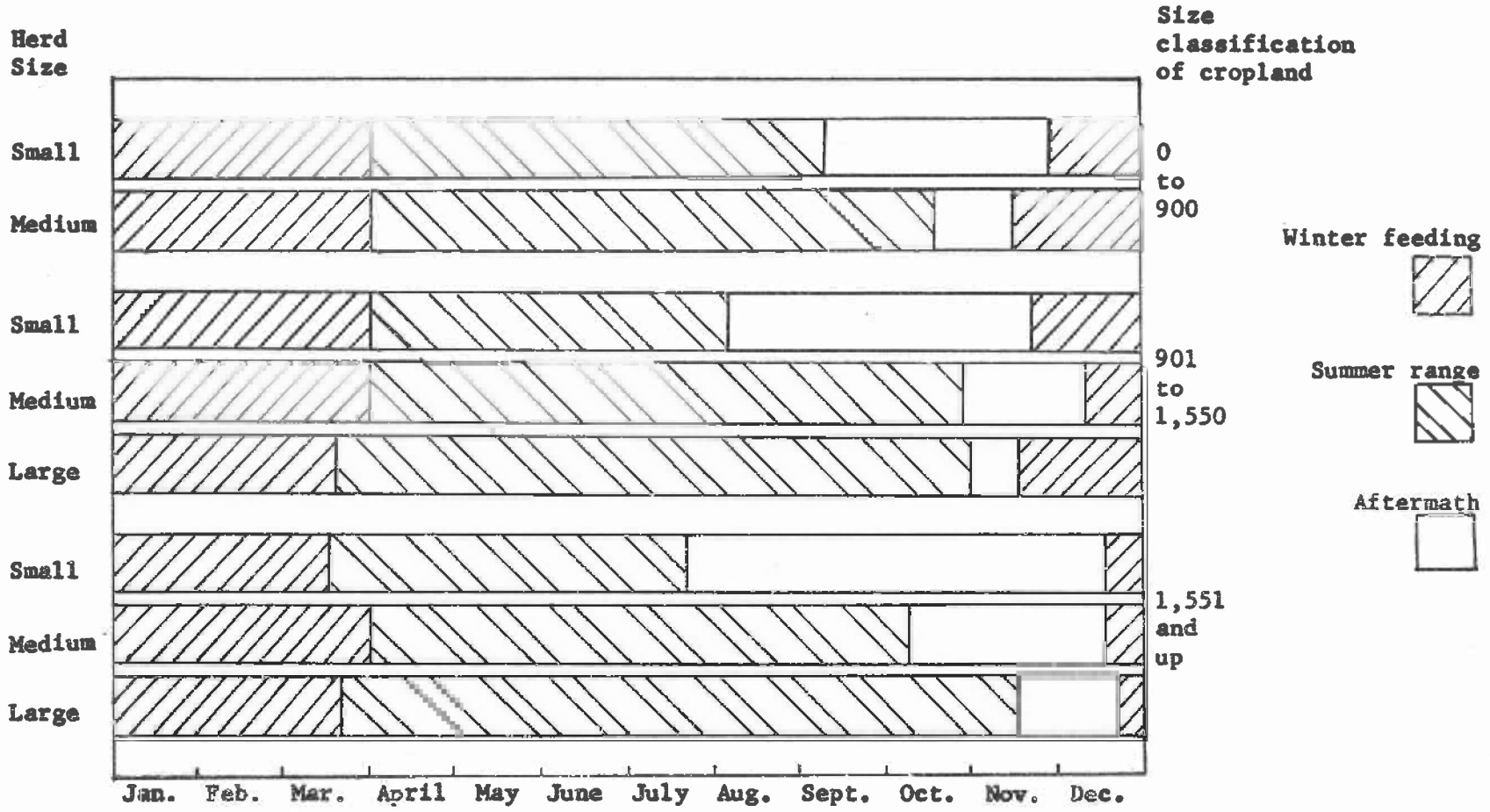

Figure 2. Annual feeding pattern for livestock on wheat-livestock farms, Columbia Basin, Oregon, 1963.

and as late as April 1. However, with an open winter, hay was required for only 2 or 3 months if adequate forage was available. Stubble could not be grazed until harvest began (August 1).

Independent buyers and local auctions were the main sales outlets (Figure 3). With on-farm sales, a deduction for shrinkage was optional, depending on the distance to the weighing point.

Production

Annual sales consisted of steer and heifer calves and cull cows. Calf weights differed with availability and quality of feed, time of sale, and average calving dates (Table 7). Calf weights were light where aftermath was limited and herds had to graze for long periods on dry range. Small herds calved early and had a short calving season, resulting in heavier average weights at market time.

