

Figuring Cattle Feeding Profits For Eastern Oregon

L. T. Wallace

Emery Castle



~~UNIVERSITY OF OREGON~~
~~LIBRARY~~

Miscellaneous Paper 33

Agricultural Experiment Station

December 1956

• Oregon State College

• Corvallis

FIGURING CATTLE FEEDING PROFITS FOR EASTERN OREGON

by

L. T. Wallace and E. N. Castle *

Summary

This publication presents a method of figuring cattle feeding profits. Because of the increase in feed grains in eastern Oregon, ranchers are giving more thought to feeding possibilities. The construction of budgets permits a rancher to estimate how much feeding will affect his income, as well as the resources required for feeding.

To illustrate how the method works, three counties were selected in eastern Oregon -- Baker, Grant, and Umatilla. They were selected because their feed potential is high.

The profitability of cow-calf, cow-yearling, and cow-feedlot systems were compared in each county. The cattle systems are defined as follows: Cow-calf--calves are sold in the fall as weaners; Cow-yearling--offspring are sold as yearlings; Cow-feedlot--calves are put into the feedlot in the fall as weaners, fed for a maximum rate of gain, and sold as slaughter animals at 800 to 1100 pounds.

Figures used in this report are averages. Consequently, the results are examples of what might be expected under similar conditions. The three cattle systems are practiced in all three areas, and the counties selected provide a wide range in conditions. In Grant County, cattle are the main source of income. In Umatilla, wheat is more important. Baker is more diversified, producing both wheat and cattle.

* Authors are formerly Research Assistant and Assistant Agricultural Economist, respectively, Oregon Agricultural Experiment Station. Special credit is due W. B. Back, formerly Assistant Agricultural Economist, for assistance in planning and developing the study. Ranchers and Extension personnel also were helpful in supplying information and advice.

The cow-feedlot system was the most profitable in all three areas. However, the feeder system also increased expenses and capital investments. Little difference in income was found between the cow-calf and cow-yearling system. Probably the most profitable system would vary from year to year depending on the relative prices of calves and yearlings. A cow-feedlot operation is not practical for every rancher. Some may not like to feed cattle, others will not want to take on additional risk. Not everyone can feed cattle to a market finish well, and some would have to go into debt to establish a feeding operation. But, for those who can meet the requirements, it may be a profitable means of increasing the size of farm or ranch business.

Practices and Resources

Baker County has mountain range, desert, forest, and small, highly productive valleys. The county is high in elevation and comparatively dry. Winters are cold and summers are warm.

Baker raises hay and grain and has access to range. The range consists of privately owned land, as well as public land under the control of both the Bureau of Land Management and the Forest Service.

Hay usually is stacked loose or baled. Irrigation is common. Calving dates vary from ranch to ranch and depend partly on the ranch's geographic location. Home-grown feeds usually are used. Winter feeding dates vary within the county depending on ranch location.

Much of this description of Baker County also applies to Grant. Umatilla is mainly a grain-producing area. Irrigation in the wheat area is much less common than in either Baker or Grant Counties. Since cattle are less important than in Baker and Grant, investment in livestock

facilities is lower. On the other hand, machinery investment is considerably greater.

The Budgets

In building budgets it is necessary to make certain assumptions about ranching operations. Certain things are held constant while cattle operations are studied. Many of the assumptions, however, will not greatly affect the comparison between cattle systems. Some of these assumptions used in the following budgets are:

1. A 20 per cent cow replacement.
2. A 2 per cent death loss.
3. Additional grazing permits usually are not available, so they were considered to limit further increases in herd size. The permits used were Baker, 135 head; Grant, 250 head; Umatilla, 40 head.
4. 1954 prices and costs.
5. Current management practices in the three counties.

When these assumptions are used, there is a definite income advantage in favor of the cow-feedlot operation. This comparison is shown in figure 1. There is little difference between the income of the cow-calf and cow-yearling operation. A small change in price could easily reverse this relationship.

