

A COMPARISON OF THE EFFICIENCY OF TESTED AND  
NON-TESTED DAIRY HERDS IN WOODWARD  
AND SURROUNDING COUNTIES

By

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## CHAPTER I

### INTRODUCTION

#### Present Situation

Fifty-eight years of progress has been recorded since the first Dairy Herd Improvement Association in the United States was organized in Newaygo County, Michigan, late in the autumn of 1905. This first association included 239 cows from 31 herds with an average production of 215 pounds of butterfat per cow.<sup>1</sup> The number of associations has grown during the intervening years to a total of 1,436, testing a total of 1,958,355 cows with an average production of 10,796 pounds of milk with a 3.9 per cent test in 1962. Thus, there has been an increase in butterfat production per cow per year of 203 pounds.

The Northwest Oklahoma Dairy Herd Improvement Association can not equal the years of testing shown by the first established association, but the recorded improvement would compare favorably. This association began on February 6, 1954, with 603 cows representing 19 herds. The average production per cow has increased from 8,398 pounds of milk and 327 pounds of butterfat per cow to 9,321 pounds of milk and 374 pounds of butterfat. This latest

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<sup>1</sup>McDowell, J. C., Dairy Herd Improvement Associations and Stories the Records Tell, U.S.D.A. Farmers Bulletin, No. 1604, 1929.

figure represents 19 herds with 996 cows. The current production represents 111 per cent of the milk and 114 per cent of the butterfat of 1954. The steady production progress and change in management costs may be more clearly followed in Table I.

Although the number of dairymen with cows on test has increased some 65 per cent over the original number started on test in the Northwest Oklahoma Dairy Herd Improvement Association in 1954, the number of herds remains at 19. This is an indication that dairymen with herds on test see a value to production records, but those not on test fail to see the value of the program.

#### Purpose

According to Kendrick,<sup>2</sup> guesses and estimates may serve for a time, but worthwhile improvement is seldom obtained without records. The purpose of this study is to compare herds on test with those not on test to determine the dollar value of the accurate records of a testing program.

#### Problem

Dairy testing has proven to be a helpful guide in selecting, feeding, and managing dairy herds for over a half century. The problem still exists, however, that many dairymen do not test their cows. This situation exists in Woodward County, Oklahoma, as well as throughout the entire United States.

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<sup>2</sup>Kendrick, J. F., The Dairy Herd Improvement Association Program, U.S.D.A. Farmers Bulletin, No. 1974, 1926.

TABLE I

## NORTHWEST OKLAHOMA DAIRY HERD IMPROVEMENT ASSOCIATION SUMMARY

Year	No. of Cows	Days in Milk	Production		Value of Product	Grain (lb.)	Days on Pasture	Feed Cost	Profit Over Feed	Return Per Feed Dollar	Feed Cost Per	
			Milk	B.F.							lb. B.F.	Gwt. Milk
1954	603	291	8398	327	\$394	2750	257	\$161	\$233	\$2.45	\$ .49	\$1.91
1955	679	287	8579	330	\$391	1741	119	\$116	\$225	\$2.36	\$ .50	\$1.93
1956	484	302	9013	348	\$460	2975	117	\$177	\$283	\$2.57	\$ .51	\$1.96
1957	496	298	9201	361	\$513	3282	174	\$176	\$337	\$2.91	\$ .49	\$1.91
1958	566	298	8936	354	\$482	2976	225	\$164	\$318	\$2.94	\$ .46	\$1.83
1959	722	297	8963	362	\$463	3002	196	\$162	\$301	\$2.86	\$ .45	\$1.81
1960	1002	302	9184	371	\$452	3460	153	\$169	\$283	\$2.67	\$ .45	\$1.84
*1961	996	296	9321	374	\$475	3595	167	\$197	\$278	\$2.42	\$ .53	\$2.11
1962												

\*Record is from May 1, 1961 to April 30, 1962, at which time Northwest Oklahoma D.H.I.A. began recording on I.B.N. cards.



The picture is much the same anywhere you go. The dairyman with good records based on an approved testing program would not trade his records for his neighbor's best cow. The dairyman without a testing program and no records is sure he knows everything about each cow, including her production level, breeding and feeding habits, and feed requirements.