Table 7. Selling weights of calves and cull cows on wheat-livestock farms, Columbia Basin, Oregon, 1963

	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
Item	Small	Medium	Small	Medium	Large	Small	Medium	Large
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Heifer calves	488	414	448	430	419	485	440	380
Steer calves	505	439	475	451	438	506	566	414
Cull cows 1/	950	950	950	950	950	950	950	950

1/ Assumed weights for cull cows.

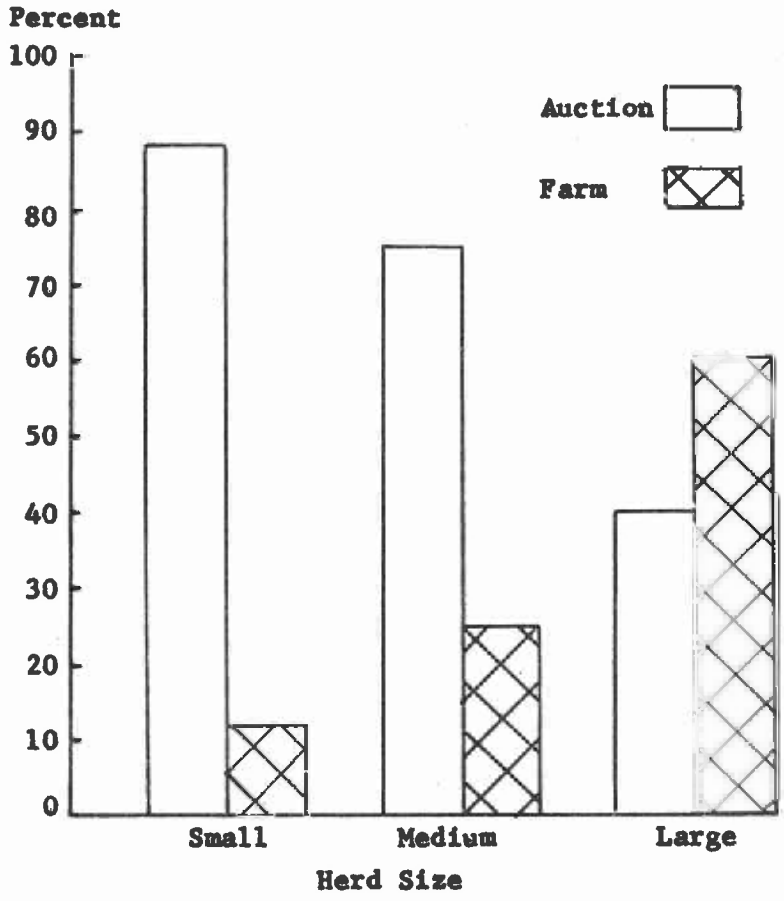

Figure 3. Comparison of methods used for selling cattle on wheat-livestock farms based on herd size, Columbia Basin, Oregon, 1963.

Calving percentages, based on number of calves weaned, varied slightly on farms of different size and also by herd size. The average calving rate was 89% for all farms. Small herds averaged 92%, while medium and large herds averaged about 88%.

Costs and Returns

Detailed budgets were constructed for beef-cow herds on eight wheat-livestock farms in the Columbia Basin of Oregon. Enterprise costs and returns were summarized using three sets of livestock prices and three alternative hay-feeding periods. The initial prices were 10-year averages of October and November prices for calves, and June prices for cull cows at the Portland auction from 1955 to 1965. Alternative price levels were 20% above and 20% below the October-November average for calves, and 15% above and 15% below the June average for cull cows.

Initial hay-feeding periods used in the budgets were 1963 averages summarized from the survey schedules. Two additional hay-feeding periods were budgeted to determine the effect of alternative hay requirements on enterprise returns. The long feeding period was 151 days for all farms. The short period was 40% less than the average for each farm.

The initial budgets involved average prices and the 1963 hay-feeding periods. A partial budgeting procedure was used to investigate the effect on enterprise costs and returns of the alternative price levels and hay-feeding periods.

Cost and return summaries

A detailed summary of production and inputs for each cow-calf enterprise appears in Appendix Tables 2 to 8.

The profitableness of beef-cow herds on wheat farms, based on average product prices and 1963 hay-feeding periods, is presented in Tables 8 and 9.

Returns to family labor and management were negative in all cases except the small cow herd on large farms. A similar situation occurred with returns on investment. The small herd on large wheat farms yielded the highest rate of return, 5.3%.

Two factors made the small cow herd on large farms profitable: First, resources provided the necessary feed to raise heavy calves (Table 7); and second, the hay requirements were relatively small because a plentiful supply of aftermath was available (Figure 2). Also, this herd had the lowest investment per cow (Table 6).

Return on investment for the alternative hay-feeding periods and price levels appears in Tables 10 and 11. The average rate of return for the eight farm situations with the 1963 average feeding period was 2.9%. The average rate for the long feeding period was 2.3% and for the short feeding period 3.9%. The rate of return with a short feeding period was 82% greater than that obtained from a long feeding period when averaged over the eight farm situations.

