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NORTH CAROLINA

AGRICULTURAL EXTENSION SERVICE

ANNUAL REPORT

FOR

1954

Period covered December 1, 1953 to November 30 1954

Name of Project DAIRY EXTENSION

Covering work done by George Hyatt, Jr. R. R. Rich

T. C. Blalock W. M. Roberts*

F. R. Farnham Marvin E. Senger

J. D. George R. L. Wynn (A.&T.College)

R. B. Redfern

* Part Time

Percentage of time devoted to project _____

Date Submitted: _____, 195__. Signed: _____
Project Leader

Date Approved: _____, 195__. Signed: _____
Asst. State Director
of Extension Work

Date Approved: _____, 195__. Signed: _____
Director of Extension
Work, U. S. Department
of Agriculture

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PERSONNEL OF DAIRY EXTENSION SECTION

Name of Worker	Nature of Work	Territory
Hyatt, George Jr.	In Charge of Dairy Extension	Entire State
Blalock, T. C.	Dairy Cattle Breeding	Entire State
Farnham, F. R.	Production	Western Section
George, J. D.	Junior Dairy Program	Entire State
Redfern, R. B.	Dairy Manufacturing	Entire State
Rich, R. R.	Production	Southeastern Section
Roberts, W. M.	Dairy Manufacturing (Part Time)	Entire State
Senger, Marvin E.	Production Testing	Entire State
Wynn, R. L.	Production (A. & T. College)	Entire State
Pirnat, Miriam T.	Secretary	Office
Dowdy, Helen B.	Secretary	Office
Gurley, Millicent	Secretary	Office

INTRODUCTION

The major problems outlined in the 1954 Plan of Work to be faced in developing an adequate and profitable dairy industry in North Carolina were:

1. A lack of both quantity and quality roughage
2. Small farms inadequately mechanized
3. Large farms without adequately trained help
4. A relatively new industry
5. A widely scattered cow population in many counties
6. Lack of veterinarians and therefore maintenance of herd health and sanitation
7. Use of sires not tested for production and a low level of milk production inheritance in the females (4450 pounds yearly)
8. A shortage of experienced milk plant personnel
9. The production of poor quality dairy products in many instances
10. A lack of markets for manufactured milk especially in eastern North Carolina

These ten major problems are all embraced in the following six projects on which the Dairy Extension Specialists devoted most of their time during 1954:

1. Dairy Cattle Breeding
2. Production Testing
3. Junior Dairy Program
4. Dairy Farm Management and Herd Health
5. Cooperation with Breed Associations and Other Organizations
6. Dairy Manufacturing

During 1954 it was necessary to add milk marketing to the above six projects. This project required a considerable part of the Specialist's time. The Specialists also assisted with the Farm and Home Development

Program which is being inaugurated in several counties.

1954 RESULTS OR ACCOMPLISHMENTS

The year 1954 was in many ways much like 1953. Milk production hit a new all time high in North Carolina during 1954 as it did in 1953. The number of Grade A dairymen increased from 4599 in September of 1952 to 4906 in September of 1953 and 5222 in September of 1954.

Progress was made on most of the dairy extension projects in 1954. There was an increase in dairy 4-H work, number of cows on production test, number of dairymen feeding silage and making better use of home grown roughage and following a sound herd health program. The number of cows bred artificially although showing great gains in some areas remained about the same as in 1953 for the state as a whole.

Dairying suffered from the fourth consecutive severe drought in North Carolina during 1954. This very materially reduced the supply of roughage for winter feeding as well as the yield and improvement of pastures. Many counties were designated as drought disaster counties by the Federal Government and emergency hay and grain was made available to dairymen at reduced rates.

The droughts did stimulate greatly the building of trench and upright silos which has made much more silage available to dairymen than would have been fed otherwise.

Specific details of results and accomplishments are given in the following narrative covering each project worked on during 1954.

Project I - DAIRY CATTLE BREEDING

Since the genetic make up of an animal determines the ceiling for level

of milk production it is necessary to constantly try to raise this ceiling if we are to continue to make progress. One method of doing this on a mass basis is to make available to farmers through artificial breeding the services of production proved bulls. A program of this type requires constant supervision and during 1954 T. C. Blalock, leader of this project for North Carolina devoted approximately 80 percent of his time to this program.

Details Of Operation

As of December 1, 1954 there were sixty-one active artificial breeding associations in operation. With but two exceptions they are all organized as farmer cooperatives incorporated under the laws of the state of North Carolina. The other two associations, one in Forsyth and one in Transylvania, are operated by the county and partially supported with county funds.

Sixty of the Associations receive daily shipments of semen from the American Breeders Service. Until May 1, 1954 this service was supplied by two studs, one at Carmel, Indiana and one at Asheville, North Carolina. Through an airplane shuttle system one stud would furnish all the semen needed for one day and the other stud the following day. Early this year it became apparent that during the next heavy breeding season it would be impossible to obtain enough semen from one bull of each breed to supply the demands of both studs. This would mean collecting from two bulls each day and would result in far more semen than required. It would also mean almost doubling the number of bulls in each stud. This would be highly undesirable since it would mean lowering the quality of bulls in service.

By combining these two studs along with a third at Kansas City, Missouri into one stud at Carmel, Indiana two bulls could be collected from each

day and provide enough semen to serve the areas formerly covered by three bulls. This arrangement went into effect on May 1 of this year and has proved very satisfactory. The semen is now flown in bulk by commercial air from the Indianapolis, Indiana airport to a distribution center at Charlotte. Here it is repackaged for distribution to the local associations and is in their hands approximately twenty-four hours after it has been collected. For more efficient service two associations, Murphy and Macon, are serviced by a similar distribution center at Atlanta, Georgia.

All sixty of the associations receiving service from American Breeders Service receive semen from the three major dairy breeds - Guernsey, Holstein, and Jersey. Eighteen associations also receive Aberdeen Angus semen. They are: Alamance, Ashe, Buncombe, Cabarrus, Catawba, Coastal, Granville, Guilford, Haywood, Henderson, Iredell, Mecklenburg, Pitt, Rockingham, Rowan, Rutherford, Wake and Wayne. Thirteen counties, Alleghany, Ashe, Buncombe, Cabarrus, Guilford, Haywood, Henderson, Iredell, Macon, Murphy, Rockingham, Union and Wake, are also using some Brown Swiss semen.

Forsyth County continues to operate its own stud of Guernsey and Holstein bulls and breeds cows only in that county. The program has been partially supported by county funds since it was organized in 1946 as the first artificial breeding organization in the south.

Semen is supplied to eleven state institutional herds from a stud of Holstein bulls located at the College Dairy Farm in Raleigh. This program is proving to be an excellent source of information for genetic research.

Through an arrangement worked out with the North Carolina Ayrshire Breeders Association, American Breeders Service and Central Ohio Breeding Association of Columbus, Ohio Ayrshire semen is being supplied to sixteen

counties. The semen is flown in bulk by commercial air from Columbus to Charlotte where it is repackaged and shipped out in the same package with the rest of the organization's semen. The program is sponsored by the North Carolina Aryshire Breeders' Association and in order to be able to sell the semen at the same price as the other breeds they must assume the cost of air transportation from Columbus to Charlotte.

Short Courses

Three short courses for training inseminators were held during 1954 by the College Dairy Department with assistance from this office. A total of sixty-three men, representing four states, completed the training, bringing the total number trained since 1947 to approximately 440.

Educational Methods

To operate successfully an artificial breeding program must have:

1. A well-informed technician able to maintain a high non-return rate and in whom the farmers have complete confidence.
2. A sound financial organization operated by an active board of directors.
3. A group of farmers who believe in the program and understand the part they must play in obtaining the best results.

Following are some of the methods employed in 1954 to try to achieve the above objectives:

1. Technician Conferences. Since the inseminator is a key man in the success of a local artificial breeding association he must be contacted frequently and kept up to date on developments in the field. District conferences provide an excellent way of doing this.

During the year a total of eight such conferences were held. These were all dinner meetings, compliments of American Breeders Service, with

both agents and technicians attending. Several directors were also in attendance at some of the meetings.

One of the weakest links in our artificial breeding program is the failure of most of the technicians to put forth a real determined effort to sell the program to farmers who are not using it. In view of this, considerable time was devoted to this phase of training at this years conferences. Sound strip films on the techniques of selling were presented followed by a general discussion of the points brought out in the film. Some of the reasons farmers cite for not using artificial breeding were brought out and discussions followed on how these objections might be overcome.

2. Technicians' Contest. Another contest, called "Trading Hamburger for Steak", was started October 1, 1954 and ran through December 31, 1954. Cash awards to the top ten men will be made sometime in January, 1955. The name of the contest was derived from one of the main points used in determining the winner - that is the number of bulls the technician could get his farmers to sell and begin using artificial breeding. Interest in the contest has been very good and several bulls have been sold as a result of it. Following are the points used to determine the contest winner:

1. For each bull sold - 25 points.
2. For each numerical increase in cows bred in October - December 1954 compared to the same period in 1953 - one-half point.
3. For each percentage increase in number of first services during the contest period - 2 points.

3. Radio and Television. Two television programs on artificial breeding were produced during 1954. They were presented over stations WNCT - TV in Greenville and WNAO - TV in Raleigh. The programs dealt largely with the operation of the program and some of the advantages it offers North Carolina farmers.

Four presentations were made over the Statewide College radio network and twenty news articles for use by newspapers, radio and television stations were prepared and released in 1954. Several counties are continuing to use the series of six tape recordings that were made and released in 1953.

4. Circular Letter. A circular letter illustrating one of the advantages of using proved sires was prepared and made available to the county agents for distribution. The letter compared the production of the daughters of bulls proved by D.H.I.A. herd owners with that of the daughters resulting from artificial breeding. This proved to be a very popular letter as over 25,000 copies were requested. A copy of the letter will be found at the end of the Dairy Cattle Breeding summary.

5. Meetings. A total of seventeen general dairy meetings at which principles of breeding was the main topic discussed were held. A representative of this office was present at the annual meeting of twenty of the associations to discuss the program as well as some other phases of dairying. In assisting local organizations with their problems, meetings were held with the directors of twenty-one of the associations during the year.

6. Bulletin. A new leaflet entitled "Bigger Milk Checks Through Artificial Breeding" was prepared and is now being distributed. A copy is attached at the end of this section.

7. Newsletter. In order to keep technicians and agents currently informed a newsletter called "The AB News", is now being published quarterly. The letter includes articles on recent developments in the feed, hints for improving breeding efficiency, tips for increasing business and an up to date summary of the number of cows bred by each. This summary also shows the percentage increase or decrease over the same period of the previous year and ranks the associations accordingly. This serves as a constant

reminder as to the status of the business of each county organization. Among the more progressive associations there is considerable interest as to which county will be ranked on top. A copy is included at the end of this section.