Many different testing programs have been used in dairy operations. Some of the more commonly accepted programs include Dairy Herd Improvement Association (D.H.I.A.), Herd Improvement Registry (H.I.R.), Owner Sampler, and Weigh-A-Day-A-Month plan. The first three mentioned are explained very well by Gilmore<sup>3</sup> and have been well accepted by most dairymen. The basic rules, as recommended by the American Dairy Science Association for the Herd Improvement Test, are adequately discussed in the Journal of Dairy Science.<sup>4</sup> These have been modified to conform with current methods of electronic data processing procedures in subsequent U.S.D.A. informational leaflets. The Weigh-A-Day-A-Month plan was started in 1957, but has not been accepted in Northwest Oklahoma with much enthusiasm.

One of the big questions asked by most dairymen not on a testing program is, "How can the program benefit me?" This survey was made in an attempt to acquire information permitting an intelligent and adequate answer to this question.

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<sup>3</sup>Gilmore, L.O., Dairy Cattle Breeding, J. B. Lippincott Company, New York, 1952, p. 371.

<sup>4</sup>American Dairy Science Association, Rules for the Herd Improvement Registry Test, Journal of Dairy Science, Vol. 24, 1941, p. 463.

## CHAPTER II

### PROCEDURE

All of the dairymen in Woodward County plus selected dairymen in the area outside of the county were contacted in the spring of 1962 on the survey study. These included both those dairymen with herds on testing programs and those with no production records at all.

Contact was first made with a questionnaire and a letter of explanation mailed to 46 dairymen in the area. The letter explained the purpose and intended use of the questionnaire. It also assured them that the information would be kept confidential with no specific individual references. Twenty-one of the 46 questionnaires mailed were answered. Thirteen of these were from dairymen with a testing program and eight were from those not testing at that time.

The 21 dairymen that indicated a willingness to cooperate were visited individually on their farms. The survey sheet was explained, discussed in detail, and adjustments were made on original answers in cases of misunderstanding or misinterpretation of the questions.

Information requested pertained strictly to the dairy business, however, it included a good summary of the business. The five areas covered included general information concerning the size of operation, herd information, breeding program, buildings, and equipment; record systems including production, breeding, and feeding; milking procedures; disease control; and marketing.

## CHAPTER III

### RESULTS

There was a great deal of variation among the dairymen surveyed in size, facilities, and production of their herds. Size of herds ranged from 85 cows in production in the largest herd to 18 cows in the smallest herd. Size of farms varied from 3,900 acres to 480 acres.

Comparing the average of herds on a testing program (designated in all tables as "Test") to the average of the herds without a testing program (designated in all tables as "Non-Test"), we get the picture shown in Table II.

A compiled summary of the general information and the breeding records for the herds surveyed is found in Tables III through IX. A summary was not compiled of the record system, milking procedures, disease control, or marketing. These were not included because the variation was so great that a summary would have little or no meaning in chart form. Answers to these questions, however, are included in the discussion.

TABLE II  
COMPARISON OF THE AVERAGE OF HERDS  
ON TEST AND THOSE NOT ON TEST

	Test	Non- Test
<b>I. GENERAL INFORMATION</b>		
<b>A. Size of Operation</b>		
Number of people working on dairy enterprise	2.3	2.6
Per cent of their time devoted to dairy	71%	33%
Number of acres operated	987	637
Acres owned	576	337
Acres rented	411	301
Acres cropland	438	289
Acres grassland	549	348
<b>B. Herd</b>		
<b>Breed</b>		
Holstein	70%	50%
Jersey	23%	--
Guernsey	07%	--
Shorthorn	--	13%
Mixed	--	37%
Registered (Av. No.)	24	1
Grade (Av. No.)	45	32
Number cows	52	33
Number heifers	27	71
Number calves	24	12
Average weight of cows in production	1050	1080
<b>C. Breeding Program</b>		
Own Bull	100%	100%
Partnership Bull	--	--
Use Neighbor's Bull	--	--
Have you used artificial insemination? yes	85%	37%
Are you using artificial insemination now? yes	77%	13%
If so, what per cent of cow herd	40%	12%
Average age of heifers at freshening--months	24	24
<b>D. Buildings and Equipment</b>		
Loafing shed	61%	50%
Inside hay storage (ton capacity)	85	28
Tons used per year	184	44
Silo	1	.25
Trench (capacity per ton)	430	275
What is your total investment in your dairy operation?	\$36,130	\$16,880