Price variations had a more pronounced effect on returns than hay requirements. At the high price level the rate of return was above 5%

Table 8. Return to family labor and management from beef-cow herds on wheat-livestock farms, Columbia Basin of Oregon, using 1955-1965 average cattle prices

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	$	$	$	$	$	$	$	$
Gross revenue	3,475.53	10,989.29	3,837.23	9,594.45	31,000.99	4,541.29	9,365.55	24,603.86
Costs:								
Fixed and variable ..	2,738.50	9,926.06	2,778.90	8,950.38	29,313.54	3,491.08	8,834.32	8,834.32
Home-grown feed 1/	820.03	2,653.20	1,077.38	2,029.78	5,420.78	853.30	2,057.36	4,458.58
Total	3,558.53	12,579.26	3,856.28	10,980.16	34,734.32	4,344.38	10,891.68	28,683.60
Gross revenue minus total fixed and variable costs	737.03	1,063.23	1,058.33	644.07	1,687.45	1,050.21	531.23	363.84
Return to family labor and management 2/....	-83.00	-1,589.97	-19.05	-1,385.71	-3,733.33	196.91	-1,526.13	-4,094.74

1/ Values set on home-grown feeds were: alfalfa hay, $25.00 per ton; grain hay, $12.00 per ton; and aftermath, $1.60 per AUM.

2/ Gross revenue less total fixed and variable costs and value of home-grown feeds.

Table 9. Return on investment from beef-cow herds on wheat-livestock farms, Columbia Basin of Oregon, using 1955-1965 average cattle prices

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	$	$	$	$	$	$	$	$
Gross revenue	3,475.53	10,989.26	3,837.23	9,594.45	31,000.99	4,541.29	9,365.55	24,603.86
Costs:								
Fixed and variable 1/	1,392.73	5,576.41	1,545.15	4,940.08	17,696.34	2,460.23	5,895.22	14,264.77
Home-grown feeds..	820.03	2,653.20	1,077.38	2,029.78	5,420.78	853.30	2,057.36	4,558.58
Family labor 2/..	513.15	462.60	582.60	577.20	1,350.00	135.00	105.00	837.00
Total	2,725.91	8,692.21	3,205.13	7,547.06	24,467.12	3,448.53	8,057.58	19,660.35
Gross revenue less total fixed and variable costs 1/..	2,082.80	5,412.85	2,292.08	4,654.37	13,304.65	2,081.06	3,470.33	10,339.09
Return on investment 3/	739.62	2,297.05	632.10	2,047.39	6,533.87	1,092.76	1,307.97	4,943.51
Percent return on investment	2.7	2.6	2.6	2.6	2.8	5.3	2.2	2.5

1/ Not including interest on investment.
2/ Family labor was valued at $1.50 per hour.
3/ Gross revenue less all fixed and variable costs (except interest on investment), value of family labor, and home-grown feed.

Table 10. Return on investment in beef-cow enterprises on wheat-livestock farms, using 1955-1965 average cattle prices and alternative hay-feeding periods

Item	Unit	Size classification for cropland							
		Up to 900 acres		901-1,550 acres			1,551 acres and over		
		Herd size		Herd size			Herd size		
		Small	Medium	Small	Medium	Large	Small	Medium	Large
Long feeding period: 1/									
Return on investment...	Dol.	645.45	2,094.27	559.51	1,555.95	6,064.15	686.99	712.65	2,474.43
Rate of return	Pct.	2.4	2.4	2.3	1.9	2.6	3.3	1.2	1.2
Average feeding period:									
Return on investment...	Dol.	749.80	2,307.00	632.10	2,047.39	7,533.87	1,092.76	1,271.97	5,043.51
Rate of return	Pct.	2.8	2.7	2.6	2.7	3.2	5.3	2.2	2.5
Short feeding period: 1/									
Return on investment ..	Dol.	951.61	3,060.13	877.03	2,592.41	10,149.89	1,340.48	1,775.76	6,521.47
Rate of return	Pct.	3.5	3.5	3.6	3.2	4.4	6.5	3.0	3.3

1/ The long feeding period was 151 days. The short period was 40% less than the average for each farm situation.