8. Bull Selection. Before a bull can be purchased and placed in service by the stud he must be approved by a two-thirds majority of the bull committee of that particular breed. This committee is made up of a representative for each breed from each local county organization. Usually the committee gives its approval by mail after studying a complete written summary prepared on the bull by the studs chief bull buyer. However, whenever a bull is purchased nearby the members are invited to attend a meeting on the farm where the daughters of the bull are located. After inspecting them the committee is then asked to vote. To encourage attendance the stud pays representatives attending six cents per mile, up to 300 miles round trip, plus a $10.00 per diem.

In October, 1954 the stud purchased a proved Jersey bull from Ray Mayne and Son at Washington, North Carolina. This was the eleventh bull purchased in this state by American Breeders Service. A committee meeting was held on Mr. Mayne's farm and as a result of the extensive publicity given the meeting approximately one hundred people attended. The procedure involved in selecting and evaluating a proved bull was explained by Lee Lamb, chief bull buyer for the stud. A tape recording was made which was later used over several radio stations and several feet of movie film were taken for use on television.

9. Technician Recognition. To give recognition to those who do outstanding work over a period of years it was decided to award a certificate of meritorious achievement to all North Carolina inseminators who breed 10,000 first service cows. During 1954 the first award was made to Joe Wells,

technician for the Buncombe County association. Mr. Wells compiled his record between January 1, 1948 and February 1, 1954 and during this time his average non-return rate on first services was over seventy percent. The award was presented at the luncheon meeting at the annual North Carolina Dairymen's Conference. The excellent record compiled by this technician gave artificial breeding some very favorable publicity.

10. Proved Sire Heifer Sales. Since 1950 interest has been shown at various times in holding a promotional sale of heifers resulting from artificial breeding. It was felt that if properly handled it could accomplish three things:

1. Promote the artificial breeding program by demonstrating the type and value of animals that result from this program.
2. Offer North Carolina dairymen an opportunity to purchase locally disease-free cattle that will be profitable herd replacements.
3. Provide an additional source of income for several farmers.

In previous years it had been impossible to get enough animals pledged to seem it advisable to hold a sale. Most farmers felt they did not yet have enough of these animals on their own farm and were therefore unwilling to part with any. However, following a series of meetings early in 1954 with agents, technicians and farmers from the western part of the state, it was decided that the time had come when we should attempt such a sale. Interest was high and many farmers had indicated a willingness to sacrifice some of their better animals in order to get the sale started. Since it seemed to offer more advantages than any other area it was decided to hold the sale at the Hominy Valley Livestock Pavilion at Enka.

Committees, consisting of agents, technicians and dairymen, were appointed to draw up a set of rules and regulations to govern the sale. The group had agreed that if the sales were to be successful requirements must be very

rigid. The committee did an excellent job of setting the standards for the first sale. Probably the most important decisions were:

1. Relative to calving requirements.

2. Relative to positive identification of grade heifers.

3. Relative to type of animals selected. A copy of these reules can be found at the end of this section.

Following the decision to hold a sale at Enka it was decided by representatives of the associations in the Piedmont area to also hold one at Statesville. It was felt that if their sale could be held the day following the Enka sale there would be sufficient numbers to attract some of the out-of-state buyers who normally go further north to purchase their replacements. The potential of this market is almost unlimited and it was particularly gratifying to know that the decision to hold the two sales together resulted in attracting one buyer from Florida who purchased twenty-seven head.

Without question the two sales, the first at Enka on August 24 and the second at Statesville on August 25, were among the most successful held in North Carolina in 1954. A total of 78 animals was consigned, 34 Holsteins, 25 Guernseys, and 19 Jerseys that averaged $240.00 per head. In view of the fact that 44 of the 78 animals were grades the average is even more outstanding. There were 48 consignors representing 16 different counties. Perhaps as high as ninty percent of these men had never before consigned an animal to a public auction sale. It was very striking to note the excellent job these men had done of fitting and training their animals for this sale.and offered evidence that Extension had taught this group a new skill.

The total sale volume of almost $18,000.00 represents largely income that these 48 farmers would not have otherwise received during 1954. Estimates as to the premium these men received on their animals ranged from $100 to $150 per head. Probably no other single event has done more to focus attention on artificial breeding than these sales. They clearly

demonstrated the value of the program to the dairymen. Enthusiasm for future sales is high with three already planned for next year.

Progress and Results

1. Number of Services. During the past year approximately 46,300 cows were bred artificially in North Carolina. This represents a decrease of approximately 300 cows over the previous year and is the first time the program has failed to show an increase in number of cows bred.

It is felt that this slight drop in first services is a result of the changes in economic conditions on the farm. Milk prices were down slightly in many areas in North Carolina, drastically in some. Also many farm families owning cows have been forced to tighten their belt, so to speak, and by refusing to breed their cow for this year or by breeding her to a neighbors bull they feel they are able to save a little money. Inseminators indicate that they are actually breeding more cows in dairies but have lost in family cow numbers.

Due to lack of volume four associations were forced to discontinue service altogether in 1954. Two other counties discontinued service temporarily due to technician difficulty, which also was a result of lack of volume. Even though the volume of each individual association was small the combined total represented a net loss of over 500 cows in 1954.

Table I shows the growth of artificial breeding in this state since 1946 when the first association was formed.

Table I

Year	No. of Assns.	No. of Counties Served	No. of Cows Bred	60-90 Day non Return	% of Cows Bred Artificially
1946	1	1	663	-	0.2
1947	3	3	1,050	-	0.2
1948	34	39	16,073	56.5	5.0
1949	50	55	27,531	59.0	6.6
1950	56	63	34,424	65.0	9.6
1951	63	75	42.421	66.0	12.7
1952	65	81	43,843	61.7	13.1
1953	65	74	46,623	65.3	13.8
1954	61	72	46,300*	68.4**	13.8

*Month of December 1954 estimated.
**January through September 1954 only.

2. Organizations. For the first time since 1946 there were no new county artificial breeding associations organized in North Carolina in 1954. There are few if any areas left not already receiving service that have sufficient cow numbers to support an artificial breeding association.

The following four associations found it necessary to suspend operations during the past twelve months reducing to sixty-one the number of active associations:

Name of Association	Date Discontinued
Burke Breeders Cooperative, Inc.	June 1, 1954
Franklin Breeders Cooperative, Inc.	January 1, 1954
Lee Breeders Cooperative, Inc.	January 1, 1954
Montgomery Breeders Cooperative, Inc.	March 10, 1954

It will be very difficult to operate a program successfully in either

of the above four counties due to the relatively small number of cows in each county. It had been necessary for each of these organizations to operate with a part-time inseminator and when for various reasons he was forced to give it up they were unable to find a satisfactory replacement.

Two other counties - Person and Yancey - were forced to discontinue operations temporarily due to technician difficulty. Fortunately, each was able to finally locate a very capable person to take over the business and they are now stronger than ever before.

3. Fall Freshening and Breeding Efficiency. Heavy periods of surplus milk in the spring and summer months have caused increased emphasis to be placed on having cows freshen in the fall of the year. Table II shows that progress is being made in that direction since the numbers bred in November and December, 1953 and January 1954 represent approximately thirty-seven percent of the total for the twelve months listed below.

Table II

Month	Number Services	60-90 Day Non-returns
October, 1953	3,741	72
November, 1953	5,663	68
December, 1953	5,147	63
January, 1954	4,390	64
February	3,743	65
March	3,339	68
April	2,963	72
May	2,579	69
June	2,255	69

Table II (Continued)

Month	Number Services	60-90 Day Non-returns
July	2,333	68
August	2,430	70
September	2,912	71
Average		68.3

Breeding efficiency reached an all-time high in 1954. For the twelve month period ending in September, 1954 the average 60-90 day non-return rate was 68.3 percent. This is particularly gratifying since the first result farmers demand of artificial breeding is that it settle their cows promptly and efficiently. The constant attention this phase of the program has received since the drop in non-return rates in 1951 has begun to pay off.

4. Technician Turnover. Before a farmer will sell his bull and turn exclusively to artificial breeding he must have complete confidence in his inseminator. This is something that can only be gained over a period of time, making it advisable to have a few changes as possible in personnel. During 1954 it was necessary to replace sixteen main technicians. Of these only four were in associations that offered full-time employment, again emphasizing the need for increasing the volume in the weaker associations. It is highly significant to note that each of these sixteen associations showed a decrease in number of first services for the year and together they accounted for a total loss of 1279 first services. It is hoped that by more careful selection of personnel and aiding the association in increasing its volume the number of changes in technicians can be reduced in future years.

5. Ayrshire Semen. For the year ending November 30, 1954 a total of 604 first service cows was bred artificially with Ayrshire semen. This re-

presented a new high for this breed in North Carolina. The arrangements worked out to secure semen from the Central Ohio Breeding Association have proved very reliable with relatively few shipment failures during the year. As a result North Carolina Aryshire breeders are beginning to have confidence in the program. It has been a strain on the North Carolina Aryshire Breeders' Association treasury since they support it to the extent of about $40.00 per month. However it is felt that if the breed is to progress in this state the services of artificial breeding are a must. Tenative plans have been made to finance the program for the coming year by securing twelve breeders each of which will agree to finance the program for one month.

6. Progeny Performance. The progeny from artificial breeding continued to do well in 1954 at the District Junior Dairy Cattle shows. Although no official figures were kept a spot check indicated the percentage of them shown was about the same or up slightly over previous years with quality equally as good.