TABLE II (Continued)

	Test	Non-Test
<b>II. RECORD SYSTEM</b>		
<b>A. Breeding Records</b>		
Do you keep a breeding calendar?	yes	yes
What is your normal calving interval--months	12	12
What is the average number of lactations a cow remains in your milking herd?	5.33	7.5
This varies from--years	3-10	5-10
How many cows or heifers freshened during each month of the last year:		
November	5	2
December	3	2
January	3	2
February	5	2
March	2	4
April	3	1
May	3	4
June	2	2
July	3	4
August	8	2
September	8	2
October	7	2

## CHAPTER IV

### DISCUSSION

Personal visitation with the dairymen in filling out the questionnaires was much more revealing than any survey can show. Fully explained questions were given a definite answer by dairymen with herds on test because they had a record to which they could refer. Many of the questions asked were not answered by information in the Dairy Herd Improvement Association record book as a part of the testing program, but the information was kept in a supplemental file near the herd book because it was a part of the over-all dairy record system. This can probably be better explained if each section of the survey is examined separately.

All of the dairymen surveyed could very readily give the desired information requested about the amount of land operated (Table III). Most of this information came from records required for the Agricultural Stabilization and Conservation Service Office. These records give a breakdown of cropland, grassland, acres owned and acres rented.

Dairymen on testing programs generally operated larger farms than those not testing. Percentage-wise, the breakdown of acres owned and acres rented was about the same for both groups. Those on a testing program owned 58 per cent of the land operated as compared to 54 per cent for dairymen not on a testing program.

TABLE III  
GENERAL INFORMATION OF DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	No. People Working		Per cent of Time Devoted to Dairy		Acres Operated		Acres Owned		Acres Rented		Crop Acres		Grass Acres	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	3	2	83%	75%	1088	640	1046	640	42	0	788	0	300	640
2.	2	4	75%	30%	800	640	80	160	720	480	506	300	294	340
3.	4	3	75%	15%	570	960	200	360	370	600	270	630	300	330
4.	1.5	2	60%	25%	440	420	343	420	97	0	220	78	220	342
5.	2	2	65%	25%	1120	400	120	400	1000	0	840	166	260	230
6.	2	3	60%	25%	360	800	160	400	200	400	180	500	180	300
7.	2	1	100%	30%	360	480	160	0	200	480	200	200	160	280
8.	4	4	50%	40%	3900	760	3420	315	480	445	667	436	3233	324
9.	1.5		90%		1040		720		320		700		200	
10.	2		50%		400		0		400		378		22	

TABLE III (Continued)

No. People Working		Per cent of Time Devoted to Dairy		Acres Operated		Acres Owned		Acres Rented		Crop Acres		Grass Acres	
Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
11.	2		75%	1200		480		720		120		1080	
12.	2		50%	1160		360		800		700		460	
13.	2		100%	400		400		0		120		280	



Almost the same thing was true in relation to cropland and grassland. The dairymen with herds on test had 56 per cent of their land in grass while those not on test had 55 per cent of their land in grass.

Herd information was immediately available from all farms (Table IV). The operators knew the number of cows, both grade and registered, and their average weight. The same was true for heifers and calves on the farms.

A definite trend is evident in Table IV concerning the number of registered cattle on farms with testing programs compared to those not testing. This same trend continued in the keeping of heifers and calves on the farms.

According to Davis,<sup>5</sup> the total cost of raising replacement heifers is remarkably close to the market value of an animal ready to calve for the first time. Considering this fact, only top quality animals should be raised for herd replacements.

Dairymen with testing programs report that replacement heifers can be kept with more confidence from sires and dams with known blood lines and production records. This permits them to build their herds in size and quality at a faster, more economical rate than through the trial-and-error method.