Table 11. Return on investment in beef-cow enterprises on wheat-livestock farms with alternative cattle prices 1/

Item	Unit	Size classification for cropland							
		Up to 900 acres		901-1,550 acres			1,551 acres and over		
		Herd size		Herd size			Herd size		
		Small	Medium	Small	Medium	Large	Small	Medium	Large
High price level: 1/									
Return on investment..	Dol.	1,412.13	4,418.56	1,350.22	3,904.56	13,519.94	1,933.37	3,090.20	9,751.63
Rate of return	Pct.	5.2	5.1	5.5	4.9	5.4	9.5	5.3	4.9
Average prices:									
Return on investment..	Dol.	749.57	2,307.00	632.10	2,047.39	7,533.87	1,092.76	1,271.97	5,043.51
Rate of return	Pct.	2.8	2.7	2.6	2.7	3.2	5.3	2.2	2.5
Low price level: 1/									
Return on investment..	Dol.	87.01	195.44	-86.02	190.10	1,547.80	232.15	-546.26	319.15
Rate of return	Pct.	.3	.2	--	.2	.7	.1	--	.2

1/ Calf prices 20% above and below the 1956-1965, 10-year average and cull cow prices 15% above and below the average for this same period.

for seven of the eight farms. The dollar return on investment was nearly twice as great with high prices as with average prices. Low prices brought an opposite effect of about the same magnitude.

Returns to additional investment

Total investment figures used to estimate rates of return included the value of all owned range. However, in many cases, range consisted of waste-land and was connected to or intermingled with the cropland in such a way that it could not be separated economically. This was true particularly on farms with small- and medium-size beef herds. In these cases, a more realistic rate of return would be obtained by relating it to additional investment associated with the addition of a cow-calf enterprise on the farm, excluding the investment in range (Table 12). Large herds were not included since range was required in such quantities that it could be operated as a separate unit from the cropland.

Rate of return on additional investment, when calculated in the manner outlined above, was considerably higher than when the value of range was included in total investment.

Fixed costs associated with range and hired labor

The value of a beef herd to wheat farmers with sufficient water and range resources may be considered in a different manner. Table 13 contains a summary of fixed costs related to owned rangeland on the farms with small- and medium-size herds. Since range could not be separated from the cropland, these costs had to be paid whether or not the range was used.

Table 12. Return on additional investment required for a beef-cow herd on wheat farms with sufficient range, Columbia Basin, Oregon, using 1955-1965 average cattle prices

Item	Unit	Size classification for cropland					
		Up to 900 acres		901-1,550 acres		1,551 acres and over	
		Herd size		Herd size		Herd size	
		Small	Medium	Small	Medium	Small	Medium
Additional investment 1/	Dol.	11,049.00	31,148.00	12,720.00	29,206.00	13,912.00	29,397.00
Return on investment	Dol.	749.80	2,307.00	632.10	2,047.39	2,538.65	1,271.97
Rate of return on investment	Pct.	6.8	7.4	5.0	7.0	7.9	4.3

1/ Value of beef herd and all facilities and equipment required.

Table 13. Fixed costs associatdd with rangeland on wheat-livestock farms, Columbia Basin, Oregon, with small- and medium-size beef-cow herds, 1963

Item	Size classification for cropland					
	Up to 900 acres		901-1,550 acres		1,551 acres and over	
	Herd size		Herd size		Herd size	
	Small	Medium	Small	Medium	Small	Medium
	$	$	$	$	$	$
Property tax	255.98	900.78	192.83	822.63	108.15	473.33
Interest on investment	793.50	2,792.25	597.75	2,550.00	335.25	1,467.25
Total	1,049.48	3,693.03	790.58	3,372.63	443.40	1,940.58

1/ In the absence of a cow-calf enterprise, these costs would have to be covered by revenue from crop enterprises on the associated cropland.

Table 14 shows the residual revenue accruing to the beef-cow enterprises after the value of all variable inputs except hired labor plus all fixed costs but those associated with rangeland were deducted from gross revenue. This residual revenue was the amount made available by the presence of a beef-cow herd which could be used to help pay the cost of full-time labor and fixed costs associated with the rangeland. The last row of figures in Table 14 is the revenue remaining after the value of hired labor in the cow-calf enterprise was deducted.

The extent to which a cow-calf enterprise paid fixed costs associated with noncropland or range on the farms is illustrated by comparing these values with total fixed costs associated with range in Table 13.

Conclusions

The cow-calf enterprise has found a place on many wheat farms in the Columbia Basin of Oregon. The extent of its contribution to the farming operation, however, has been varied. Some of the factors which make it a productive supplementary enterprise for wheat farms are:

1. Beef cows are capable of utilizing wasteland, aftermath from crops, and other forage existing on the farm or occurring as a by-product of other farm enterprises. In the absence of livestock most of this forage would go unused.

2. Labor which would otherwise be idle is frequently used on the cow-calf enterprise during slack seasons of crops. Possibly, it could mean the difference between having reliable full-time hired labor instead of seasonal help which is often difficult to find and less skilled. Careful planning can avoid most of the potential competition for the available labor between crop and livestock enterprises.