Production records reported in 1954 on the progeny from artificial breeding in North Carolina gives ample evidence of the value of this program to our dairymen while there still may be some slight changes in individual breeds it is felt that the overall comparison of 372 animals of all breeds represents an accurate appraisal of what these heifers are doing for their owners. If there were only 45,000 artificial heifers in production on North Carolina farms, and this is a conservative estimate, this extra milk at $5.00 per hundred weight would be worth over $1,000,000 each year. It should also be pointed out that the majority of these heifers have made their records during the last three years which have been extremely dry. Many of the records of their dams however were made prior to this period, making the increase even more significant. Following are the averages by breeds:

Guernseys

	Lbs. Milk	%	Lbs. Fat
84 daughters, 112 recs. ave.	7,828	4.83	378
43 daughters, 62 recs. ave.	7,771	4.86	378
43 dams, 97 recs. ave.	7,686	4.72	363
Difference	+85	+.14	+15

Holsteins

	Lbs. Milk	%	Lbs. Fat
438 daughters, 606 recs. ave.	11,522	3.59	414
277 daughters, 397 recs. ave.	11,688	3.57	417
277 dams, 694 recs. ave.	11,126	3.50	389
Difference	+562	+.07	+28

Jerseys

	Lbs. Milk	%	Lbs. Fat
106 daughters, 132 recs. ave.	7,606	4.89	372
52 daughters, 71 recs. ave.	7,526	5.14	387
52 dams, 110 recs. ave.	7,342	5.01	368
Difference	+184	+.13	+19

All Breeds

	Lbs. Milk	%	Lbs. Fat
641 daughters, 850 recs. ave.	10,310	3.90	402
372 daughters, 530 recs. ave.	10,653	3.83	408
372 dams, 901 recs. ave.	10,199	3.76	383
Difference	+454	+07	+25

7. List of Associations. Following is a list of all associations that operated between December 1, 1953 and November 30, 1954, the number of cows bred, and the percentage of total cows bred artificially during this period:

Association	No. of Cows Bred	% of Cows in Area Bred
Alamance	1943	28.0
Alexander	934	24.5
Alleghany	418	5.0
Anson	268	6.4
Ashe	510	4.1
Avery	69	2.1
Buncombe	2774	23.6
Burke	111	3.4
Cabarrus	396	7.1
Caldwell	763	20.0
Caswell	380	9.6
Catawba	1554	19.3
Chatham	444	6.3
Cleveland	810	9.6
Coastal	852	17.1
Columbus-Bladen	305	5.4
Cumberland	353	13.8
Davidson	931	11.4
Davie	938	16.5
Durham	209	9.4
Eastern	525	16.7
Forsyth	1993	40.2
Gaston	631	10.8
Granville	316	7.2

Association	No. of Cows Bred	% of Cows in Area Bred
Guilford	2466	27.2
Halifax	153	5.9
Harnett	106	3.9
Haywood	1053	12.7
Henderson	1638	30.8
Iredell	1622	12.3
Lenoir	210	8.3
Lincoln	1394	20.4
Macon	893	21.3
Mecklenburg	1145	13.6
Mitchell	187	5.9
Montgomery	18	1.1
Moore	302	11.9
Murphy	563	10.8
McDowell	236	11.6
Northampton	58	2.9
Orange	889	16.9
Person	97	2.5
Pitt	292	13.8
Randolph	1061	12.3
Richmond	250	15.7
Robeson	449	9.3
Rockingham	997	18.6
Rowan	903	9.5
Rutherford	716	14.6
Sampson	216	4.8
Stanly	832	18.7

Association	No. of Cows Bred	% of Cows in Area Bred
Stokes	346	6.5
Surry	543	7.3
Transylvania	279	15.8
Twin	216	4.5
Union	1317	13.2
Vance-Warren	773	11.2
Wake	1287	19.2
Watauga	257	3.7
Wayne	618	17.6
Wilkes	442	4.1
Yadkin	1087	16.9
Yancey	230	4.8

THE AB NEWS

for

NORTH CAROLINA

COUNTY AGENTS and TECHNICIANS

VOLUME I JULY 1954 Number 1

IT CONTINUES TO GROW

Although is this country it was sixteen years old last May artificial breeding continues to grow. The 4,845,222 cows bred in 1953 was an all time high and represents 20 per cent of our U. S. dairy cattle population. Many people are now beginning to wonder how long this growth will continue and where it will stop. Of course only time will provide the final answer but it's my opinion we'll see a lot more growth before it begins to level off. There can be no doubt but that this program offers a dairyman the surest and quickest way to improve his herd through breeding and as world conditions make us become more efficient producers of milk, good breeding will be a must for our dairymen. I fully expect to live to see the day when we'll be breeding over one-half of our cows artificially. In Holland they have already passed the one-third mark.

Where do we stand in North Carolina? As the table below shows our growth was very rapid until 1952 but has been slow since that time. Does this mean we have reached the saturation point in N. C.? Certainly not! During 1953 we bred only about 12 per cent of our cows, a little over one half the national average. Yet our production of 4490 pounds of milk per cow indicates we need to utilize this good breeding even more than some other states.

Year	Cows Bred	Ave./Assoc.	Year	Cows Bred	Ave./Assoc.
1948	16,073	472	1951	42,421	673
1949	27,531	551	1952	44,578	686
1950	34,424	615	1953	46.623	606

In addition we need to breed more cows in order to make our associations financially sound and enable them to employ well qualified experienced men. Last year 18 associations bred less than 300 cows; 31 less than 500 and only 17 bred over 1,000. We know that to be on a sound financial basis an association should breed at least 500 cows and to be able to employ a full time man you must breed over 1,000. There is hardly a single one of these

PUBLISHED QUARTERLY BY THE DAIRY EXTENSION OFFICE, NORTH CAROLINA STATE COLLEGE, RALEIGH, N. C.

counties that with the right kind of effort could not breed 500 cows. Most of those now breeding between 500 and 1000 could go beyond the 1000 mark this year. It takes coordinated effort on the part of everyone, but it has been demonstrated that it can be done. Let's do it!

Where Does Your Association Rank?

On Page 4 a summary of the breeding results through May shows a six per cent increase over the same period last year. Eastern Association leads with a whopping 122.7 per cent increase followed closely by Richmond with 48.2 per cent. If your association is one of the 28 showing a decrease there is a reason for it. The reasons of course will vary from county to county but most of them can be corrected. Why not call your board together, analyze your problems and make some definite plans to put your association on the "plus side"?

Technicians' Contest

Many of you will recall the technicians' contest we held a year ago last fall. If seemed to generate some enthusiasm and several men have expressed interest in holding another one this fall. If you would favor one how about dropping me a line? Send me your suggestions on conducting the contest and indicate whether your group would be willing to contribute to a prize fund.

Pointers on Conception Rate

Still the first thing farmers expect of artificial breeding is that it settle cows promptly and efficiently. Poor conception rates either now or sometime in the past are one of the biggest obstacles in the path of growth in many counties. With hot summer weather already here now's the time to really watch the temperature of your semen. The nearer to 38° F. you can keep it the better job it will do for you. To be sure of course, you need a thermometer. Bacteria grow rapidly in hot weather so watch your sanitation. A little extra attention will not only raise your percentage but it'll save you money by eliminating some expensive repeats. If your refrigerator and kit are worn beyond repair now would be an ideal time to replace them. However, many an old kit can be made to look like now. Any of you who attended the last series of technician meetings and saw the condition of some of the old kits, even after several years service, know they can be made to look good with a little "elbow grease" and paint. I'd like to challenge each of you to really clean your kit and see if one of your customers doesn't take notice and compliment you on it within one week. Why not try it?

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Don't forget the Proved Sire Heifer Sales this fall--August 24 at Enka and August 25 at Statesville. Talk 'em up among your dairymen.

Watch Your Credit

Current economic conditions make it advisable to tighten up on your credit and keep outstanding accounts fairly current. The older an account the more difficult it is to collect. Carry a blank check book on every bank in the county and make an effort to collect every service fee before leaving the farm. Don't be afraid to ask for your money. Send out your regular monthly statements and time them so they'll arrive just ahead of the milk check. If you'll really work on your outstanding accounts, you'll have no credit trouble.

Selling Points

Did you know that:

* Since over 30 per cent of all calves registered last year were artificial it means we are breeding a higher percentage of our purebreds than our grades?

* The feed required by the average herd bull will keep a cow producing 8000 pounds of milk?

* The daughters of all N. C. bulls proved in DHIA during 1952-53 produced an average of 239# of milk less than their dams? During the same time our AB daughters produced an average of 269# more than their dams. How much would this difference be worth in a 20-cow herd?

* The daughter averages on bulls now available is the highest ever?

The Latest on Frozen Semen

A recent letter from Dr. Irv. Elliott reports excellent progress in their research on frozen semen. They've now bred 15,000 cows and he predicts it's only a matter of time until we'll be routinely using frozen semen. There are, however, two principal obstacles yet to be overcome. The first is a variable and somewhat lower (3 to 8%) non-return rate than they obtain with "hot" semen. Some samples and some bulls do not seem to freeze as well as others. Incidentally it appears that Cottonade Emmett is by quite a bit the best bull they've ever used for freezing. A sample of his semen collected last November just before he died is still being used with good results. It's still too early to say just how long it can be held but we know it 'll be many months. The second problem is that of storage costs. However, their work using liquid nitrogen as a refrigerant appears to offer a way of reducing this item considerably. Although he won't predict when we'll be using it, it's obvious frozen semen will soon become a reality.

WHERE DOES YOUR ASSOCIATION RANK?

RANK	COUNTY or ASSOCIATION	NO. BRED JAN.-May 1953	NO. BRED JAN.-May 1954	% Inc. or Dec.
1	Eastern	110	245	+122.7
2	Richmond	85	125	+48.2
3	Catawba	434	635	+46.3
4	Pitt	83	120	+44.6
5	Cleveland	274	383	+40.5
6	Col.-Bladen	107	142	+32.7
7	Wilkes	176	228	+29.5
8	Lincoln	499	637	+27.6
9	McDowell	84	105	+25.0
10	Coastal	367	456	+24.3
11	Murphy	241	298	+23.7
12	Sampson	80	99	+23.7
13	Rutherford	248	304	+22.6
14	Guilford	708	865	+22.1
15	Davidson	332	399	+20.2
16	Stanly	288	343	+19.1
17	Harnett	34	39	+14.7
18	Caldwell	260	289	+11.2
19	Yadkin	428	475	+11.0
20	Rockingham	342	379	+10.8
21	Iredell	647	710	+9.7
22	Buncombe	1043	1136	+8.9
23	Transylvania	109	118	+7.6
24	Henderson	615	657	+6.8
25	Mitchell	81	86	+6.2
26	Mecklenburg	447	472	+5.6
27	Cumberland	140	144	+2.9
28	Forsyth	781	792	+1.4
29	Macon	319	321	+ .6
30	Anson	131	131	0
31	Moore	158	156	-1.3
32	Haywood	408	393	-3.7
33	Alleghany	192	184	-4.2
34	Wayne	295	281	-4.7
35	Chatham	221	209	-6.7
36	Alexander	382	351	-8.1
37	Orange	446	407	-8.7
38	Alamance	754	670	-11.1
39	Wake	482	424	-12.0
40	Ashe	230	198	-13.9
41	Northampton	50	43	-14.0
42	Randolph	466	395	-15.2
43	Stokes	149	125	-16.1
44	Union	686	568	-17.2
45	V-W	341	272	-20.2
46	Cabarrus	219	172	-21.4
47	Davie	448	352	-21.4
48	Rowan	506	385	-23.9
49	Surry	291	220	-24.4
50	Gaston	385	291	-24.4
51	Caswell	189	140	-26.0
52	Yancey	145	105	-27.6
53	Burke	124	87	-29.8
54	Lenoir	81	56	-30.9
55	Twin	137	92	-32.8
56	Avery	49	26	-46.9
57	Person	110	32	-70.9
58	Montgomery	61	10	-83.6
	Durham	---	82	---
	Granville	---	107	---
	Halifax	---	53	---
	Robeson	---	188	---
	Watauga	---	116	---
	TOTAL	17650	18671	5.8

FARMERS LIKE THE PROGRAM

They're breeding more and more cows

No. Assoc.	Year	No. Cows Bred
34	1948	16,073
50	1950	34,424
65	1953	46,754

THEY LIKE THE WAY THEIR HEIFERS FROM ARTIFICIAL BREEDING ARE MILKING

Since only a small percentage of our dairy cows are on test the number of animals on which records are available is limited. However, there are now DHIA records on 190 of these heifers located on over 75 different farms in this state to show how they are producing as compared to their mothers.