McDowell's statement some years ago had basically the same meaning when he said:

Considerable progress has been made in dairying  
by selecting for breeding purposes the descendants

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<sup>5</sup>Davis, Richard F., Modern Dairy Cattle Management, Prentice Hall, Inc., Englewood, New Jersey, 1962.

TABLE IV

## HERD INFORMATION OF DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	Breed		Registered		Grade		Total Cows		Body Weight		All Heifers		All Calves	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	Jersey	Mixed	37	0	89	35	77	35	800#	1100#	17	16	32	0
2.	Holstein	Holstein	50	6	3	34	53	40	1300#	1000#	58	12	14	14
3.	Holstein	Holstein	4	0	46	18	50	18	1250#	900#	24	10	36	11
4.	Jersey	Shorthorn	50	0	0	37	50	37	900#	1100#	10	6	20	17
5.	Guernsey	Mixed	23	0	4	21	26	21	1000#	900#	9	0	7	21
6.	Holstein	Holstein	0	0	48	54	48	54	1000#	1200#	30	6	7	0
7.	Holstein	Mixed Holstein	3	0	52	20	29	20	1100#	1300#	26	3	12	10
8.	Jersey	Holstein	115	0	84	36	85	36	900#	1150#	60	6	34	22
9.	Holstein		4		66		70		1200#		18		56	
10.	Holstein		7		64		43		1200#		25		22	

TABLE IV (Continued)

Breed		Registered		Grade		Total Cows		Body Weight		All Heifers		All Calves	
Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
11.	Holstein Jersey	0		60		60		1100#		20		15	
12.	Holstein	12		16		28		1200#		27		28	
13.	Holstein Jersey	10		50		60		1100#		30		30	
	Totals	315	6	582	255	679	261	1050# Average	1081# Average	354	59	313	95

of high producers, but the most rapid progress can only be made by looking forward as well as backward.<sup>6</sup>

All of the dairymen contacted in the survey owned a bull. None used the neighbor's bull and only one partnership bull was indicated. Owning bulls, however, does not keep the progressive dairyman from taking advantage of opportunities to improve his herd through the use of artificial insemination.

Tremendous interest has developed in the use of artificial breeding for dairy cows since 1939 when the first artificial breeding association was organized.<sup>7</sup> Table V reveals that 85 per cent of the dairymen with cows on test have tried artificial breeding in their herds. Seventy-seven per cent of those testing were breeding an average of 40 per cent of their herds artificially at the time the survey was made. Only 38 per cent of the non-tested herds had used artificial breeding previously and only one herd in eight was using artificial breeding at the time of the survey.

Comparing these figures with the statement Davis makes that "over one-third of the dairy calves now born each year are the result of artificial insemination"<sup>8</sup> we can see which group is more aggressive in the use of this tool for herd improvement.

Each of the dairymen reported that he kept a breeding calendar (Table VI). It was doubtful, however, how much the record was used

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<sup>6</sup> McDowell, J. C., Dairy Herd Improvement Through Cooperative Bull Associations, U.S.D.A. Farmers Bulletin, No. 1532, 1927.

<sup>7</sup> Parker, J. B. and P. C. Underwood, Care and Management of Dairy Bulls, U.S.D.A. Farmers Bulletin, No. 1412, 1954.

<sup>8</sup> Davis, Modern Dairy Cattle Management.

TABLE V

## BREEDING PROGRAM OF DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	Own's Bull	Partnership Bull	Used Neighbor's Bull	Have You Used Artificial Insemination	Are You At Present Using Artificial Insemination	Per cent of Herd Bred Artificially	Average Age of Heifers at Freshening	Average Weight of Heifers at Freshening								
	Test	Non- Test	Test	Non- Test	Test	Non- Test	Test	Non- Test	Test	Non- Test	Test	Non- Test	Test Mo.	Non- Test Mo.	Test Lbs.	Non- Test Lbs.
1.	Yes	Yes	No	No	No	No	Yes	No	Yes	No	21%	0	24	27	700	1000
2.	Yes	Yes	No	No	No	No	Yes	Yes	Yes	No	50%	0	26	24	1000	700
3.	Yes	Yes	No	No	No	No	No	No	No	No	0	0	24	24	1000	750
4.	Yes	Yes	No	No	No	No	Yes	No	Yes	No	10%	0	22	18	650	800
5.	Yes	Yes	No	No	No	No	Yes	No	Yes	No	24%	0	24	24	750	750
6.	Yes	Yes	No	No	No	No	Yes	No	No	No	0	0	24	24	900	950
7.	Yes	No	No	No	No	No	Yes	Yes	Yes	Yes	100%	100%	30	24	700	850
8.	Yes	Yes	No	No	No	No	No	Yes	No	No	0	0	24	30	750	900
9.	No		No		No		Yes		Yes		100%		27		900	

