



Current Report

Division of Agricultural Sciences and Natural Resources • Oklahoma State University

1995 Statistics and Analysis Oklahoma Dairy Herd Improvement Association Records

Jack D. Stout
Extension Dairy Specialist

Bryan Stout
Manager, Oklahoma DHIA

Oklahoma's Dairy Herd Improvement Association (DHIA) offers a wide range of testing plans with enough options and flexibility to meet producers' needs. Also, the adoption of the latest computer technology makes the service of DHIA fast and efficient. All data is transmitted via computer and phone modem from the lab, making total turn around time from test day to processing at Midstates DRPC an average of 3.8 days. Most local supervisors have portable computers so some management data can be provided on test day. Many producers have on-farm computers with the EBS Program making DHIA data available for daily use and updates.

Producers may select from several testing plans such as: DHI or DHIR—supervisor weighs and samples two consecutive milkings; DHI-AP—supervisor weighs

and samples one milking, alternating monthly from morning to evening milkings; DHI-APT—same as AP with official Timer to record milking intervals; DHI-APCS—same as DHI with milk samples collected one milking; OS—herd owner collects weights and samples; MO—no samples collected for Butterfat and Protein, may or may not collect samples for Somatic Cell Count (SCC).

Table 1 lists the test plans selected by Oklahoma producers with production and feed cost data for those herds. Sixty-six percent of the producers use AP plans to take advantage of the convenience and the 25% to 30% reduction in cost.

Merging with Heart of America DHIA, making Oklahoma a part of a six-state DHIA unit, has given the "economy of scale" to lab work and reduced lab costs by

TABLE 1. Participation in Various Oklahoma DHIA Testing Plans, 1994.

Type of Testing Plan	No. Herds	Cows/ Herd	Lbs. Milk	Percent Fat	Lbs. Fat	Percent Protein	Lbs. Protein	Feed Cost/ Cwt. milk
DHI	28	98	17,877	3.5	618	3.2	577	\$5.77
DHI-AP	50	86	15,908	3.5	554	3.3	524	\$5.02
DHI-APT	28	71	16,513	3.3	543	3.2	532	\$5.67
DHI-APCS	16	94	16,965	3.6	606	3.2	551	\$5.36
DHIR	29	111	19,440	3.6	696	3.3	642	\$5.54
DHIR-AP	3	89	17,958	3.7	668	3.4	607	
DHIR-APT	11	75	18,807	3.4	646	3.2	608	\$6.36
DHIR-APCS	8	86	16,518	3.4	555	3.3	548	\$6.01
DHI-OS	9	69	16,438	3.5	581	3.2	531	\$5.52
DHI-OS-AP	7	275	17,958	3.6	642	3.2	579	\$5.93
DHI-OS-MO	5	175	17,282					
ALL PROGRAMS	195	95	17,434	3.5	610	3.3	569	\$5.53

approximately 20 cents per cow per month. The lab is now located at 628 Pottawatomie, Manhattan, KS 66502.

Table 2 indicates the trends that have been occurring in the dairy industry over the last 15 years. These same trends will probably continue, and maybe at an accelerated pace. Herd size has increased by 19%, and milk per cow has increased 20%. Yet, income over feed cost increased at only 7% in the last 15 years. The 8% lower milk price, the 13% increase in feed cost, along with all other costs going up is the reason Oklahoma has only 60% as many dairies in 1995 as in 1980. Over the last five years, Oklahoma's dairy herd has stabilized at 98,000 to 100,000 cows. Larger herd size, being covered with basically the same family labor, may account for the reproduction parameters.

Table 3 lists DHIA management factors from herds grouped by production levels. These groupings, in 2,000 lb. increments, will allow easy comparison of individual herds. The production level, as measured by Rolling Herd Average, is what most producers look at first. However, the level of production can be changed very little unless there is a major improvement in one factor, or a gradual change in a combination of several areas of herd management. When desiring herd improvement, concentrating on improvement of the nutrition level and reproductive status of a herd will bring about the greatest production return.