	Milk	%	Fat
190 daughters ave.	10,239	3.92	401
Their 190 dams ave.	9,971	3.83	383
A difference of	+ 268	+ .09	+ 19

SUPPOSE LAST YEAR EACH COW IN YOUR HERD HAD PRODUCED AN ADDITIONAL 268 POUNDS OF MILK, HOW MUCH BIGGER WOULD YOUR MILK CHECK HAVE BEEN?

THEY LIKE THEIR TYPE

During 1952 and 1953, 38 per cent of all heifers shown at the N. C. District Junior Shows were from artificial breeding. Eighty–nine per cent of them were good enough to win either a red or blue ribbon. They are the kind that will stay in the herd for a long time.

ARTIFICIAL BREEDING IS WORKING IN NORTH CAROLINA

COWS WILL SETTLE

Year	% Settled on First Service
1953	67
1952	65
1950	66
1948	59

BUT . . . FOR BEST RESULTS IT REQUIRES

1. A well–trained, experienced technician.
2. Good, fertile semen
3. Disease free cows
4. and A GOOD HERDSMAN

THEN YOU CAN EXPECT

to settle on first service about 7 out of 10.

and 9 out of 10 to "catch" in three services.

FOR MORE INFORMATION ABOUT THE ARTIFICIAL BREEDING PROGRAM IN YOUR COUNTY, CONTACT YOUR COUNTY FARM AGENT

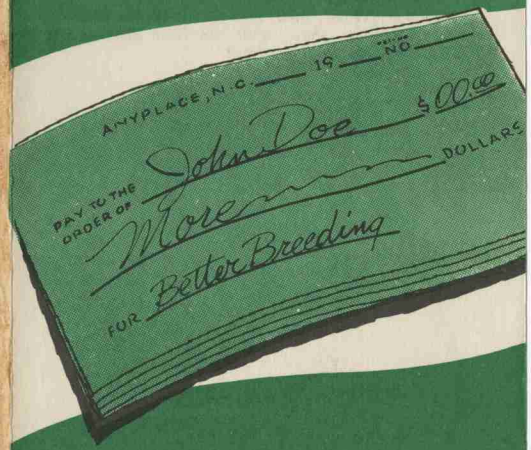
Published by

N. C. AGRICULTURAL EXTENSION SERVICE

N. C. State College of Agriculture and Engineering of the University of North Carolina and U. S. Department of Agriculture, Co-operating, N. C. Agricultural Extension Service, D. S. Weaver, Director, State College Station, Raleigh, N. C. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

SEPTEMBER, 1954 EXT. FOLDER NO. 111

Bigger Milk Checks



through

ARTIFICIAL BREEDING

BIGGER MILK CHECKS THROUGH ARTIFICIAL BREEDING

T. C. BLALOCK
Dairy Extension Specialist

The continuous use of proved sires, like those available through artificial breeding, is the surest and quickest way for North Carolina dairymen to breed high producing herds.

The following data taken from the USDA Holstein herd at Beltsville, where seven successive proved sires were used over a period of 28 years, show what has been done with this type breeding program.

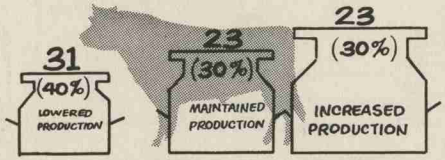
Bull No.	No. of Daughters	Lbs. of Milk	% Test	Lbs. of Fat
1	33	13,493	3.49	469
2	31	14,014	3.57	499
3	9	11,685	3.95	466
4	5	14,828	3.78	559
5	52	15,026	3.99	598
6	47	16,289	3.84	624
7	20	15,457	3.93	607

GOOD PROVED BULLS ARE SCARCE

Unfortunately, only a very small percentage of herd sires selected as young bulls prove to be real "herd builders." During 1952 and 1953 North Carolina dairymen enrolled in DHIA proved 77 bulls. Although they are normally better dairymen, the proofs obtained and shown below on these bulls show that on the average their daughters produced less milk (239 lbs.) than their mothers.

	Lbs. Milk	Lbs. Fat
The bulls daughters ave.	8,742	403
Their dams ave.	8,981	408
A difference of	−239	−5

OF THESE 77 BULLS



in their daughters as compared to their dams. This means that these dairymen had about one chance in three of picking a good bull.

IN NORTH CAROLINA THE PROVED BULLS USED IN ARTIFICIAL BREEDING RANK IN THE TOP 2 PER CENT OF ALL BULLS PROVED IN THE UNITED STATES!!

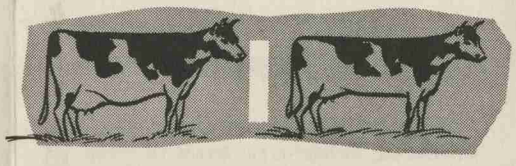
IT'S A CHEAP WAY TO GET GOOD COWS

When you consider--

*The cost of keeping a bull

*The quality of calves obtained

ARTIFICIAL BREEDING IS CHEAP:



It takes no more feed, labor, or housing to raise a high producing heifer than it does a low producer--

BE SURE OF HER INHERITANCE

BY USING A PROVED BULL

The average herd bull will require each year--

Concentrates (Grain)	1500 lbs.
Hay	1½ to 2 tons
Silage	½ to 1 ton
Bedding	1 ton
Man Labor	100 hours

WHAT CAN YOU FURNISH THESE FOR ON YOUR FARM?

IT'S SAFE

A dairy bull is the most dangerous animal on the farm. Each year they kill or injure many people.

IT AIDS IN THE CONTROL OF DISEASE

Every bull is thoroughly examined and found free from Bangs, TB, vibrio and trichomoniasis. Drugs are added to the semen to further guard against the spread of disease.

Federal Extension Service
U.S. Dept. of Agriculture

EXHIBIT E.

Outline for Annual Narrative Report
of Subject-Matter Specialists

General Comments

The annual narrative report should be closely related to the plan of work made at the beginning of the year. Include emergency work as well as the planned activities. One overall report is preferable to a separate report from each specialist, if there is more than one specialist for a given project.

AMA Activities. Each person assigned wholly or in part to an approved AMA project should identify and cover his contribution to that work as a part of the report for that project.

Outline

I. Cover page. Each report should be adequately identified as to State, line of work, year, names and titles of specialists whose work is covered, percentage of time devoted to extension, and division of responsibility where two or more specialists are involved in the project.

II. Table of contents. Make detailed enough and show page numbers, so that the reader can quickly find various items in the report.

III. Results or accomplishments.

A. Make an overall appraisal of the progress made during the year, in terms of what you planned to accomplish.

B. For each major phase of work give:

1. Proportion of time devoted to it.
2. Specific examples of accomplishments, including work of county extension agents and others.

Concise statements covering the essential points that can be readily quoted are especially useful. Include facts, figures (show savings, costs, and gains, where applicable), and other definite indications of the use people are making of the subject matter taught through your project.

IV. Indicate what was done at the State or area level, to directly advance the extension program in your subject-matter field, and to support the work under way in the counties. (Omit items not applicable.)

A. Show work with State extension supervisors of agriculture, home economics, and youth work, in program planning.

B. Comment on assistance given to or received from other subject-matter specialists and research personnel.

C. Show assistance given to or received from various State, Federal, and other agencies or interest groups, in the promotion of programs in your subject-matter field.

V. Describe the assistance given county extension workers with both adult and youth work. (Omit items not applicable.)

A. In obtaining and analyzing local factual information and getting it into the county planning.

B. In planning, organizing, and conducting their subject-matter teaching, including new subject matter.

C. In obtaining the cooperation of local organizations and commercial agencies.

D. In selection, training, and use of volunteer local leaders.

E. In choice, preparation, and use of teaching devices (circular letters, news stories, visual aids, and the like). Include new teaching materials you may have prepared during the year.

F. In methods of evaluating and checking results of teaching techniques:

1. Records systems.
2. Checking results against goals selected.
3. Evaluation of results obtained, including preparation and use of rating sheets.
4. Local studies to determine more effective methods.

G. Indicate on State maps the counties where major phases of your work received emphasis.

VI. Describe any contribution you may have made to regional extension programs involving several States.

VII. Special -- NOTE:

A. In separate sections of your report tell how your work during the year contributed to--

1. Farm unit approach (farm and home planning, farm and home development, balanced farming, etc.)

2. Marketing (see AMA note on other side.)

3. Public affairs.

B. Record in case-history form one significant achievement of extension work in your field of subject matter. Give enough detail of problem, methods used, and results, to make the story complete.

RULES AND REGULATIONS FOR THE PIEDMONT NORTH CAROLINA
PROVED SIRE HEIFER SALE
AUGUST 25, 1954

1. Sale to be held at the Statesville Fair Grounds, Statesville, N. C.

2. Sales starts promptly at 12:30 p.m.

3. Lunch available on the grounds.

4. All animals must be in sale barn by 5:00 p.m., August 24, 1954.

5. Sale will consist of Grade and Registered Guernsey, Holstein, and Jersey Cattle that are daughters of Proved Sires and will calve between August 1, 1954 and December 1, 1954. No young open heifers will be accepted.

6. All Grade artificial daughters of Asheville bulls must be positively identified as to sire by securing through the technician a certificate of identification issued by the stud. Owners consigning animals must furnish breeding dates. If bred artificially the breeding receipt will be accepted and should be transferred to the buyer.

7. Registration and transfer papers must be furnished on all purebreds at seller's expense.

8. Information on all animals nominated for the sale must be in the hands of Roger Murdoch, County Agent's Office, Statesville, N. C., not later than June 1, 1954.

9. Final selection will be made by the sales committee between June 1 and July 1, 1954.

10. The sales committee reserves the right to reject any animal that, in its opinion, does not meet the requirements as outlined by the Steering Committee.

11. All animals must be properly fitted (clipped and clean) and halter broken.

12. All animals must be negative to T.B. and Bangs tests not more than thirty (30) days prior to sale and must come from herds that are either accredited for Bangs and T.B. or were negative to these tests within the last 12 months. Copies of health papers must accompany consigned animals.

13. The sale is to be operated on a non-profit basis and shall be financed by charging a small commission of approximately 7-10% of sale price depending upon expenses.

14. Daughters of Proved Sires other than those used by the Asheville stud must be sired by a Proved Sire whose daughters average or exceed on a 2x,305, M.E. basis a level of milk and fat listed below:

Guernsey	8,600M	420 B.F.
Holstein	12,800M	450 B.F.
Jersey	8,200M	430 B.F.

These are production levels recommended by the American Dairy Science Association for bulls going into artificial breeding service.

North Carolina State College

Agricultural Extension Service

Awards This Certificate Of

Meritorius Achievement

to

_____

In Recognition for his outstanding work of artificially inseminating over 10,000 cows while serving as an artificial Breeding Technician in North Carolina. Awarded at the annual North Carolina Dairyman's Conference this_____day of_____19___.