TABLE V (Continued)

	Own's Bull	Partnership Bull	Used Neighbor's Bull	Have You Used Artificial Insemination	Are You At Present Using Artificial Insemination	Per cent of Herd Bred Artificially	Average Age of Heifers at Freshening	Average Weight of Heifers at Freshening	
	Test	Non- Test	Test	Non- Test	Test	Non- Test	Test	Non- Test	
							Mo.	Mo.	
							Lbs.	Lbs.	
10.	Yes		Yes	No	Yes	Yes	50%	24	900
11.	Yes		No	No	Yes	Yes	15%	22	700
12.	Yes		No	No	Yes	Yes	100%	24	1000
13.	Yes		No	No	Yes	Yes	50%	24	1000

TABLE VI

## BREEDING RECORDS OF DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	Keep Breeding Calendar		Calving Interval (Months)		Average Time Cow Stays in Herd (Years)		Breeding Records Used in Culling		Raised Herd Replacements		Basis for Replacement Selection	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	Yes	Yes	12	12	6-7	6	Yes	Yes	Yes	Yes	Production of Dam	Purchase
2.	Yes	Yes	12	12	5	7	Yes	Yes	Yes	Yes	Keep all Heifers till 1st calf	Trial
3.	Yes	Yes	12	11	10	7	Yes	Yes	Yes	Yes	Production of Dam	Appearance
4.	Yes	Yes	12	12	6	10	Yes	Yes	Yes	Yes	Production of Dam	Trial
5.	Yes	Yes	13	11	8	9	Yes	No	Yes	No	Production of Dam	Purchase
6.	Yes	Yes	11	12	4	8	Some	No	Yes	No	Production of Dam	Purchase
7.	Yes	Yes	11	11	5	5	No	Yes	Yes	Yes	Production of Dam	Keep all Heifers-Trial

TABLE VI (Continued)

	Keep Breeding Calendar		Calving Interval (Months)		Average Time Cow Stays in Herd (Years)		Breeding Records Used in Culling		Raised Herd Replacements		Basis for Replacement Selection	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
8.	Yes	Yes	12	12	4	?	Yes	No	Yes	Yes	Production of Dam	Trial
9.	Yes		12		4		Yes		Yes		Production	
10.	Yes		12		4		Yes		Yes		Production	
11.	Yes		12		5		Yes		Yes		Production of Dam	
12.	Yes		12		3		Yes		Yes		Production of Dam	
13.	Yes		12		4		Yes		Yes		Production	



by some of the dairymen as more questions were asked concerning breeding records. Only about one-half of those not on a testing program could report with any degree of accuracy the number of animals calving each month as is shown in Table VII. Yet these same dairymen reported a 12 month calving interval and said they used the breeding records as a culling device.

The selection of replacement heifers was based on a trial-and-error method for most of the dairymen without records. Two dairymen did not keep any heifers for replacements; four kept all heifers for at least one lactation and some kept heifers because of disposition, appearance, and various other reasons. Twelve of the 13 dairymen with herds on test selected replacement heifers on production record of the dam and only one kept all heifers until after the first lactation.

It was no great surprise to find that dairymen with herds on test had a larger investment per farm than did those not on test (Table VIII). It has been mentioned earlier in the report that the average operation was larger in cattle numbers and also in acres per farm. It was a surprise, however, to find that a portion of this increased investment was in buildings and equipment including loafing sheds, hay storages, trench silos and upright silos.

Dairy animals have simple requirements in regard to housing. Protection from storms and drafts or high winds in cold weather is necessary.<sup>9</sup> Most of these needs can be met with a simple loafing

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<sup>9</sup>Ibid.