When the herd differences in body weight are accounted for, the difference in feed consumption across

the various production levels is rather small. Herd summary data calculated across herds does not make allowances for feed quality. However, the data listed provides some indication of the result of different feed quality. Excellent quality forage is necessary to obtain the 2.6 lbs. of DM forage intake for the >22,000 lb. group. Also, some whole cottonseed and commodity feeds are probably used in a Total Mixed Ration to get this level of intake. The milk production levels of the lower groups, when 7,300 lbs. of grain is fed, is also a strong indication that grain will not substitute for low quality forage.

Reproduction plays a major roll in a herd's milk production level. An animal will not produce milk until it first reproduces. Likewise, an animal will not increase milk production until it reproduces again. The calving interval (CI) should be of concern at any production level. CI is very critical as it affects stage of lactation, % Days in Milk, and Dry Days. CI also has some effect on the number of replacement heifers. Producers with wide CIs should consider improving heat detection programs or adding heat synchronization and treatment programs that will promote the results needed for satisfactory calving intervals. These programs would also aid in the use of Artificial Insemination, which is needed in the lower production groups.

Table 4 lists the Oklahoma Holstein breed average and the breed averages for all herds of the nine-state area processing, with the Midstates DRPC for the other breeds. Breeds, other than Holstein, are grouped for the total area to have enough herds for meaningful data.

TABLE 2. Change in Selected DHI Factors, 1980 to 1995.

Line/DHI Factor	YEAR				Percent Change
	1980	1985	1990	1995	
Miscellaneous:					
1 Herd size	81	80	88	96	19%
2 Avg. age cows in months	54	45	49	48	-11%
3 No. replacement heifers	75	83	79	97	29%
Production:					
4 Lbs. milk/cow	14,535	14,542	15,872	17,403	20%
5 Lbs. fat/cow	521	532	560	607	17%
6 Avg. summit milk lbs.	59.8	61.3	64.2	70.4	18%
7 % days in milk	85	85	85	86	1%
8 Avg. days dry	70	75	69	69	-1%
Cost and Returns:					
9 Total feed cost/cow	\$838	\$853	\$929	\$944	13%
10 Value of milk/cow	\$1,975	\$1,866	\$1,991	\$2,162	9%
11 Income/feed cost/cow	\$1,137	\$1,013	\$1,062	\$1,218	7%
12 Feed cost/cwt. milk	\$5.85	\$5.87	\$5.91	\$5.60	-4%
13 Return/\$ feed fed	\$2.44	\$2.40	\$2.25	\$2.35	-4%
14 Value milk/cwt.	\$13.58	\$12.87	\$12.58	\$12.47	-8%
Reproduction:					
15 Projected calving interval	398	401	406	418	5%
16 Avg. days open	122	123	127	138	13%
17 Avg. days to 1st bred	80	84	84	84	5%

TABLE 3. Management Data of Oklahoma Holstein Herds at Various Production Levels.