_____
CHANCELLOR

_____
DEAN, SCHOOL OF AGRICULTURE

_____
DIRECTOR OF EXTENSION

_____
IN CHARGE, DAIRY EXTENSI

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF NORTH CAROLINA

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING, NORTH CAROLINA COUNTIES AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

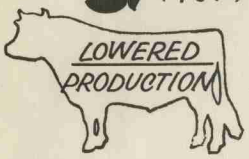
EXTENSION SERVICE
COUNTY AGENT WORK

DEAR DAIRYMAN,

HOW GOOD ARE YOU AT PICKING A BULL?

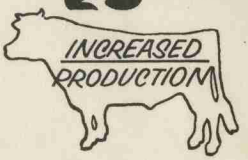
DURING 1952 AND 1953 DAIRYMEN ON DHIA TEST IN NORTH CAROLINA, USUALLY OUR BETTER DAIRYMEN, RECEIVED PROOFS ON 77 BULLS USED IN THEIR HERDS. THESE PROOFS SHOWED THAT WHEN THE PRODUCTION RECORDS OF THE DAUGHTERS OF THESE BULLS WERE COMPARED WITH THOSE OF THEIR DAMS THAT -

31 (40%)



23 (30%)

23 (30%)



ON THE AVERAGE THEIR DAUGHTERS PRODUCED

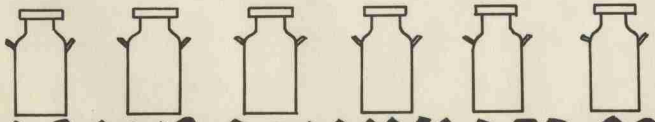
239 POUNDS OF MILK **LESS** THAN THEIR MOTHERS!!

DURING THIS SAME PERIOD THE DAUGHTERS RESULTING FROM ARTIFICIAL BREEDING IN NORTH CAROLINA PRODUCED AN AVERAGE OF

269 POUNDS OF MILK **MORE** THAN THEIR MOTHERS!!!

THIS IS A DIFFERENCE BETWEEN THESE TWO GROUPS OF

508 POUNDS OF MILK OR A TOTAL OF



SIX CANS OF MILK PER COW!

ARE YOU TAKING ADVANTAGE OF THIS METHOD OF HERD IMPROVEMENT? IF NOT, COME IN AND SEE US ABOUT IT.

Sincerely yours,

_____ Co. Agt.

PROJECT II - PRODUCTION TESTING

Production testing is essential in providing the necessary information for efficient herd management. It is also basic in a good dairy extension program. Therefore, it is definitely a long-time project and must be continued year after year if it is to provide the maximum benefits to dairymen for more efficient operation. Continuous production testing of all cows is the best guide any dairyman can have to increase and maintain the production level of his herd. This, in turn, will increase his income and afford him and his family a better living. Table I is a summary of returns of cows at different production levels in North Carolina Dairy Herd Improvement Associations in 1953 and will illustrate that high producing cows give higher returns.

Table I

Returns at Different Levels of Production
North Carolina DHIA Study - 1953

Pounds B'Fat	Value of Product	Cost of Roughage	Cost of Grain	Total Cost of Feed	Value Above Feed Cost	Return Over* All Costs
204	$321.81	$ 98.39	$ 78.85	$177.24	$144.57	$-32.67
300	457.42	104.34	90.11	194.45	262.97	68.52
397	583.00	104.13	107.62	211.75	371.25	159.50
496	698.88	106.12	145.92	252.04	446.84	194.80

*Assuming feed cost is one-half the cost of producing milk

This table emphasizes the advantage of high producing cows and clearly illustrates that production testing is a good measuring stick to use in improving our dairy herds. Production records are the basis for intelligent culling of low-producing and unprofitable cows, improvement of feeding and management practices, and selecting replacements from high-producing cows in

planning a sound breeding program. In addition, production records stimulate interest and a desire for better dairying. Table II and Table III will show that these factors have been effective in increasing production and returns for DHIA members. However conditions have not been as favorable the past two years for North Carolina dairymen due to the extreme dry weather conditions. This is reflected in Table II with an increase in feed cost resulting in a decrease in returns over feed cost and over all costs.

Table II

A Summary of Average Production, Feed Cost, Value of Product and Returns Over Feed Cost For All Cows in DHIA by Years

Year	Average Milk Production	Average B'Fat Production	Value of Product	Feed Cost	Value Above Feed Cost	Return Over All Costs*
1941	7188	317	$264	$ 87	$177	$ 90
1942	7019	313	271	97	174	77
1943	6676	301	279	113	166	53
1944	7215	316	324	145	179	34
1945	7545	337	364	161	203	44
1946	7798	334	393	173	220	47
1947	7291	321	423	188	235	47
1948	8048	339	487	215	272	57
1949	7799	340	495	203	292	89
1950	8076	341	485	186	299	113
1951	8158	351	500	194	306	112
1952	8126	337	507	209	298	89
1953	8030	326	503	221	282	61

*Assuming feed cost is one-half the cost of producing milk

When the average DHIA cow is compared to the average production of all North Carolina dairy cows, the value of production testing becomes a sizable figure and greatly exceeds its cost to the dairymen. The average production

of all North Carolina dairy cows in 1953 was 4490 pounds of milk and 200 pounds of butterfat. The average production for DHIA cows of the same year was 8030 pounds of milk and 326 pounds of butterfat. This is a difference of 3540 pounds of milk and 126 pounds of butterfat per cow in favor of DHIA cows. By fitting these production averages in Table I, the value of production testing to North Carolina dairymen can be easily recognized. Table III will show a comparison of average production of all North Carolina dairy cows with that of cows tested in North Carolina Dairy Herd Improvement Associations over the years. It should be noted that the rate of increase in production per cow has been much greater for cows in Dairy Herd Improvement Associations. The decline in average production per cow for DHIA cows the past two years is due primarily to the marked increase of the number of herds enrolling in DHIA test and the adverse feed conditions throughout the state.

Table III

Average Production of all Milk Cows and DHIA Cows
In North Carolina

	All Cows		DHIA Cows	
Year	Milk	B'Fat	Milk	B'Fat
1930	3770	162	6298	267
1935	3450	148	6359	278
1940	3930	173	7188	317
1945	4030	181	7545	337
1950	4460	198	8076	341
1951	4450	198	8159	351
1952	4500	198	8126	337
1953	4490	200	8030	326

It is impossible to determine the total influence of production testing on dairy farming in North Carolina but it should be recognized that herds with production records are demonstrating better dairy practices and pro-

viding herd sires and foundation females for other dairymen throughout the state. Outstanding bulls used for artificial breeding are selected from herds on test on the basis of production of their daughters and other animals in the pedigree. Production records are also serving as a basis for the selection of 4-H dairy calves.

A large number of dairy cows must be on continuous test if dairymen the state over are to be able to breed and raise high-producing herds that are more profitable to them.

Dairy Herd Improvement Associations

The U.S. Department of Agriculture and the North Carolina Agricultural Extension Service cooperate in carrying out this project with the dairymen in the state. County agents take an active part in organizing and guiding the local Dairy Herd Improvement Association in their respective counties. Dairy specialists train the testers, help supervise their work in the field and assist dairymen with problems confronting their association. The county agents and dairy specialists work closely together with all problems confronting the testers and the dairymen. This is the most practical type of production testing providing the most information for herd management for North Carolina dairymen.

Four new associations were started in 1954 with a further increase in number of cows being tested per association. As of November 30, 1954 there were 494 herds with 16,979 cows enrolled in DHIA test. This is an increase of 41 herds and 1741 cows over a year ago and is the largest number of cows ever to be enrolled in DHIA in North Carolina. Table IV shows the growth of DHIA testing in North Carolina by years.

Continued emphasis was placed on reorganization of the existing DHIA

Table IV

Dairy Herd Improvement Associations
In North Carolina by Years

Jan. 1 of each year	Ass'ns Active	Herds on Test No.	Herds on Test %	Cows on Test No.	Cows on Test %	Average Per Association Herds	Average Per Association Cows
1925	2			648			
1926	5	88	8.0	2722	.9	17.6	544
1927	5	75	6.8	2484	.8	15.0	497
1928	5	77	7.0	2786	.9	15.4	577
1929	8	128	11.6	4235	1.5	16.0	529
1930	7	116	10.5	3719	1.3	16.5	531
1931	7	88	8.0	3154	1.0	13.0	451
1932	8	90	8.1	3089	.9	11.2	386
1933	9	89	3.1	3020	.8	10.0	336
1934	7	82	7.4	2697	.7	11.7	385
1935	6	81	7.3	2936	.8	13.5	489
1936	6	88	8.0	3713	1.0	14.7	619
1937	8	100	9.0	4389	1.2	12.5	549
1938	8	109	9.9	4800	1.4	13.6	600
1939	10	128	11.6	5475	1.6	12.8	548
1940	11	158	14.3	6471	1.9	14.4	588
1941	11	160	14.5	6913	2.0	14.5	628
1942	12	187	16.9	7986	2.2	15.6	666
1943	9	135	12.2	5566	1.5	15.0	618
1944	8	132	11.9	5512	1.4	16.5	689
1945	7	104	9.4	4132	1.0	14.9	590
1946	6	79	7.1	3100	.8	13.2	517
1947	15	141	12.8	4676	1.2	-	-
1948	23	-	16.4	5751	1.5	-	-
1949	22	201	18.2	6226	1.7	-	-
1950	19	283	25.6	8403	-	-	-
1951	21	265	24.0	9075	2.3	12.6	432
1952	24	298	27.0	10092	2.7	11.9	404
1953	30	418	-	13654	3.5	13.9	455
1954	32	456	-	15387	3.8	14.3	484

*Based on 1940 census report of herds of 15 cows or more kept on farms for milk.

testing in numerous areas throughout the state as well as to establish local testing organizations. This included increasing the average number of herds and cows in an association, and at the same time eliminating excessive travel for supervisors and making travel charges to dairymen more reasonable and uniform. Even though the average number of herds and cows is still low per association (see Table IV) some have sufficient numbers within a reasonably small area to make testing jobs somewhat more attractive salary-wise as well as in convenience, especially for married men. The low average in number of herds and cows is attributed in part to several associations that have only a part-time job and some new associations not filled to maximum membership as yet. More work needs to be done, however, along this line to get more efficient and maximum service from testers specially trained for this work. Table V is a listing of the active associations in North Carolina including the counties covered, and number of herds and cows in each. Figure I will show the distribution of DHIA testing throughout the state in number of cows on test by counties.