TABLE VII

MONTH OF YEAR THAT COWS FRESHENED IN DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	January		February		March		April		May		June	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	6	?	5	?	1	?	0	?	2	?	3	?
2.	9	0	3	3	1	3	2	4	8	0	1	6
3.	5	1	3	0	3	2	3	0	0	0	2	0
4.	4	4	9	3	2	8	0	0	0	10	4	5
5.	0	?	2	?	0	?	1	?	3	?	0	?
6.	3	?	4	?	3	?	3	?	2	?	4	?
7.	1	1	1	0	3	0	1	4	5	4	2	7
8.	2	?	11	?	2	?	17	?	8	?	5	?
9.	3		2		2		0		0		0	
10.	4		4		3		1		0		0	

TABLE VII (Continued)

	January		February		March		April		May		June	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
11.	7		5		4		5		7		3	
12.	0		2		3		1		3		0	
13.	3		8		6		3		7		2	
	47	6	59	6	33	14	37	8	45	14	26	12

TABLE VII (Continued)

	July		August		September		October		November		December	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	5	?	20	?	19	?	10	?	7	?	3	?
2.	3	10	14	7	9	4	5	0	3	2	3	1
3.	2	0	4	4	10	4	7	1	3	4	7	2
4.	7	7	2	0	3	0	10	0	3	0	4	0
5.	2	?	2	?	6	?	3	3	3	?	3	?
6.	6	?	8	?	4	?	10	?	10	?	2	?
7.	2	0	9	1	4	4	1	4	2	4	3	1
8.	3	?	8	?	5	?	15	?	10	?	3	?
9.	0		17		22		10		9		6	
10.	5		10		8		6		3		2	

TABLE VII (Continued)

	July		August		September		October		November		December	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
11.	0		4		3		10		4		3	
12.	2		2		3		3		3		6	
13.	2		8		8		10		1		6	
	39	17	108	12	104	12	100	5	61	10	51	4

TABLE VIII

## BUILDINGS AND EQUIPMENT ON FARMS WITH DAIRY HERDS ON TEST AND THOSE NOT ON TEST

	Loafing Shed		Tons of Inside Hay Storage		Tons of Hay Used Per Year		Trench Silo (Tons)		Upright Silo (Tons)		Investment (Dollars)	
	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test
1.	80'x17'	None	10	None	250	?	3-1500	None	None	None	40,000	18,550
2.	None	None	150	75	125	200	1--400	350	None	None	40,000	20,000
3.	92'x22'	20'x60'	200	10	200	20	1--400	None	None	None	30,000	5,500
4.	60'x36'	None	50	None	70	40	None	None	320	None	35,000	3,500
5.	None	12'x48'	200	10	70	30	None	None	None	None	40,390	5,000
6.	None	20'x60'	None	50	150	50	None	None	None	None	25,000	75,000
7.	20'x40'	None	150	28	100	30	1--400	None	None	None	30,000	?
8.	30'x72'	20'x40'	200	50	200	25	1--600	200	250	None	49,700	7,500
9.	Shelter Belt		200		350		1--500		None		35,000	
10.	12'x50'		None		100		2--900		None		40,000	

TABLE VIII (Continued)

Loafing Shed		Tons of Inside Hay Storage		Tons of Hay Used Per Year		Trench Silo (Tons)		Upright Silo (Tons)		Investment (Dollars)		
Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	Test	Non-Test	
11.	20'x40'		75		170		None		None		25,000	
12.	14'x56'		100		100		2--600		None		40,000	
13.	None		None		500		1--300		None		40,000	
			1335	223	2385	385	Silos 13-5600	550	570	None	469,700	135,050

shed. Loafing sheds were inadequate on most of the dairy farms included in the survey, a fact admitted by the dairymen visited. They were found on 60 per cent of the farms with testing programs and 40 per cent of those not testing.

Inside hay storage averaged three times greater on testing farms than on non-testing farms. Silos were four times greater in number on farms with testing programs and had almost double the storage capacity of silos on farms not on test.

Davis<sup>10</sup> points out that better production is usually obtained when considerable hay is fed with silage in supplying the forage requirements for dairy cattle.