The increased income from feeding is impressive. It is large in all counties, but much greater in Grant than in others. Feeding will require more capital, more labor, and better management. These increases in requirements are shown in table 1. In Grant County, 168 acres of additional cropland would be needed to provide feed. More capital would be required

in all counties, ranging from about \$24,000 in Grant to \$1,665 in Umatilla. In Umatilla County, the enterprise was so small that no important increase in labor would be required. Additional labor of about 430 hours in Baker and over 1,000 hours in Grant would be needed. Many ranchers might be able to use their existing labor supply more intensively if they would take on a feeding operation. Additional feed would be needed in all counties to produce the increased pounds of salable beef. Some ranches already have some of the needed equipment for a feedlot operation, while others must start from scratch. Some ranchers, of course, are not in a position to acquire the necessary additional resources for feeding. Others would not be willing to take on the increased risk that comes with the larger cattle operation. On the basis of the figures used, it appears that an opportunity may exist for expanded cattle production by feeding in the area. In addition, utilization of byproduct feeds, such as peavine silage and wheat straw and chaff, may provide feeding opportunities in an area such as Umatilla County.

In tables 2 through 7, a detailed breakdown of the budgets will be found. Since the budgets probably will not fit most ranches exactly, they can be used as a guide. Just substitute your figures for those shown.

How Budgets Were Developed

A budget is a financial plan for a ranch or farm. To "build" the budgets in this report, management practices and resource information were obtained from typical ranchers in the three areas. Detailed production requirements, costs, and income are available from the Department of Agricultural Economics, Oregon State College. Particular emphasis was focused on changes that would occur in going from one beef system to

another; less emphasis was given to those items that remained constant for all systems.

Those who are not familiar with budgets and how they are constructed should study tables 2 and 3. Building a budget consists of a number of steps. First, decide what it is you wish to compare. (In this case, cattle systems.) Next, list the resources at your disposal. (Take an inventory.) Then decide just how much land, capital, labor, etc., each system will take. By applying prices and costs to these items, you can arrive at an estimated expense and income. The top half of table 2 is devoted to the land, buildings, livestock, labor, machinery, and production that might be expected for the different systems. The bottom half shows income and expenses.

Figure 1. Net Incomes From Cow-Calf, Cow-Yearling, and Cow-Feedlot Operations in Baker, Grant, and Umatilla Counties