Table V

Active DHIA's in North Carolina
November 30, 1954

Association	County or Counties Covered	Tester	No. Herds	No. of Cows
Alamance*	Alamance	B. Martin	8	385
Alexander*	Alexander	L. Payne	5	89
Buncombe*	Buncombe & Yancey	T. Burleson	14	434
Burke-Caldwell*	Burke & Caldwell	K. Sims	21	519
Capital # 1	Durham & Person	G. E. Hager	8	330
Capital # 2	Wake & Granville	C. Rambeau	13	620
Catawba # 1*	Catawba	H. Mauser	9	311
Catawba # 2*	Catawba	J. Wilkinson	17	483
Catawba # 3*	Catawba & Lincoln	C. Burke	4	94

Table V (Continued)

Association	County or Counties Covered	Tester	No. Herds	No. of Cows
Davidson*	Davidson	W. Mainous	14	435
Davie*	Davie	E. Greble	8	227
East Central*	Wayne, Lenoir, Onslow, Carteret, Craven & Wilson	H. B. Wilkie	23	1169
Forsyth*	Forsyth & Stokes	E. Greble	25	589
Golden Belt	Granville, Vance, Warren, Halifax, N. Hampton, & Bertie	M. Hughes	12	387
Iredell*	Iredell	T. C. Henderson	16	535
McDowell* (Org. 9-54)	McDowell	R. J. Duncan	4	57
Macon	Macon	J. C. Williams	6	108
N. Eastern*	Pitt, Edgecombe, Nash, & Beaufort	D. Brown	18	641
N. Western	Watauga, Ashe & Avery	E. Moretz	6	151
Orange-Chatham*	Orange-Chatham	G. Reynolds	27	893
Piedmont I-A	Guilford	R. McKoin	23	843
Piedmont I-B	Guilford Rockingham	E. Harrison	24	717
Piedmont 2	Mecklinburg & Cabarrus	M. Black	10	385
Piedmont 6*	Union	K. Williams	13	339
Piedmont 9	Rowan	T. S. Sloan	10	293
Randolph*	Randolph	C. Glass	22	843
S. Eastern*	Cumberland, Sampson, Scotland, Pender, Duplin Robeson, Bladen, Columbus & New Hanover	E. Rivenbark	23	833
S. Western 1*	Henderson	H. K. Lutz	19	757
S. Western 2	Haywood	T. Burleson	8	273
S. Western 3	Cherokee & Clay	W. P. Walker	11	313
S. Western 4	Polk, Rutherford, Gaston, Lincoln	C. R. Nichols	17	800
S. Western 5	Cleveland	J. Hunt	11	313
State Inst.*	Wake, Burke, Wayne, Watauga, & Lenoir	J. Washburn	9	720
Tri-County*	Lee, Moore, Stanly, Montgomery	C. Burleson	15	506

Table V (Continued)

Association	County or Counties Covered	Tester	No. Herds	No. of Cows
Yadkin*(Org.12-53)	Yadkin	L. Thomasson	16	410
Miscellaneous**	Caswell	McCall & Stephens	5	177
35 Associations			494	16,979

* Properly organized as an association.
** Not considered as an association. Consists of scattered herds that are not in the area of any of the associations listed.

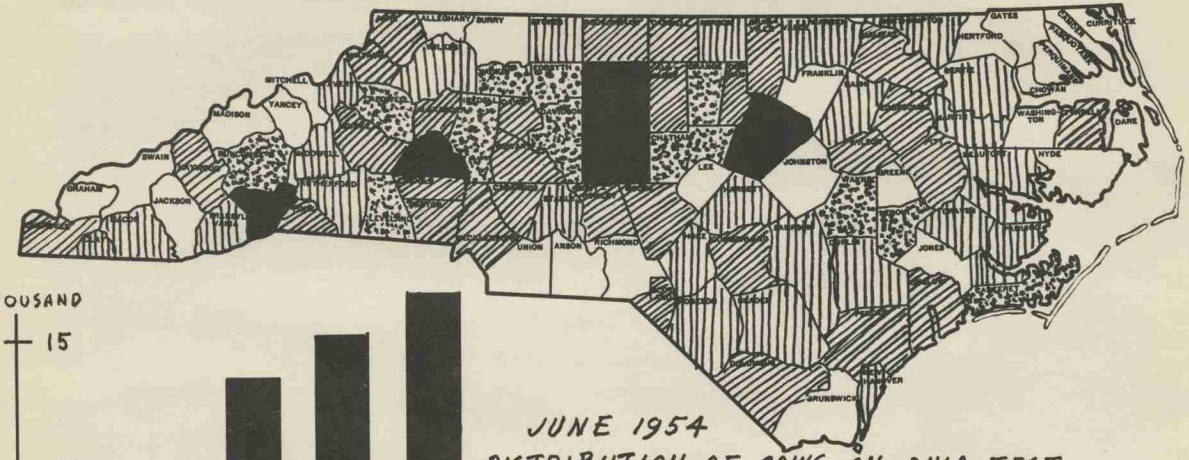
During the year Southeastern and Southwestern # 1 Associations were properly organized with the dairymen assuming the responsibility of the operation of the organization. All new associations are being set up in this manner. This makes a total of twenty-two associations properly organized with two others in the process of organizaing.

Setting up these local organizations has been a tremendous help in the supervision and the expansion of the DHIA program in North Carolina. It places more responsibility of the operation of the association with the membership where it should be. This local interest and responsibility is providing a better understanding of the entire DHIA program and how it should operate. Plans are underway to incorporate the local associations as non-profit cooperatives under the laws of North Carolina as a means of liability protection to the membership. The necessary forms and documents are being prepared by the Dairy Extension Office with a Farm Management Specialist cooperating.

Training Testers

One of the main problems in DHIA testing is securing sufficient trained

MORE PRODUCTION TESTING MEANS MORE PROFITABLE DAIRYING . .



JUNE 1954
DISTRIBUTION OF COWS ON DHIA TEST

0 - 100

100 - 299

300 - 499

500 OR MORE

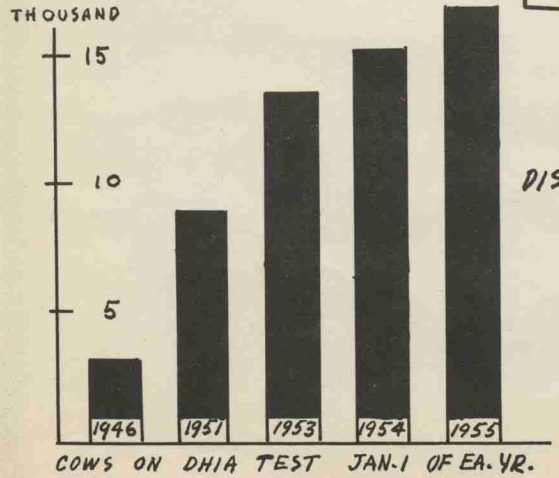


Figure I

personnel to meet the need for replacements in existing associations and to start new associations. This problem is becoming less acute but is still a major handicap to the project and requires a considerable amount of the specialists time. To provide properly trained personnel for testing jobs this past year two two-week training courses were conducted. Qualifications to attend the training course to become eligible to apply for a testing position consisted of farm experience, a high school education or equivalent, ability to handle simple arithmetic, a liking for record keeping and an interest in Dairy Husbandry. Only persons completing the training course satisfactorily are recommended for testing positions. In the two training courses twelve men enrolled; ten men completed the training course satisfactorily and six were placed in North Carolina associations. Individual training was given another man to fill a temporary opening. An outline of instruction of a typical training course will be found with exhibits following the production testing section. (Exhibit I)

Tester Conferences

One two-day state-wide DHIA Supervisor's Conference was held in October 1954. This conference was for the purpose of bringing the supervisors up to date on DHIA procedure as well as other new material relating to dairy production. Several problems causing the most trouble among testers in keeping feed records were reviewed rather carefully. More complete herd books for members with emphasis on yearly herd summaries was stressed. Such discussions aid in standardizing the work throughout the state and help to provide a better understanding in related fields. All but five testers attended the conference. A copy of the conference program will appear in the exhibits following the production testing section. (Exhibit II)

In addition to the state-wide conference five one-half day district conferences were held in March to review some major changes in the DHIA record keeping system. County agents working with the DHIA program within the county were envited to these conferences. In addition to the conferences numerous field visits were made with testers on the job to review their record keeping and testing work. Considerable assistance was given in this way to many of their individual problems.

Meetings

To better acquaint the dairymen and dairy leaders with production testing and to encourage greater use of production records, production testing was one of the major subjects of discussion at thirty-two dairy meetings of which ten were annual meetings of DHIA's. Production testing was further discussed at eight different county agent meetings, three Artificial Breeding Short courses and seven other meetings of dairy cattle breeders, dairy leaders and leaders in related fields.

In the county agent meetings the memorandum of understanding between the USDA and the State Agricultural Extension Service setting forth the responsibilities of federal, state and county workers in the DHIA program was discussed. Also additional ways to help more dairymen keep production records were presented.

Recognition

To recognize good dairy management practices in DHIA herds as measured by high average production and encourage greater use of DHIA records, Honor Roll Certificates were issued to DHIA members with herds averaging 350 pounds of butterfat per cow or more. One-hundred and five herds received these certificates with two averaging over 500 pounds of butterfat per cow, six between

450 and 499 pounds, thirty-seven between 400 and 449 pounds and sixty-nine between 350 and 399 pounds. These certificates were presented in cooperation with the Purebred Dairy Cattle Association and North Carolina State College.

Contests

Through the cooperation of the National Dairy Products Corporation, two DHIA contests were sponsored; the Efficient Dairy Production Contest for DHIA members and the DHIA Supervisor's Contest for DHIA Testers. These contests were conducted the same as in the previous year. The 1953 winners of each contest which were announced this year are as follows:

Winners - Efficient Dairy Production Contest For DHIA Members - 1953

Placing	Name and Address	DHIA	Prize
1st	Russell Oxford Taylorsville, N.C.	Alexander	$30 and Bronze Plaque
2nd	J. W. and Ralph Cummings Guilford College, N.C.	Piedmont IA	$20 and Bronze Plaque
3rd	J. R. Nipper Route # 1, Raleigh, N.C.	Capital 2	$30.00
4th	T. G. Kivett Route # 1, Jamestown, N.C.	Piedmont IA	$25.00
5th	S. E. Thacker and Son Route # 1, Whitsett, N.C.	Piedmont IB	$20.00
6th	Wheatmore Farm Trinity, N.C.	Davidson	$15.00
7th	John W. Smith Route # 1, Guilford College, N.C.	Piedmont IA	$10.00

Winners - DHIA Supervisors' Contest 1953

Placing	Name	Association	Prize
1st	Robert McKoin	Piedmont IA	$30.00 & Bronze Plaque
2nd	Charles Rambeau	Capital # 2	20.00 & Bronze Plaque
3rd	Edmond Harrison	Piedmont IB	30.00
4th	T. C. Henderson	Iredell	25.00
5th	William P. Walker	Southwestern #3	20.00
6th	Edwin Greble	Forsyth	15.00
7th	Keith Williams	Piedmont 6	10.00

Fifteen DHIA members entered the Efficient Dairy Production contest and some very interesting and helpful information was summarized from their entry questionnaires.