A point not brought out in the survey but revealed through discussion with the individual dairyman was the opinion that loafing sheds and properly stored hay and silage did a great deal toward improving milk production. Proper and adequate storage conveniently located also helped to hold the cost of production down as feed could be purchased and stored during the year when the supply was plentiful and prices were more favorable.

Record keeping was virtually non-existent for those not on a testing program. They did not even use one of the estimating systems of Tyler and Chapman.<sup>11</sup> Only one of the eight surveyed had kept any dairy production records at all. He had been on the Weigh-A-Day-A-Month program and this was discontinued because of

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<sup>10</sup> Ibid.

<sup>11</sup> Tyler, W. J., and A. B. Chapman, A Simplified Method of Estimating 305-Day Lactation Production, Journal of Dairy Science, Vol. 27, 1944, p. 463.



lack of help. One of the eight did express a desire to get on a testing program.

The 13 dairymen surveyed that were on test were using the Dairy Herd Improvement Association record system. They all showed an increase in production, both in pounds of milk and butterfat since starting on a testing program. This can be seen in Table I.

Feeding methods and costs varied a great deal depending on the size of the operation. There was a greater difference due to the size of the operation than because of a testing program. Most of the dairymen surveyed were doing a good job of feeding. The usual ration was a 14 per cent protein ration fed at the rate of one pound of feed for each three pounds of milk produced, either weighed or estimated.

Milking procedures did not vary a great deal from herd to herd. There was a definite time for milking regardless of the season, with the same person usually doing the milking. Part of the grain was fed while milking and the rest of it was fed in bunks outside.

Disease control was about the same on each farm. This was generally true because of controls and inspection. Tested herds seemed to be having less mastitis trouble as a result of culling chronic mastitis cows.

Eighteen of the 21 herds surveyed were selling Grade A milk. They all had pipeline milkers and bulk tanks. Table IX gives a monthly production summary of each herd plus the total production for all herds each month and a monthly average. Although the production of some herds did vary each month, the total production from the area surveyed did not vary a great deal.

TABLE IX

MARKETING SCHEDULE IN POUNDS OF MILK PER MONTH FOR DAIRY HERDS ON TEST AND THOSE NOT ON TEST  
THIRTEEN GRADE A TESTED HERDS

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.	42,800	48,100	20,625	46,100	36,500	37,500	35,700	46,100	51,900	45,100	52,600	57,400
2.	54,791	60,306	57,961	66,378	56,190	60,967	51,414	39,095	28,801	43,587	57,361	50,885
3.	39,000	38,000	35,000	44,000	38,000	39,000	34,000	29,000	24,000	24,000	31,000	36,000
4.	28,000	26,000	28,000	29,000	20,000	36,000	32,000	31,000	31,000	30,000	30,000	28,000
5.	17,165	18,875	18,345	17,300	19,360	21,465	26,500	21,000	16,715	17,269	16,705	17,265
6.	36,000	38,000	37,000	36,000	32,000	31,000	34,000	36,000	34,000	32,000	30,000	34,000
7.	28,700	22,200	23,700	24,600	29,300	27,200	28,200	32,000	37,100	35,400	29,840	29,850
8.	40,980	54,030	51,840	52,500	50,690	45,220	45,860	40,100	30,610	43,690	42,000	37,560
9.	68,000	60,900	59,700	81,780	74,460	52,680	54,800	28,600	34,800	57,500	64,100	74,800
10.	40,600	53,200	53,200	33,460	29,940	24,100	24,500	34,800	45,000	47,700	56,300	48,800

TABLE IX (Continued)

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
11.	30,358	30,627	30,587	33,888	31,948	36,563	36,992	33,467	37,690	27,647	32,939	31,224
12.	48,000	41,000	40,000	46,000	42,000	35,000	27,000	21,000	26,000	33,000	27,000	40,000
13.	42,100	48,400	49,400	48,140	45,580	32,870	32,200	35,300	50,000	48,300	48,400	45,300
Total	516,494	539,638	505,358	559,146	515,968	479,565	463,166	427,462	447,616	485,195	508,245	531,084
Avg.	39,730	41,511	38,874	43,011	39,689	36,889	35,628	33,649	34,432	37,323	39,096	40,853