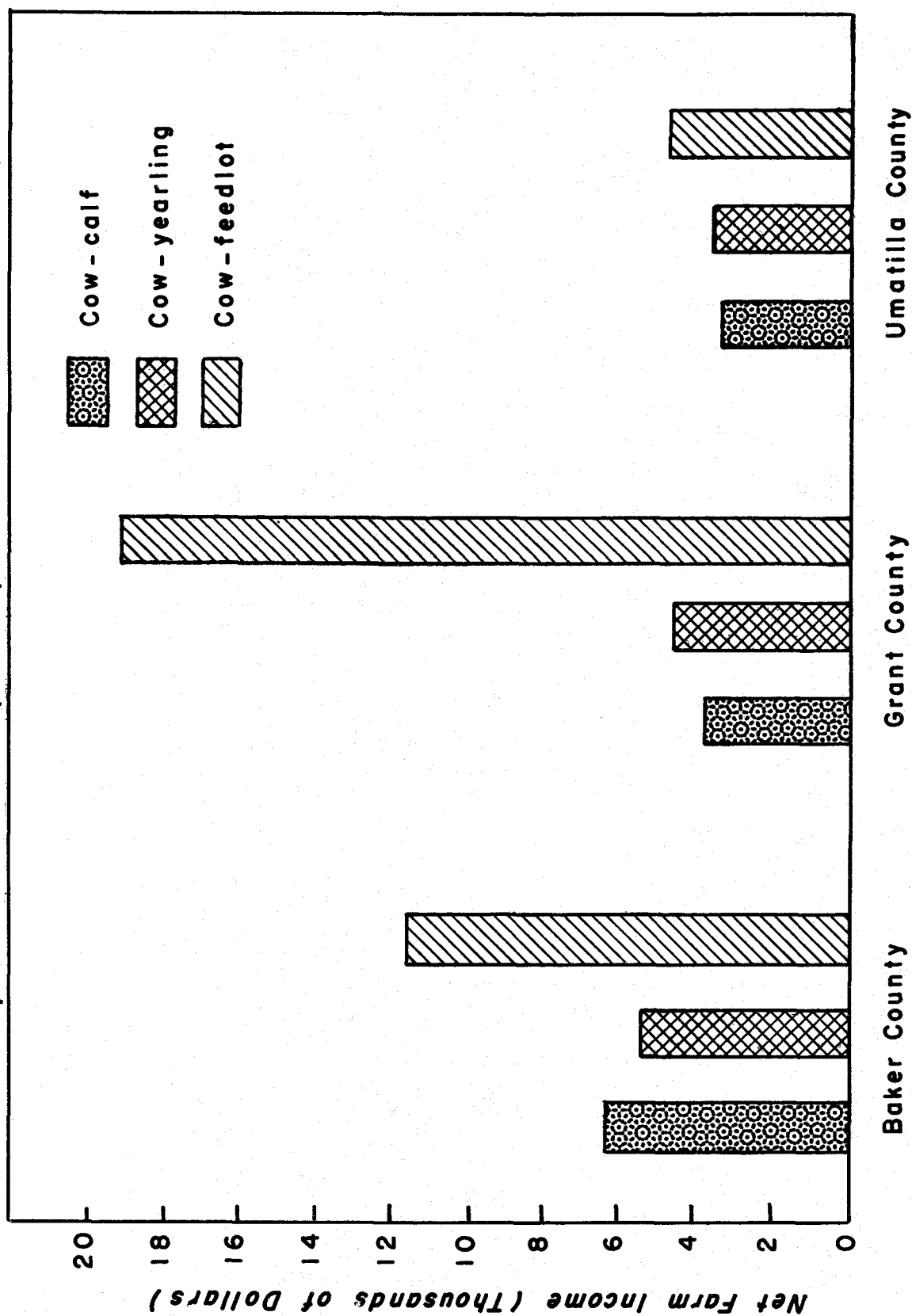


Table 1. Increase in Resources Required for Changing from a Cow-Calf to a Cow-Feeder Operation

Resource	Baker County	Grant County	Umatilla County
Cropland (acres)----	0	168	0
Capital (dollars)---	13,945	24,002	1,665
Labor (hours)-----	432	1,026	0
<u>Home-grown Feed</u>			
Hay (tons)-----	57	75	28
Barley (bushels)----	1,500	2,542	240
Oats (bushels)-----	1,870	2,924	400
Wheat (bushels)-----	-	-	-
<u>Livestock</u>			
Number-----	91	173	20
Animal units-----	55	104	11
Pounds-----	53,100	96,750	8,150

Table 2. Baker County Budgets.

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Land Use</u>			
Rangeland: Owned (acres)-----	1,500	1,500	1,500
Leased (acres)-----	3,000	3,000	3,000
Hay: Irrigated (acres)-----	225	225	225
Nonirrigated (acres)-----	-	-	-
Pasture: Irrigated (acres)-----	220	220	220
Nonirrigated (acres)-----	600	600	390
Other cropland: Nonirrigated			
Barley (acres)-----	100	100	200
Oats (acres)-----	-	-	110
Wheat (acres)-----	-	-	-
Other (idle, waste, homestead)(acres)	20	20	20
Total acres-----	5,665	5,665	5,665
<u>Buildings</u>			
Sheds (No.)-----	2	2	4
Fences (miles)-----	24	30	24
Feeding facilities (dollars)-----	-	-	2,000
<u>Livestock</u>			
Beef cows (No.)-----	130	80	130
Beef calves (No.)-----	118	72	118
Yearling steers (No.)-----	2	36	59
Yearling heifers (No.)-----	25	36	59
Bulls (No.)-----	5	3	5
Miscellaneous (horses, cows) (No.)--	7	7	7
Total animals (No.)-----	287	234	378
<u>Labor</u>			
Hired (hours)-----	3,564	3,564	3,996
Operator (hours)-----	2,700	2,700	2,700
Total labor (hours)-----	6,264	6,264	6,696
<u>Machinery</u>			
Present value (dollars)-----	8,653.66	8,653.66	9,613.66
<u>Production</u>			
Hay (tons)-----	715	715	772
Grain			
Barley (bushels)-----	1,550	1,550	3,100
Oats (bushels)-----	-	-	1,870
Wheat (bushels)-----	-	-	-
Beef (pounds)-----	50,150	48,600	103,250

Table 2. (Continued).

