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**DAIRY HERD PROFITABILITY:  
EFFECTS OF MILK YIELD AND COST  
OF PRODUCTION ON NET RETURNS**

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**Summary**

Dairy cow herd enterprise records from Kansas Farm Management Association farms over the past 4 years have shown an increase in returns to labor and management from \$252 to \$355 per cow. Returns for higher milk-producing cows were over \$400 each. Cost per hundred weight of milk produced per cow for the higher-producing herds compared with lower-producing herds was about the same. In 1994, for every extra \$1.00 spent on feed and other variable costs, the higher-producing herds earned \$1.28.

(Key Words: Profitability, Production Costs, Production Returns.)

**Introduction**

Detailed dairy herd records from farms enrolled in the Kansas Farm Management Association program are analyzed each year using the K-MAR-105 mainframe computer as the basis for providing valuable information to each participating dairy farm. This detailed information also is useful to nonmembers for benchmark comparisons. Total dairy herd production expenses, along with production information, are made available on a per hundred weight (cwt) of milk sold basis and a per cow basis. This complete dairy herd enterprise analysis, along with DHIA records, provide information for dairy farmers to evaluate correctly their dairy herd program.

**Procedures**

Dairy herd producers keep monthly receipt and expense records in an account book or on a computerized accounting program. Detailed crop production, feed, and inventory records are completed each year under the supervision of Extension agricultural economists in the Farm Management Association Program.

Milk production is based totally on sales and, thus, does not include home use or milk fed to calves. The total feed expense includes all feed consumed by the dairy cow herd including pasture, value of stock fields, etc. Values are based on average farm market price for the current production year, inventory value, or actual purchase cost.

**Results and Discussion**

The 1994 dairy herd enterprise records from 92 dairy farms were analyzed after dividing the herds with milk sales below and above 18,500 lb per cow. High production per cow is very important to obtain acceptable returns to the operator for management, labor, and equity capital.

Table 1 compares these two milk production groups. In 1994, the higher-producing herds sold 3,960 lb more milk per cow (over 23% greater production), which resulted in \$495 additional gross income per cow. For the higher-producing herds, total feed cost per cow increased by \$231 and other variable costs (direct production costs) increased by \$155. These herds returned \$109 more per cow above variable costs than the lower-producing herds. For a 100-cow herd, higher production provided \$10,900 more income for family living, debt

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repayment, replacement of machinery and equipment, and other capital investments. Table 2 provides information on all dairy herds in the Kansas Farm Management Association Program for the 1991-94 period.

Table 3 compares the difference in milk production, gross income, variable cost, and net returns by level of production.

**Table 1. Kansas Farm Management Association Dairy Herd Enterprise Analysis, 1994**

Factor	Milk sold per cow			
	<18,500 lb		>18,500 lb	
<b>Production Data</b>				
No. of farms	48		44	
No. of cows/farm	87		100	
Milk sold/cow, lb	17,001		20,961	
	Per cow	Per cwt milk sold	Per cow	Per cwt milk sold
<b>Production Returns</b>				
Milk sold	\$2,188	\$12.87	\$2,680	\$12.79
Livestock sales and other	<u>312</u>	<u>1.84</u>	<u>315</u>	<u>1.50</u>
Gross income	\$2,500	\$14.71	\$2,995	\$14.29
<b>Production Costs</b>				
Feed fed	\$1,343	\$7.90	\$1,574	\$7.51
Hired labor	145	.85	197	.94
Vet, supplies, marketing	279	1.64	365	1.74
Repairs, fuel, utilities	258	1.52	260	1.24
Interest and miscellaneous	<u>85</u>	<u>.50</u>	<u>100</u>	<u>.48</u>
Total variable costs	\$2,110	\$12.41	\$2,496	\$11.91
Return over variable cost	\$390	\$2.30	\$499	\$2.38

**Table 2. Kansas Farm Management Association Dairy Herd Enterprise Analysis, 1991-1994**

Factor	1991	1992	1993	1994
<b>Production Data</b>				
No. of farms	113	108	89	92
No. of cows/farm	85	86	89	93
Milk sold/cow, lb	17,518	18,135	18,054	19,077
<b>Production Returns</b>				
	Per cow			
Milk sold	\$2,094	\$2,360	\$2,299	2,446
Livestock sales and other	<u>310</u>	<u>322</u>	<u>322</u>	<u>315</u>
Gross income	\$2,404	\$2,682	\$2,621	2,761
<b>Production Costs</b>				
Feed fed	\$1,311	\$1,367	\$1,396	1,465
Hired labor	164	153	162	171
Vet, supplies, marketing	225	304	316	325
Repairs, fuel, utilities	209	218	234	260
Interest and miscellaneous	<u>114</u>	<u>96</u>	<u>102</u>	<u>92</u>
Total variable costs	\$2,070	\$2,138	\$2,210	\$2,313
Return over variable cost	\$334	\$544	\$411	448

**Table 3. Cost and Returns of Kansas Farm Management Association Dairy Herds Ranked by Production\***

No. of cows	Milk sold per cow	Feed cost per cwt	Other costs per cwt	Income/feed per cow	Labor and management return, per cow
	-lb-	----- \$ -----			
74	14,156	8.69	8.27	567	43
68	16,110	8.21	7.30	702	77
98	18,024	7.57	7.26	920	236
111	19,958	7.74	7.23	991	374
120	21,855	6.18	7.55	1,395	673

Source: Dairy Cow Enterprise Data Bank 1994, Department of Agricultural Economics, Kansas State University, Manhattan, Kansas.