Newsletter and Releases

To further encourage production testing, to summarize production records, and to bring timely material on various phases of dairying to DHIA members and others, the "Dairy Extension News" is published monthly. This publication is sent to each dairyman doing any type of production testing, as well as to county agricultural agents, DHIA testers, Artificial Breeding Technicians and others who have indicated their interest in dairying. An average of approximately 1100 copies was mailed each month in 1954. A representative copy is exhibited following the production testing summary. (Exhibit III) Much of this material was used in radio and newspaper releases throughout the state. In addition to the statewide letter ten local DHIA Newsletters are published monthly through the cooperation of the county agent and dairy tester.

To keep DHIA testers and county agents informed on production testing and related dairy activities, nine issues of the "Chat With the Testers" (Exhibit IV) were prepared and sent out which included a total of 950 copies.

In addition seventeen form letters were prepared and a total of 1975 of these were mailed to testers, county agents, vocational agricultural teachers, and breeders.

In trying to keep the county agent currently informed of production and feed data on DHIA herds (often recognized as demonstration herds), and to provide DHIA testers with accurate herd summary data, a report of yearly herd averages for feed and production data on each DHIA herd is prepared and sent to the tester and county agent. (Exhibit V) This was started this past year and provides current usable facts for county agents in developing more efficient dairying.

In addition to the material referred to here one feature article, two radio talks and a television show were prepared and given to encourage wider use of production records.

To further aid with the efficiency in supervising the production testing work four mimeographed and one printed form was prepared, two mimeographed forms were revised, four mimeographed leaflets were prepared and three other leaflets revised. This material was prepared for use by testers, county agents, and office personnel.

Lactation Records

A very important phase of DHIA testing is the information it provides for the improvement of our dairy herds through breeding. Special effort has been made to encourage DHIA supervisors to report all 305 day lactation records for use in proving sires. Sires known to transmit high production to their offspring are invaluable in dairy herd improvement and it is especially important that a high percentage of sires used in dairy herd improvement associations be proved. This is the main source of information for locating

and selecting superior sires for artificial breeding. Bull selection committees are making good use of the DHIA proved-sire service as a basis for intelligent selection of bulls to be used. It is also essential that all 305 day lactation records be reported on as many daughters as possible of bulls used in artificial breeding so as to give added information on these bulls.

Table VI

Number of 305-Day Lactation Records Reported and Sire Data Received by Years

Year	305-Day Records		Sire Data	
	Number	Percent*	Proved Sire Records	Daughter Averages
1938	194	4.0	4	
1939	562	10.3	8	
1940	988	15.0	21	
1941	868	13.0	13	
1942	475	6.0	13	
1943	330	6.0	22	
1944	308	6.0	15	
1945	192	5.0	7	
1946			3	
1947	380	8.1	10	
1948	707	12.3	14	
1949	1462	23.5	40	
1950	2807	33.4	29	
1951	2507	27.6	18	89
1952	5120	50.7	41	140
1953	5416	39.9	94	
1954	6871	45.1	104	

* Percent of 305-Day Lactation Records reported of all cows on DHIA test as of January 1, of that year.

During 1954, 6871 305-day lactation records were reported by DHIA supervisors. This is 45.1 percent of all cows enrolled in DHIA test as of January 1, 1954. During the same period and as a result of reporting 305-day lactation

records previously, one-hundred and four proved sire records were received from the Dairy Husbandry Research Branch by the Dairy Extension Office. As this information was received through the Dairy Extension Office, it was forwarded to dairymen using bulls concerned, the dairy tester and the county agent. Table VI shows the progress that has been made in reporting lactation records and the amount of information that has been made available in the form of proved sire reports and daughter averages.

I wish to recognize the splendid cooperation given us by Dr. J. F. Kendrick, Head of Dairy Herd Improvement Investigations Division, Dairy Husbandry Research Branch, USDA, and his staff. They have been extremely helpful in supplying proved sire information and daughter averages to be used in the selection of superior sires for artificial breeding, as well as for individual herds. He has also provided us with production and feed summaries for individual herds, for associations and for the state. These summaries have proved very helpful in the dairy extension program, to dairy specialists, and county agricultural agents.

I also wish to recognize the fine cooperation of the State Cattle Breed Associations, the National Dairy Products Corporation, other extension specialists, county agricultural agents, DHIA boards of directors, and dairy testers for their cooperation in the advancement of a sound production testing program in North Carolina.

As a member and chairman of the Dairy Records Committee of the American Dairy Science Association some assistance was given to the National DHIA testing program as well as receiving many helpful suggestions for the production testing program in North Carolina. A survey on one of the major problems confronting the DHIA testing was made and reported at the annual meeting of this organization. A report of the activities of this committee was also made at this same meeting.

Herd Improvement Registry

For many years the agricultural colleges in all states have served as a disinterested party between the breeders and the breed association in supervising official testing. Each of the five breed associations has extensive official testing departments and is interested in providing the breeders with a system of records adapted to their needs. These records must be carefully supervised and are of two types, Herd Improvement Registry and Advanced Registry.

The Herd Test, as sponsored by the breed associations, is not unlike Dairy Herd Improvement Association testing because it to emphasizes continuous testing of all animals in the herd over a period of years. Throughout the United States its popularity is very definitely on the increase and more and more of the purebred breeders are relying on this type of test to develop a herd, build a breeding program and likewise furnish official records which are beneficial in helping them dispose of surplus breeding stock and in making up pedigrees. In most instances in North Carolina the Herd Test is run in conjunction with the regular monthly Dairy Herd Improvement Association test. In this way the same tester does all the work in one visit at a considerable saving in cost to the breeder.

Table VII

Herds and Cows on Herd Improvement Registry Testing
(As of November 30 of Each Year)

	1952		1953		1954	
	No. Herds	No. Cows	No. Herds	No. Cows	No. Herds	No. Cows
Ayrshire	15	530	15	530	15	536
Guernsey	18	466	18	461	22	709
Holstein	39	1047	38	1145	35	1171
Jersey	35	1236	28	1125	26	1123
Goats	0	0	2	49	2	70
Total	107	3279	101	3310	100	3609

In the past year there has been an increase in the number of cows on HIR test with a decrease in the number of herds. This would indicate an increase in size of the purebred herds. Eleven herds dropped the HIR test while ten herds started HIR test during the year.

Annual recognition of high producing HIR herds is being made by three of the State Dairy Cattle Breed Associations in an effort to encourage more of this type of testing in the purebred herds as well as to get breeders to make better use of their records. As can be expected this type of testing is helping to bring about an increase in average milk and butterfat production. Since HIR testing is a continuous test on all cows it is a very helpful tool in culling dairy herds and establishing a sound breeding program for breeders.

Advanced Registry

The number of herds and cows on Advanced Registry test has declined rather steadily in the last three years. This type of test seems to be losing in popularity not only in North Carolina but throughout the entire United States in preference to a testing program for the entire herd. The Advanced Registry Test has been very popular with the Guernsey breed and as shown in Table VIII it still is in comparison with the other breeds. However, in the United States ninety-three percent of the cows in this breed are now being tested in a herd test plan.

This type of selective testing is expensive and does not lend itself to the wide spread use in practical dairy herds where the production of the entire herd is the chief concern rather than that of a few selected individuals. This type of testing is used primarily by the larger dairy cattle breeders.

Table VIII

Herds and Cows on Advanced Registry Test
(As of November 30, of Each Year)

	1952		1953		1954	
	No. Herds	No. Cows	No. Herds	No. Cows	No. Herds	No. Cows
Ayrshire	0	0	0	0	0	0
Guernsey	35	784	29	765	23	572
Holstein	0	0	1	1	0	0
Jersey	3	118	4	100	3	123
Goats	2	16	0	0	0	0
Total	40	918	34	866	26	697

Although the amount of Advanced Registry testing has been and will be quite limited, many benefits are derived from it by North Carolina dairymen. These officially tested herds have been and are sources of highly bred seed stock for newly developing herds and proving established herds in many sections of the state. It provides information on maximum production that can be expected from our dairy cattle under ideal environmental conditions.

Each year the North Carolina Guernsey Breeders and the North Carolina Jersey Breeders Associations recognize outstanding production for individual cows in this type of test at their annual meeting.

Though the bulk of the advanced Registry testing is done by DHIA supervisors, one full-time tester and one part-time tester is employed to work largely with Advanced Registry herds, checking Herd Improvement Registry herds, and assisting with Dairy Herd Improvement work where needed to keep the records continuous.

Other Ways of Keeping Production Records

A study of 1953 North Carolina DHIA records shows that approximately 25% of the cows on test the entire year produced less than 250 pounds of butter-

fat (6250 pounds 4% milk). Since DHIA herds have a higher average level of production for data shows that all dairy cows in North Carolina average only 200 pounds of butterfat per year it is apparent the herds not on DHIA test have even a larger number of cows producing less than 250 pounds of butterfat per year. Since only slightly more than four percent of the cows are being tested in standard DHIA, some method for securing records on more dairy cows was needed. Dairymen are slow to adopt DHIA testing. The major reasons seem to be cost, small herds, herds consisting of grade cows, records too complicated, etc. Therefore other ways of keeping production records were put into use this past year.

A milk and grain record for use in the barn was prepared. It has been presented to the county agents in all but the Eastern and Southeastern districts. It has also been presented to dairy plant fieldmen, dairy testers and dairymen.

The only cost is a pair of dairy scales. It has been accepted very favorably but at this time we do not know how widely it is being used.

Owner-sampler testing, which provides somewhat more information than the milk and barn record but less data than the DHIA record was started this past year. In most cases the Dairy Herd Improvement Associations are offering this type of testing in addition to standard DHIA testing. The tester does the testing and record work while the farmer does the weighing and sampling. One cooperative dairy plant is working out plans to make this type of record available to its patrons. The milk haulers will bring in the samples. The milk will be tested in the dairy laboratory and the records calculated in the office. A report will be sent back to the farmer. This type of testing is costing about one-half that of standard DHIA testing. It offers a real possibility of getting more dairymen to keep production records. As of November 30, 1954 six herds consisting of 149 cows had

enrolled in owner-sampler testing.

By making available the milk and grain record and owner-sampler testing in addition to standard DHIA, HIR and AR testing, the Dairy Extension office now has a production record keeping system that should fit every dairy farm regardless of size of herd, kind of cows, class of milk produced, and level of income.

DE-60A

DHIA TESTERS' TRAINING COURSE
Schedule of Classes

Monday

9:30 A. M.	Welcome to State College Campus - Dr. J. W. Pou, Head, Animal Industry Dept.
10:00 A. M.	Organization and Scope of DHIA Program.
1:15 P. M.	The Value of Production Testing.
2:00 P. M.	Film, "John Martin and Son",
2:30 P. M.	The Supervisor's Job.