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Sales</u>			
Hay-----	\$ 6,300.00	\$ 6,400.00	\$ 2,400.00
Grain-----	999.00	999.00	675.00
Beef			
Cull cows-----	3,168.00	2,592.00	3,168.00
Calves-----	7,312.59	-	-
Yearling steers-----	-	4,536.00	12,789.00
Yearling heifers-----	-	1,768.00	7,080.50
Bulls-----	504.00	252.00	504.00
<u>Gross Farm Income</u> -----	\$18,283.59	\$16,547.00	\$26,616.50
<u>Direct Expenses</u>			
Hired labor-----	\$ 3,180.00	\$ 3,180.00	\$ 3,420.00
Equipment operations-----	1,043.03	1,046.13	1,678.81
Veterinary-----	287.00	234.00	378.00
Feed			
Salt, Minerals-----	25.00	20.00	75.00
Grain-----	50.00	30.00	1,300.00
Livestock			
Bulls-----	1,000.00	500.00	1,000.00
Constant cash costs-----	1,893.00	1,893.00	1,893.00
<u>Total Direct Expenses</u> -----	\$ 7,478.03	\$ 6,903.13	\$ 9,744.81
<u>Indirect Expenses</u>			
Taxes-----	\$ 1,000.00	\$ 995.00	\$ 1,060.00
Depreciation-----	3,604.85	3,309.01	3,769.85
Interest			
Feed-----	-	1.75	91.00
Livestock-----	-	70.00	-
Machinery-----	-	-	50.00
Buildings-----	-	75.00	250.00
<u>Total Indirect Expense</u> -----	\$ 4,604.85	\$ 4,307.26	\$ 5,220.85
<u>Total Expenses</u> -----	\$12,082.88	\$11,210.39	\$14,965.66
<u>Comparative Net Farm Income</u> -----	\$ 6,200.71	\$ 5,336.61	\$11,650.84

Table 3. Baker County Ranch Summary Comparisons.

Item	Total investment			Changes in investment from cow-calf to:--	
	Cow-calf	Cow-yearling	Cow-feedlot	Cow-yearling	Cow-feedlot
Land (acres)-----	5,665	5,665	5,665	0	0
Buildings, fences, feeding facilities (dollars)-----	30,000	31,500	35,000	1,500	5,000
Machinery (dollars)-----	8,653.66	8,653.66	9,613.66	0	960
Livestock (dollars)-----	21,620	18,140	29,185	-3,480	7,565
(No.)-----	287	234	378	-53	91
(animal units)-----	161	135	216	-26	55
(pounds)-----	50,150	48,600	103,250	-1,550	53,100
Feed:					
Hay (tons)-----	715	715	772	0	57
Barley (bushels)-----	1,550	1,550	3,100	0	1,500
Oats (bushels)-----	-	-	1,870	-	1,870
Wheat (bushels)-----	-	-	-	-	-
Supplies (dollars)-----	1,450	1,450	1,870	0	420
Labor (hours)-----	6,264	6,264	6,696	0	432
Net farm income (dollars)-----	6,200.71	5,336.61	11,650.84	-864.10	5,450.13

Table 4. Grant County Budgets.

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Land Use</u>			
Rangeland: Owned (acres)-----	1,000	1,000	1,000
Leased (acres)-----	7,500	7,500	7,500
Hay: Irrigated (acres)-----	400	400	400
Nonirrigated (acres)-----	-	-	-
Pasture: Irrigated (acres)-----	100	100	100
Nonirrigated (acres)-----	-	-	-
Other cropland: Nonirrigated			
Barley (acres)-----	50	50	132
Oats (acres)-----	-	-	86
Wheat (acres)-----	0	-	-
Other(idle,waste,homestead)(acres)---	20	20	20
Total acres-----	9,170	9,170	9,338
<u>Buildings</u>			
Sheds (No.)-----	3	3	7
Fences (miles)-----	40	46	40
Feeding facilities (dollars)-----	-	-	3,000
<u>Livestock</u>			
Beef cows (No.)-----	238	128	238
Beef calves (No.)-----	215	115	215
Yearling steers (No.)-----	2	57	108
Yearling heifers (No.)-----	40	58	107
Beef bulls (No.)-----	12	7	12
Miscellaneous(horses,milk cows),(No.)	7	7	7
Total animals (No.)-----	514	372	687
<u>Labor</u>			
Hired (hours)-----	3,672	3,672	4,698
Operator (hours)-----	2,700	2,700	2,700
Total labor (hours)-----	6,372	6,372	7,398
<u>Machinery</u>			
Present value (dollars)-----	11,386.16	11,386.16	12,346.16
<u>Production</u>			
Hay (tons)-----	800	800	875
Grain			
Barley (bushels)-----	1,500	1,500	4,092
Oats (bushels)-----	-	-	2,924
Wheat (bushels)-----	-	-	-
Beef (pounds)-----	91,375	77,625	188,125