3. A financial contribution can be made to fixed costs associated with the farming operation or to family income.

Table 14. Residual revenue from beef-cow enterprises on wheat-livestock farms available to pay cost of full-time hired labor and fixed costs associated with rangeland, using 1955-1965 average cattle prices

Item	Size classification for cropland					
	Up to 900 acres		901-1,550 acres		1,551 acres and over	
	Herd size		Herd size		Herd size	
	Small	Medium	Small	Medium	Small	Medium
	$	$	$	$	$	$
Gross revenue	3,475.53	10,989.26	3,637.23	9,594.45	4,541.29	9,365.55
Fixed and variable costs associated with cow herd 1/	2,862.20	8,151.18	3,370.92	7,125.45	3,179.03	7,434.54
Residual revenue	613.33	2,838.08	266.31	2,469.00	1,362.26	1,931.01
Residual revenue minus value of hired labor used for cow herd	613.33	1,843.58	266.31	1,759.50	898.61	786.81

1/ All fixed and variable costs except hired labor and fixed costs associated with rangeland.

Possible negative factors associated with the cow-calf enterprise are:

1. Not all farmers have the management skills to make a cow-calf operation successful. Low calving percentages or light calf weights at weaning time due to poor management may result in financial losses at the end of the year.

2. The operator may find a conflict of interests between crop and livestock enterprises. A wide variety of unplanned crises demanding immediate attention may arise in regard to beef cows at a time when the farmer would rather be working with the crops.

3. Difficulties may arise in maintaining an adequate feed supply. Drought or extra long winters frequently make it necessary to purchase expensive feeds which in turn causes profits to fall.

Appendix Table 1. Average total investment in buildings and equipment for livestock enterprises on wheat-livestock farms, Columbia Basin, Oregon, 1963

Item	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	$	$	$	$	$	$	$	$
Brood cows	35	120	39	107	346	44	102	285
Buildings and improvements:								
Barn	1,114	1,114	1,114	1,528	3,056	1,114	1,114	1,528
Stock sheds ...	---	722	---	---	---	---	722	1,443
Corrals	78	156	78	156	546	78	156	546
Stock ponds ...	---	---	22	44	132	---	22	132
Fences.....	2,622	4,408	3,248	5,800	13,456	3,480	6,960	14,384
Well and pump...	218	436	436	436	873	436	436	873
Water troughs...	27	108	27	108	216	54	108	189
Total	4,059	6,944	4,925	8,072	18,279	5,162	9,518	19,095
Machinery and equipment:								
Sprayer	12	24	12	24	250	12	24	250
Stock racks for truck	10	20	10	20	120	10	20	120
Veterinary equipment	8	50	8	50	75	8	50	65
Squeeze chute ..	---	125	---	125	125	---	125	125
Total	30	219	30	219	570	30	219	560
Total investment..	4,089	7,163	4,955	8,291	18,849	5,192	9,737	19,655
Investment per cow in buildings and equipment.....	117	50	127	77	54	118	95	69

1/ A physical description was obtained for buildings and equipment on each farm. The most typical complement for each herd size was determined. Costs for these facilities were constructed from secondary data and were adjusted to represent the original new cost halfway depreciated.

Appendix Table 2. Production and inputs for a 35-cow beef herd on dryland wheat farms with 0-900 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	10	488	4,880	$21.10	$1,029.68
Steer calves	Head	15	505	7,575	22.87	1,732.40
Cull cows	Head	5	950	4,750	15.02	713.45
Total						$3,475.53

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	288		
Aftermath	AUM	116		
Hay, home-grown	Ton	33		
Salt and mineral	Cwt.	7	$ 2.70	$ 18.90
Veterinary service and supply	Head	35	2.10	73.50
Livestock tax 1/	Dol.			112.40
Utilities	Dol.			22.00
Repair and maintenance 2/	Dol.			204.45
Marketing fees 3/	Dol.			96.51
Miscellaneous 4/	Dol.			5.00
Machine use:				
Truck	Mile	60	.10	6.00
Pickup	Mile	500	.05	25.00
Tractor	Hour	12	1.85	22.20
Family labor	Hour	342.1	---	---
Bull replacement 5/	Dol.			196.00
Herd death loss 6/	Dol.			139.20
Interest on operating capital 7/	Dol.	907.45		27.21
Total variable costs				$ 948.37

Continued

Appendix Table 2. Production and inputs for a 35-cow beef herd on dryland wheat farms with 0-900 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Amount	Cost per unit	Value
Fixed inputs				
Property tax 8/	Dol.			$ 321.69
Depreciation on facilities	Dol.			122.67
Interest on investment 9/	Dol.			1,345.80
Total fixed costs				$1,790.16
Total fixed and variable costs				$2,738.53

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 2 years with a resale value of 65% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.