TABLE IX (Continued)

## FIVE GRADE A - THREE CREAM NON-TESTED HERDS

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.	24,896	25,530	13,564	25,296	30,716	29,209	25,521	20,182	21,507	20,420	21,640	22,530
2.	22,857	20,000	22,846	14,285	11,400	14,285	17,428	20,000	22,800	25,714	22,857	22,854
3.*	200	200	250	300	350	300	200	200	400	450	350	300
4.*	179	149	177	110	119	204	139	167	155	123	157	130
5.*	230	130	140	130	300	295	350	260	200	180	125	150
6.	38,618		32,826	38,864	35,428	35,607	35,405	41,268	45,216	44,889	38,027	42,367
7.	12,750	10,270	12,000	16,400	12,750	18,100	16,250	12,500	13,500	18,000	18,600	19,650
8.	22,297	18,620	64,837	59,191	61,552	60,228	18,766	15,592	14,103	26,060	56,978	77,083
Total	121,418	74,420	146,073	154,036	151,845	157,429	113,370	109,542	117,126	135,083	158,102	184,484
Avg.	24,284	14,885	29,214	30,807	30,369	31,486	22,674	21,908	23,425	27,017	31,620	36,897
Cream Total	609	579	567	540	769	799	639	627	755	753	632	580
Cream Avg.	203	193	189	180	256	266	213	209	252	251	211	193
*Cream												

The milk was marketed through two different channels, each having a different method of establishing milk base. One market is through the North Texas Milk Producers Association, the other is through Gold Spot Dairy, Inc. Base period for the North Texas Association was established through the months of September, October, November, and December. The base selling period was through March, April, May, and June for this association. Dairymen selling through this association try to have their peak production through these two four month periods.

A year-round base was established by the dairymen selling to Gold Spot, Inc., adjusted on each two week period. This system of marketing encouraged the producer to have a constant supply of milk throughout the year.

Breeding records were also important to the marketing phase of the dairy. New cows should be brought into production either in a base setting period or at a time when demand for milk is good and very little surplus is on the market.

Three of the dairymen with herds not on test were selling cream. Their production records are also shown in Table IX by monthly production plus total and average production for the three herds.

## CHAPTER V

### SUMMARY AND CONCLUSIONS

Dairymen with herds on testing programs in Woodward and surrounding counties are more aggressive than those not on a testing program. They are more inclined to obtain registered cattle with known blood lines and production ability. The size and quality of their herds increases at a faster rate by keeping replacement heifers from their own herds. They are also more receptive to new ideas. These facts seem to be borne out in Table II in a comparison of the average of testing and non-testing herds.

Testing dairymen have 30 per cent registered cows in their herds as compared to three per cent for non-testing dairymen. Eighty-five per cent have used artificial breeding and 77 per cent are breeding an average of 40 per cent of their herds artificially at the present time. Only 38 per cent of the non-testing herds have used artificial breeding previously and only one herd in eight is breeding artificially at the present time.

There is more system and reasoning to the calving schedule of dairymen with herds on test. The same statement applies to the system of selecting replacement heifers, culling methods, and feeding habits on these farms. The survey shows that the dairymen with herds on test can recognize a poor milking cow at an early age and dispose of her more quickly than those not testing.

The survey study reveals that dairy operators with herds on test have a larger average investment than those not on test. A large portion of this investment is in buildings and equipment. The inside hay storage is three times greater, loafing sheds are on ten per cent more farms, and silos are four times greater in number on farms with testing programs as compared to those not on test. Feeding records are also more detailed, complete, and meaningful on farms with testing programs than for those not testing.

In conclusion the writer answers the question so often asked, "How can dairy testing benefit me?" Based on a survey of 21 dairy operations in Woodward and surrounding counties, testing programs help to make more observing dairymen. The dairymen become more aware of the individual needs of each cow as well as her production. Better over-all records are kept of the dairy operation including breeding, feeding, disease control, and milking techniques. The dairyman is more receptive to new ideas and developments, strives to improve each individual cow's production to the peak through management, selects heifers from top performers for herd replacements, improves buildings and equipment, and are more intelligent feeders. He does more than milk cows, because he becomes a dairyman.

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