Table 4. (Continued).

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Sales</u>			
Hay-----	-	\$ 4,740	-
Grain-----	\$ 675	-	-
Beef			
Cull Cows-----	6,048	3,312	\$ 6,048
Calves-----	13,131.21	-	-
Yearling steers-----	-	7,056	23,593.50
Yearling heifers-----	-	3,536	12,286.75
Bulls-----	1,008	504	1,008
<u>Gross Farm Income</u> -----	\$20,862.21	\$19,148.00	\$42,936.25
<u>Direct Expenses</u>			
Hired labor-----	\$ 3,780	\$ 3,780	\$ 4,770
Equipment operations-----	763.57	763.57	2,132.96
Veterinary-----	299	257	472
Feed			
Salt minerals-----	75	64	118
Grain-----	100	75	2,400
Livestock			
Bulls-----	2,000	1,000	2,000
Constant cash costs-----	2,904	2,904	3,744
<u>Total Direct Expenses</u> -----	\$ 9,921.57	\$ 8,843.57	\$15,636.96
<u>Indirect Expenses</u>			
Taxes-----	\$ 1,500	\$ 1,475	\$ 1,900
Depreciation-----	5,496.54	4,700.69	5,736.54
Interest			
Feed-----	-	+ 2.52	164.01
Livestock-----	-	+ 175	-
Machinery-----	-	-	50
Buildings-----	-	75	400
<u>Total Indirect Expense</u> -----	\$ 6,996.54	\$ 6,073.17	\$ 8,250.55
<u>Total Expenses</u> -----	\$16,918.11	\$14,916.74	\$23,887.51
<u>Comparative Net Farm Income</u> -----	\$ 3,944.10	\$ 4,231.26	\$19,048.74

Table 5. Grant County Ranch Summary Comparisons.

Item	Total investment			Changes in investment from cow-calf to:--	
	Cow-calf	Cow-yearling	Cow-feedlot	Cow-yearling	Cow-feedlot
Land (acres)-----	9,170	9,170	9,338	0	168
Buildings, fences, feeding facilities (dollars)-----	53,000	54,500	61,000	1,500	8,000
Machinery (dollars)-----	11,386.16	11,386.16	12,346.16	0	960
Livestock (dollars)-----	39,820	29,685	54,190	-10,135	14,370
(No.)-----	514	372	687	-142	173
(animal units)-----	286	214	390	-72	104
(pounds)-----	91,375	77,625	188,125	-13,750	96,750
Feed:					
Hay (tons)-----	800	800	875	0	75
Barley (bushels)-----	1,550	1,550	4,092	0	2,542
Oats (bushels)-----	-	-	2,924	-	2,924
Wheat (bushels)-----	-	-	-	-	-
Supplies (dollars)-----	1,700	1,700	2,372	0	672
Labor (hours)-----	6,372	6,372	7,398	0	1,026
Net Farm Income (dollars)-----	2,792.10	4,231.26	19,048.74	1,439.16	16,256.64

Table 6. Umatilla County Budgets.