Appendix Table 3. Production and inputs for a 120-cow beef herd on dryland wheat farms with 0-900 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	35	414	14,490	$ 21.10	$3,057.39
Steer calves	Head	52	439	22,828	22.87	5,220.76
Cull cows	Head	19	950	18,050	15.02	2,711.11
Total						$10,989.26

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	1,080		
Range, leased	AUM	134	10/	213.17
Aftermath	AUM	140		
Hay, home-grown	Ton	123		
Salt and mineral	Cwt.	24	2.70	64.80
Veterinary service and supply	Head	120	1.80	216.00
Livestock tax 1/	Dol.			387.36
Utilities	Dol.			138.00
Repair and maintenance 2/	Dol.			358.15
Marketing fees 3/	Dol.			307.40
Miscellaneous 4/	Dol.			55.00
Machine use:				
Truck	Mile	2,600	.10	260.00
Pickup	Mile	5,000	.05	250.00
Tractor	Hour	70	1.85	129.50
Family labor	Hour	308.4		
Hired labor	Hour	663	1.50	994.50
Bull replacement 5/	Dol.			360.00

Continued

Appendix Table 3. Production and inputs for a 120-cow beef herd on dryland wheat farms with 0-900 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Amount	Cost per unit	Value
Herd death loss 6/	Dol.			$ 479.70
Interest on operating capital 7/	Dol.	4,389.07		132.25
Total variable costs				$4,345.83
Fixed inputs				
Property tax 8/	Dol.			$1,015.69
Depreciation on facilities	Dol.			214.89
Interest on investment 9/	Dol.			4,349.65
Total fixed costs				$5,580.23
Total fixed and variable costs				$9,926.06

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

Yardage	.50
Brand inspection	.30
Beef council	.10

Commission	
Percent of sales	Value of sales
4	0-500
3	501-2,000
2	2,000-10,000
$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding and so forth.
5/ Bulls are kept 3 years with a resale value of 60% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 474 acres leased at 0.45 cents per acre.

Appendix Table 4. Production and inputs for a 39-cow beef herd on dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	12	448	5,376	$21.10	$1,134.34
Steer calves	Head	17	475	8,075	22.87	1,846.75
Cull cows	Head	6	950	5,700	15.02	856.14
Total						$3,837.23

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	243		
Aftermath	AUM	201		
Hay, home-grown	Ton	40		
Salt and mineral	Cwt.	7.8	2.70	21.06
Veterinary service and supply	Head	39	2.10	81.90
Livestock tax 1/	Dol.			125.40
Utilities	Dol.			78.00
Repair and maintenance 2/	Dol.			247.75
Marketing fees 3/	Dol.			108.24
Miscellaneous 4/	Dol.			6.00
Machine use:				
Truck	Mile	210	.10	21.00
Pickup	Mile	1,000	.05	50.00
Tractor	Hour	20	1.85	37.00
Family labor	Hour	388.4		
Bull replacement 5/	Dol.			196.00
Herd death loss 6/	Dol.			155.30
Interest on operating capital 7/	Dol.	1,016.70		30.50
Total variable costs				$1,158.15

Continued

Appendix Table 4. Production and inputs for a 39-cow beef herd on dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Amount	Cost per unit	Value
Fixed inputs				
Property tax 8/....	Dol.			240.35
Depreciation on facilities	Dol.			146.64
Interest on investment 9/	Dol.			1,233,75
Total fixed costs				$1,620.75
Total fixed and variable costs				$2,778.90

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

Yardage	.50
Brand inspection	.30
Beef council	.10

Commission	
Percent of sales	Value of sales
4	0-500
3	501-2,000
2	2,000-10,000
$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 2 years with a resale value of 65% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.

Appendix Table 5. Production and inputs for a 107-cow beef herd on dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	31	430	13,330	$21.10	$2,812.63
Steer calves	Head	45	451	20,295	22.87	4,641.47
Cull cows	Head	15	950	14,250	15.02	2,140.35
Total						$9,594.45

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	1,007		
Range, leased	AUM	112	10/	162.90
Aftermath	AUM	181		
Hay, home-grown	Ton	89		
Salt and mineral	Cwt.	21.43	2.70	57.86
Veterinary service and supply	Head	107	1.80	192.60
Livestock tax 1/	Dol.			337.78
Utilities	Dol.			141.00
Repair and maintenance 2/	Dol.			414.55
Marketing fees 3/	Dol.			273.78
Miscellaneous 4/	Dol.			20.00
Machine use:				
Truck	Mile	2,700	.10	270.00
Pickup	Mile	4,200	.05	210.00
Tractor	Hour	60	1.85	111.00
Family labor	Hour	384.8		
Hired labor	Hour	473	1.50	709.50
Bull replacement 5/	Dol.			300.00
Herd death loss 6/	Dol.			418.30
Interest on operating capital 7/	Dol.	3,856.75		116.31
Total variable costs				$3,735.58

Appendix Table 5. Production and inputs for a 107-cow beef herd on dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Value
Fixed inputs		
Property tax 8/	Dol.	955.77
Depreciation on facilities	Dol.	248.73
Interest on investment 9/	Dol.	4,010.30
Total fixed costs		$ 5,214.80
Total fixed and variable costs		$ 8,950.38

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 3 years with a resale value of 60% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 362 acres leased at 0.45 cents per acre.