Management Factor	Less Than						Your Herd
	13,999	14,000-15,999	16,000-17,999	18,000-19,999	20,000-21,999	Over 22,000	
Miscellaneous:							
Number of herds	20	26	46	35	22	10	_____
Avg. herd size	90	84	94	125	86	120	_____
Avg. body weight (cows)	1,122	1,167	1,200	1,232	1,259	1,260	_____
Number heifers/herd	76	56	82	122	92	197	_____
Ratio heifers to cow	.84:1	.67:1	.87:1	.98:1	1.07:1	1.67:1	_____
Production:							
Rolling herd avg. milk	12,813	15,092	16,977	19,108	20,768	23,651	_____
Avg. % cows in milk	85	85	86	87	88	88	_____
Avg. stage of lact. days	206	188	191	192	191	206	_____
Mgmt. level milk	41.9	47.7	52.6	60.4	64.1	70.5	_____
Avg. summit milk 1st lact.	44.9	50.8	56.9	62.5	66.1	74.2	_____
Avg. summit milk all	42.2	62.4	70.5	76.7	82.1	90.3	_____
% cows in 1st lact.	30	36	32	38	37	35	_____
Reproduction:							
Avg. projected C I	412	424	408	413	414	422	_____
Ser/concp. cows	1.9	2.0	1.8	2.2	2.0	2.3	_____
Avg. days to 1st bred	92	96	91	82	86	78	_____
Avg. days open	132	144	128	133	134	142	_____
Avg. days dry	70	73	71	70	64	64	_____
% dry 40-70 days	38	46	52	59	62	67	_____
Milk Quality:							
Avg. SCC (000)	365	371	283	287	256	254	_____
% cows > 400 SCC	24	22	18	16	16	12	_____
Daily \$ loss/herd	\$33.61	\$23.49	\$26.86	\$37.36	\$16.47	\$25.60	_____
Feed:							
Lbs. hay	6,748	5,543	6,219	5,691	5,834	4,098	_____
Lbs. succ., misc.	903	5,444	4,991	3,385	12,991	796	_____
Pasture days	134	236	227	160	191	206	_____
Lbs. concentrate	7,257	7,377	7,291	7,501	7,924	9,317	_____
Lbs. silage	8,212	6,328	4,175	8,801	6,260	12,051	_____
Lbs. green chop	3,924	4,744	1,028		2,698		_____
Lbs. haylage			10,270	685	2,755		_____
Avg. income/feed cost	\$788	\$1,058	\$1,146	\$1,367	\$1,358	\$1,656	_____
Avg. feed cost/cwt. milk	\$6.81	\$5.63	\$5.62	\$5.49	\$5.56	\$4.88	_____
Avg. return/\$ feed	\$1.95	\$2.32	\$2.24	\$2.32	\$2.36	\$2.46	_____
Annual rate forage DM	2.0	1.7	1.7	2.2	2.0	2.6	_____
Genetics:							
Age at 1st fresh	2-03	2-04	2-04	2-03	2-04	2-03	_____
Avg. age all cows	3-11	4-00	4-01	3-09	3-11	3-09	_____
% cows with PTA	13	27	34	66	87	92	_____
Avg. PTA level (cows)	1,234	1,227	1,400	1,502	1,486	1,630	_____
Avg. PTA all ser. sires	616	970	1,120	1,577	1,703	1,743	_____

TABLE 4. Breed Averages for All DHI Herds, 1994.*

<i>Breed</i>	<i>No. Herds</i>	<i>No. Cows</i>	<i>Lbs. Milk</i>	<i>Lbs. Fat</i>	<i>Lbs. Protein</i>	<i>Income/ Feed Cost/\$</i>	<i>Calv. Interv. Days</i>
Ayrshire	32	1,280	14,114	545	479	\$901	407
Brown Swiss	72	3,388	15,344	621	547	\$1,176	408
Guernsey	52	2,132	13,782	602	476	\$1,051	414
Holstein (Okla.)	130	12,523	18,229	623	588	\$1,269	406
Jersey	108	5,508	12,852	603	486	\$1,080	395
Mixed	101	4,747	14,871	571	497	\$1,118	416
Milking Shorthorn	12	604	12,033	429	410	\$770	406
Dairy Goats	45	1,004	1,781	65	55	\$336	376

*The breed averages for Holsteins are OK data. The other breeds are for herds processed at Midstates DRPC from AR, KS, IA, IL, MO, NE, ND, SD.

Oklahoma State University, in compliance with Title VI and VII of the Civil Rights Act of 1964, Executive Order 11246 as amended, Title IX of the Education Amendments of 1972, Americans with Disabilities Act of 1990, and other federal laws and regulations, does not discriminate on the basis of race, color, national origin, sex, age, religion, disability, or status as a veteran in any of its policies, practices or procedures. This includes but is not limited to admissions, employment, financial aid, and educational services.

Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Charles B. Browning, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Dean of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of \$295.00 for 3,000 copies. #3913 0196 JDR.