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Land Use</u>			
Rangeland: Owned (acres)-----	1,500	1,500	1,500
Leased (acres)-----	-	-	-
Hay: Irrigated (acres)-----	-	-	-
Nonirrigated (acres)-----	44	44	44
Pasture: Irrigated (acres)-----	-	-	-
Nonirrigated (acres)-----	-	-	-
Other cropland: Nonirrigated			
Barley (acres)-----	424	424	404
Oats (acres)-----	-	-	20
Wheat (acres)-----	702	702	702
Other(idle,waste, homestead)(acres)---	110	110	110
Total acres-----	2,780	2,780	2,780
<u>Buildings</u>			
Sheds (No.)-----	4	4	5
Fences (miles)-----	20	20	20
Feeding facilities (dollars)-----	-	-	1,000
<u>Livestock</u>			
Beef cows (No.)-----	29	22	29
Beef calves (No.)-----	26	20	26
Yearling steers (No.)-----	-	10	13
Yearling heifers (No.)-----	6	10	13
Bulls (No.)-----	1	1	1
Miscellaneous(horses,milk cows)(No.)	4	4	4
Total animals (No.)-----	66	67	86
<u>Labor</u>			
Hired (hours)-----	1,782	1,782	1,782
Operator (hours)-----	2,700	2,700	2,700
Total labor (hours)-----	4,482	4,482	4,482
<u>Machinery</u>			
Present value (dollars)-----	12,685.64	12,685.64	12,685.64
<u>Production</u>			
Hay (tons)-----	58	64	86
Grain			
Barley (bushels)-----	5,088	5,088	4,848
Oats (bushels)-----	-	-	400
Wheat (bushels)-----	7,020	7,020	7,020
Beef (pounds)-----	9,500	10,200	17,650

Table 6. (Continued)

Item	Cow-calf	Cow-yearling	Cow-feedlot
<u>Sales</u>			
Hay-----	-	-	-
Grain-----	\$17,270.84	\$17,243.40	\$16,240.86
Beef			
Cull cows-----	720	576	720
Calves-----	1,572.60	-	-
Yearling steers-----	-	1,260	2,866.50
Yearling heifers-----	-	552	1,457.75
Bulls-----	-	-	-
<u>Gross Farm Income</u> -----	\$19,563.44	\$19,631.90	\$21,285.11
<u>Direct Expenses</u>			
Hired labor-----	\$ 1,830	\$ 1,830	\$ 1,830
Equipment operations-----	7,295.33	7,302.13	7,334.22
Veterinary-----	66	67	86
Feed			
Salt, minerals-----	20	25	40
Grain-----	100	100	400
Livestock			
Bulls-----	-	-	-
Constant cash costs-----	2,114.82	2,114.82	2,114.82
Total Direct Expenses-----	\$11,426.15	\$11,438.95	\$11,805.04
<u>Indirect Expenses</u>			
Taxes-----	\$ 1,390	\$ 1,390	\$ 1,400
Depreciation-----	3,280.84	3,280.84	3,344.34
Interest			
Feed-----	-	.35	16
Livestock-----	-	-	-
Machinery-----	-	-	-
Buildings-----	-	-	75
Total Indirect Expense-----	\$ 4,670.84	\$ 4,671.19	\$ 4,835.34
<u>Total Expenses</u> -----	\$16,087.99	\$16,101.14	\$16,740.38
<u>Comparative Net Farm Income</u> -----	\$ 3,465.45	\$ 3,520.76	\$ 4,644.73

Table 7. Umatilla County Ranch Summary Comparisons.

Item	Total investment			Changes in investment from cow-calf to:--	
	Cow-calf	Cow-yearling	Cow-feedlot	Cow-yearling	Cow-feedlot
Land (acres)-----	2,780	2,780	2,780	0	0
Buildings, fences, feeding facilities (dollars)-----	24,500	24,500	24,500	0	0
Machinery (dollars)-----	12,685.64	12,685.64	12,685.64	0	0
Livestock (dollars)-----	5,005	5,300	6,670	295	1,665
(No.)-----	66	67	86	1	20
(animal units)-----	39	38	50	-1	11
(pounds)-----	9,500	10,200	17,650	700	8,150
Feed:					
Hay (tons)-----	58	64	86	6	28
Barley (bushels)-----	5,088	5,088	4,848	0	-240
Oats (bushels)-----	-	-	400	-	400
Wheat (bushels)-----	7,020	7,020	7,020	0	0
Supplies (dollars)-----	5,472.50	5,472.50	5,472.50	0	0
Labor (hours)-----	4,482	4,482	4,482	0	0
Net Farm Income (dollars)-----	3,465.45	3,520.76	4,644.73	55.31	1,116.29