Appendix Table 6. Production and inputs for a 346-cow beef herd on dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	100	419	41,900	$21.10	$ 8,840.90
Steer calves	Head	150	438	65,700	22.87	15,025.59
Cull cows	Head	50	950	47,500	15.02	7,134.50
Total						$31,000.99

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	3,569		
Range, leased	AUM	321	10/	1,372.95
Aftermath	AUM	131	---	---
Hay, home-grown	AUM	212	---	---
Hay, purchased	Ton	111	25.00	2,775.00
Salt and mineral	Cwt.	69.2	2.70	186.84
Veterinary service and supply	Head	346	1.20	415.20
Livestock tax 1/	Dol.			1,085.76
Utilities	Dol.			409.00
Repair and maintenance 2/	Dol.			942.45
Marketing fees 3/	Dol.			870.00
Miscellaneous 4/	Dol.			85.00
Machine use:				
Truck	Mile	8,000	.12	960.00
Pickup	Mile	14,000	.05	700.00
Tractor	Hour	115	1.85	212.75
Family labor	Hour	900		
Hired labor	Hour	1,085.7	1.50	1,628.55
Bull replacement 5/	Dol.			675.00
Herd death loss 6/	Dol.			1,344.60
Interest on operating capital 7/	Dol.	14,305.14		429.15
Total variable costs				$14,092.25

Appendix Table 6. Production and inputs for a 346-cow beef herd in dryland wheat farms with 901-1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Value
Fixed inputs		
Property tax 8/	Dol.	2,661.64
Depreciation on facilities	Dol.	942.45
Interest on investment 9/	Dol.	11,617.20
Total fixed costs		$ 15.221.29
Total fixed and variable costs		$ 29,313.54

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 4 years with a resale value of 60% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 3,051 acres leased at 0.45 cents per acre.

Appendix Table 7. Production and inputs for a 44-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	12	485	5,820	$21.10	$ 1,228.02
Steer calves	Head	20	506	10,120	22.87	2,314.44
Cull cows	Head	7	950	6,650	15.02	998.83
Total						$ 4,541.29

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	174		
Range, leased	AUM	121	10/	138.15
Aftermath	AUM	285	---	
Hay, home-grown	Ton	23		
Hay, purchased	Ton	9	25.00	225.00
Salt and mineral	Cwt.	8.8	2.70	23.76
Veterinary service and supply	Head	44	2.10	92.40
Livestock tax 1/	Dol.			140.83
Utilities	Dol.			64.00
Repair and maintenance 2/	Dol.			259.60
Marketing fees 3/	Dol.			125.92
Miscellaneous 4/	Dol.			18.00
Machine use:				
Truck	Mile	185	.12	22.20
Pickup	Mile	1,250	.05	62.50
Tractor	Hour	27	1.85	49.95
Family labor	Hour	90		
Hired labor	Hour	309.1	1.50	463.65
Bull replacement 5/	Dol.			196.00
Herd death loss 6/	Dol.			174.40
Interest on operating capital 7/	Dol.	1,877.74		56.33
Total variable costs				$ 2,112.69

Continued

Appendix Table 7. Production and inputs for a 44-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Value
Fixed inputs		
Property tax 8/	Dol.	191.78
Depreciation on facilities	Dol.	155.76
Interest on investment 9/	Dol.	1,030.85
Total fixed costs		$ 1,378.39
Total fixed and variable costs		$ 3,491.08

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 2 years with a resale value of 65% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 307 acres leased at 0.45 cents per acre.

Appendix Table 8. Production and inputs for a 102-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	30	440	13,200	$21.10	$ 2,785.20
Steer calves	Head	43	466	20,038	22.87	4,582.69
Cull cows	Head	14	950	13,300	15.02	1,997.66
Total						$ 9,365.55

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	496		
Range, leased	AUM	439	10/	793.80
Aftermath	AUM	372		
Hay, home-grown	Ton	79		
Salt and mineral	Cwt.	20.4	2.70	55.08
Veterinary service and supply	Head	102	1.80	183.60
Livestock tax 1/	Dol.			317.51
Utilities	Dol.			120.00
Repair and maintenance 2/.....	Dol			486.85
Marketing fees 3/.....	Dol.			265.91
Miscellaneous 4/	Dol.			78.00
Machine use:				
Truck	Mile	3,200	.12	384.00
Pickup	Mile	4,000	.05	200.00
Tractor	Hour	58	1.85	107.30
Family labor	Hour	70		
Hired labor	Hour	762.8	1.50	1,144.20
Bull replacement 5/	Dol.			300.00
Herd death loss 6/	Dol.			393.20
Interest on operating capital 7/..	Dol.	4,766.90		143.01
Total variable costs				$ 4,972.46

Continued

Appendix Table 8. Production and inputs for a 102-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Value
Fixed inputs		
Property tax 8/	Dol.	630.65
Depreciation on facilities	Dol.	292.11
Interest on investment 9/	Dol.	2,939.10
Total fixed costs		$ 3,861.86
Total fixed and variable costs		$ 8,834.32

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 3 years with a resale value of 60% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 1,764 acres leased at 0.45 cents per acre.

Appendix Table 9. Production and inputs for a 285-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963

Production	Unit	Number	Average weight	Total weight	Price/cwt.	Value
			Lbs.	Lbs.		
Heifer calves	Head	82	385	31,540	$21.10	$ 6,654.94
Steer calves	Head	124	414	51,336	22.87	11,740.54
Cull cows	Head	43	960	41,280	15.03	6,204.38
Total						$ 24,599.86

Annual inputs	Unit	Amount	Cost per unit	Value
Variable inputs				
Range, owned	AUM	1,994		
Range, leased	AUM	898	10/	$ 1,242.00
Aftermath	AUM	941		
Hay, home-grown	Ton	158		
Hay, purchased	Ton	43	25.00	1,075.00
Salt and mineral	Cwt.	57	2.70	153.90
Veterinary service and supply	Head	285	1.20	342.00
Livestock tax 1/.....	Dol.			911.34
Utilities	Dol.			400.00
Repair and maintenance 2/	Dol.			982.75
Marketing fees 3/.....	Dol.			722.10
Miscellaneous 4/	Dol.			130.30
Machine use:				
Truck	Mile	4,500	.12	540.00
Pickup	Mile	6,000	.05	300.00
Tractor	Hour	68	1.85	125.80
Family labor	Hour	558		
Hired labor	Hour	1,304.4	1.50	1,956.60
Bull replacement 5/.....	Dol.			630.00
Herd death loss 6/	Dol.			1,128.60
Interest on operating capital 7/.....	Dol.	11,188.16		335.26
Total variable costs				$ 10,975.65

Continued

Appendix Table 9. Production and inputs for a 285-cow beef herd on dryland wheat farms with over 1,550 acres of cropland, Columbia Basin, Oregon, 1963 (Continued)

Annual inputs	Unit	Value
Fixed inputs		
Property tax 8/	Dol.	2,306.37
Depreciation on facilities	Dol.	982.75
Interest on investment 9/	Dol.	9,975.25
Total fixed costs		$ 13,264.37
Total fixed and variable costs		$ 24,240.02

1/ Twenty-five percent of herd inventory with a 64.5 mill tax levy.
2/ Estimated at 5% of total investment in these items.
3/ Marketing fees:

		Commission	
		Percent of sales	Value of sales
Yardage	.50	4	0-500
Brand inspection	.30	3	501-2,000
Beef council	.10	2	2,000-10,000
		$2.00/head	Over 10,000

4/ Accounting fees, tax preparation, feed grinding, and so forth.
5/ Bulls are kept 4 years with a resale value of 60% of the inventory price.
6/ Based on a 2% death loss.
7/ Six percent of cash costs for 6 months.
8/ Figured on the same basis as livestock tax.
9/ Based on a 5% interest rate.
10/ Based on 2,860 acres leased at 0.45 cents per acre.

Appendix Table 10. Requirements per cow, by operation and herd size, on dryland wheat farms in the Columbia Basin, Oregon, 1963

Operation 1/	Size classification for cropland							
	Up to 900 acres		901-1,550 acres			1,551 acres and over		
	Herd size		Herd size			Herd size		
	Small	Medium	Small	Medium	Large	Small	Medium	Large
	Hours	Hours	Hours	Hours	Hours	Hours	Hours	Hours
Feeding	5.577	4.168	5.848	3.328	2.866	4.000	3.150	2.922
Calving	.500	.400	.546	.527	.418	.726	.499	.380
Branding	.349	.350	.328	.340	.298	.510	.416	.389
Spraying	.200	.133	.189	.101	.083	.285	.165	.199
Checking on pasture	2.648	2.676	2.572	3.021	1.772	2.972	3.079	2.032
Roundup	---	.035	---	.349	.300	---	.499	.532
Selling	.500	.333	.476	.351	.002	.578	.357	.207
Total	9.774	8.095	9.959	8.017	5.739	9.071	8.165	6.661

1/ The time periods on hay and pasture are shown in Figure 3. Typical timing of other operations over all farms were as follows:

Calving - January 20 to April 1
Branding - April 1 to May 15
Spraying - June 1 to July 31
Roundup - September 20 to November 15
Selling - September 20 to December 31.