Tuesday

8:30 A. M.	Explanation of Barn Book
1:00 P. M.	Monthly Testing Period - The Centering System.
2:00 P. M.	Uniform Testing Rules for Standard DHIA.

Wednesday

8:30 A. M.	Checking Barn Book and Testing Period Problems.
9:30 A. M.	Explanation of the Monthly Association Report and Testers Computer.
10:30 A. M.	Feeding the Dairy Herd - J. D. George, Dairy Extension Specialist
1:15 P. M.	Explanation of DHIA Herd Book.

Thursday

8:30 A. M.	Checking Barn Book and Herd Book.
9:30 A. M.	Identification and Tagging Program. Entries on "Register of Animals in Herd", page BDI-DHIA-16.
1:00 P. M.	Explanation and Demonstration of the Babcock Test - Dr. R. B. Redfern, Dairy Manufacturing Specialist.

Friday

8:30 A. M.	Checking Barn Book and Herd Book
9:30 A. M.	Why Milk Tests Vary - Dr. Robert B. Redfern, Dairy Manufacturing Specialist.
10:30 A. M.	How to Average Records and Calculate Records for Nurse Cows.
1:00 P. M.	Babcock Testing Practice - Dr. R. B. Redfern, Dairy Manufacturing Specialist.

Saturday

8:30 A. M.	Babcock Testing Practice - Dr. R. B. Redfern, Dairy Manufacturing Specialist.

Monday

8:30 A. M.	Checking Barn Book and Herd Book.
9:30 A. M.	305 Day Lactation Records and Proved Sire Program.
1:00 P. M.	Getting Information from the Dairymen and Miscellaneous Rules and Regulations.
2:00 P. M.	305 Day Lactation Records. How to Calculate.

Tuesday

8:30 A. M.	305 Day Lactation Records and Proved Sire Program.
9:30 A. M.	Summarizing Records at End of Testing Year.
1:30 P. M.	Checking Yearly Record of Individual Cows, BDI-DHIA-780.
3:00 P. M.	To Dairy Barn to Test College Herd.

Wednesday

5:00 A. M.	To Dairy Barn to Test College Herd and Calculate Barn Book.
11:00 A. M.	Fundamentals of Dairy Cattle Breeding - Dr. J. E. Legates, Professor Dairy Husbandry.
2:00 P. M.	Artificial Breeding in North Carolina - T. C. Blalock, Dairy Extension Specialist.
3:00 P. M.	Herd Improvement Registry Testing-Filling out Forms.

Thursday

8:30 A. M.	Checking HIR Testing Problem.
9:30 A. M.	Herd Improvement Registry Testing-Rules and Regulations.
1:00 P. M.	Advanced Registry Testing (Rules and Regulations).
2:00 P. M.	Advanced Registry Testing (Filling out Forms).
3:45 P. M.	To Dairy Farm to Identify Cows and Review AR Testing.

Friday

8:30 A. M.	Checking HIR and AR Problems.
9:30 A. M.	Some General Dairy Herd Management Practices - George Hyatt, Jr., In Charge, Dairy Extension Office.
10:30 A. M.	How to Figure Charges for DHIA, HIR, and AR Testing.
11:30 A. M.	Review over all Phases of Testing Work.
2:00 P. M.	Examination over Dairy Records.

Saturday

8:30 A. M.	Review Herd Books and Examination Papers.
9:30 A. M.	How to Get Started and Make Good on the Job.

Exhibit II

Program
Annual DHIA Testers' Conference
Vance Hotel, Statesville
October 7 and 8, 1954

Thursday Afternoon October 7
Chairman - Marvin E. Senger, Dairy Extension Specialist

1:30 P. M. LESS GRAIN AND MORE MILK - George Hyatt, Jr., In Charge, Dairy Extension Office.

2:30 P. M. GRADES OF ROUGHAGE AND PASTURE - George Hyatt, Jr. and Marvin E. Senger, Dairy Extension Specialist.

3:30 P. M. DISCUSSION.

Thursday Evening October 7
Chairman - George Hyatt, Jr., In Charge, Dairy Extension Office

6:30 P. M. DINNER.

DHIA TESTING IS A PART OF A GREATER PROGRAM TO HELP OUR FARM PEOPLE - Dr. C. B. Ratchford, Assistant Director, Agricultural Extension Service.

THE DHIA TESTERS' CONTEST AND PRESENTATION OF AWARDS - Dr. J. W. Pou, Head, Animal Industry Department.

Movie - GRASS - THE BIG STORY.

Friday Forenoon October 8
Chairman - F. R. Farnham, Dairy Extension Specialist

8:30 A. M. WHAT A DHIA TESTER MEANS TO OUR COUNTY DAIRY PROGRAM - J. E. Stacy, Assistant County Agent, Union County.

8:50 A. M. WHAT IS A WELL KEPT DHIA HERD BOOK - Marvin E. Senger, Dairy Extension Specialist.

10:00 A. M. AN IDENTIFICATION PROGRAM THAT WORKS - Robert McKoin, DHIA Tester, Piedmont IA Association, Guilford County.

10:20 A. M. MORE ABOUT WEIGHING AND SAMPLING MILK IN PIPELINE MILKERS - Marvin E. Senger, Dairy Extension Specialist.

10:30 A. M. DISCUSSION.

11:30 A. M. PREPARING EXPENSE ACCOUNT.

DAIRY EXTENSION NEWS June 1954

HOW GOOD IS THAT YOUNG BULL YOU'RE USING?

By
T. C. Blalock
Dairy Extension Specialist

Unless you are using the services of your local artificial breeding cooperative, every year or two you are faced with the job of selecting another young herd sire. This is one of the most important jobs that you, as a dairyman, have to perform. How successful you are today in picking that bull will largely determine the level of production in your herd a few years from now because all of his daughters (your herd replacements) will receive one-half of their inheritance from him.

Yet many farmers apparently fail to appreciate this fact since they pay very little attention to the selection of their herd sires. Not long ago I spoke at the annual meeting of one of the county breed organizations on the importance of thoroughly investigating prospective herd sires. After the meeting one of the dairymen brought me a pedigree of a young bull he had just obtained for use as his herd sire. He asked what I thought about him. In discussing the bull I found that all he knew about the animal was that it was registered, and it so happened that at the time of purchase he wasn't even sure of that. Yet, he was willing to bring that bull into his herd and use him extensively. Depending upon how long he used him, the daughters of this bull might eventually make up from twenty-five to fifty per cent of his total milking herd.

I mention this incident to show that many dairymen do not appreciate the tremendous importance of this job or the steps they should take in selecting a herd sire. All of us realize, I believe, that regardless of how we go about selecting them some of our young bulls will be disappointments. However, by taking the proper precautions, we can improve our chances of picking a good one. Before discussing these points let's see how we've been doing in the past.

During 1952 and 1953 there were 77 North Carolina bulls proved in DHIA testing. These were bulls that had been selected by North Carolina dairymen as young herd sires a few years back. The combined proofs on all these bulls showed:

	Milk	%	Fat
A total of 681 daus. (Ave. 9 per bull)	8,742	4.61	403
Their 681 dams averaged	8,981	4.54	408
A difference of	-239	+.07	-5

In other words the daughters of these bulls produced an average of 239 pounds of milk less than their mothers. Of these 77 bulls, 23 or 30 per cent, increased production; 23 or 30 per cent, maintained production; and 31 or 40 per cent, lowered production of their daughters as compared to their dams.

Will he Decrease production?

Maintain production?

Increase production?

How can we go about improving this record? By simply following the recommendations listed below which are the results of research on the problem of what to look for in a young herd sire.

1. His sire should be a desirably proven bull. Research work indicates that this is the one most important point to consider. He should have at least 5 and preferably 10 daughter-dam comparisons that definitely show he is consistently transmitting high production to his offspring. Be sure these comparisons include all the records on all the daughters.

2. His dam should have at least three or four unselected production records that are well above the average of the rest of the herd in which she is located.

3. His dam should have demonstrated through production information on two or three daughters or sons that she is capable of transmitting high production.

4. The sire of his dam should also be a desirably proven bull.

5. The type of the daughters of his sire, his dam and her daughters should be the kind that will "wear well" over the years.

The above points are the main ones to consider in selecting your young herd sire; however, be sure you also have the following information.

1. Are the records on twice a day or three times a day milking? 305 or 365 days in length? Actual production or mature equivalent?

2. Are all the daughters and all the records included or has there been some selection?

By obtaining all of this information and using it wisely, North Carolina dairymen can do a better job of selecting their future herd sires, thereby, increasing milk production in their herd through better breeding.

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BUNCOMBE COUNTY ORGANIZES A DHIA

Another county wide Dairy Herd Improvement Association started operation in May, 1954. This association was organized by Buncombe County dairymen in their interest to keep production and feed records on their cows. Even though some dairymen in this county have been doing DHIA through the services of testers from other counties, it is the newest DHIA to organize and hire a tester to expand production testing services to all dairymen in the county.

Mr. Theodore R. Burleson, Jr., of Spruce Pine, has been employed as their tester. Mr. Burleson recently completed the DHIA Testers' Training Course at N. C. State College to qualify for this position. Mr. Albert Clark, Manager, Biltmore Farms, was elected temporary chairman of the association until permanent officers are elected. Assisting with the organization of the Buncombe County DHIA was W.Riley Palmer, County Agricultural Agent and the Asheville Agricultural Development Council. Mr. Palmer will be working very close with the association as a part of the Counties Agricultural Extension program.

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ELIMINATE LOW PRODUCERS - DON'T EXCUSE THEM

By
Marvin E. Senger
Dairy Extension Specialist

A study of 1953 DHIA records shows that North Carolina DHIA herds have some cows that should be eliminated if they are to be more profitable. In this study, which represented 2460 cows in 101 different herds selected at random, 270 cows or 11% produced less than 200 pounds of butterfat during the year. This is equivalent to 5000 pounds of 4% milk or 4000 pounds of 5% milk. These kind of cows have no place on our dairy farms today.

This study further shows that 36% of the cows produced between 200 to 299 pounds of butterfat per cow per year or 5000 to 7500 pounds of 4% milk. The lower half of this group should also definitely be culled from the herd and plans made to replace all cows producing at this level as rapidly as possible. Some consideration will want to be given first calf heifers however.

Often low production is excused for many reasons other than the cow herself, consequently the low producers remain in the herd. The past two years dry weather, short pastures, insufficient feed, and inexperienced labor are just a few of the excuses given for low producing cows that remain in the herd. On the other hand 53% of the cows producing over 300 pounds of butterfat last year were in thses same herds, grazed in the same pastures, ate the same kind of feed, and milked by the same men. Every herd had some cows in this group. Maybe the cow is more at fault than we have been willing to believe. Excusing the low producer won't make the herd more profitable. Use your DHIA records to eliminate low producers, not to excuse them.

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STANDARDS OF A GOOD COW

1. She must be an efficient and economical producer of a clean wholesome product.
2. She must be sufficiently pure in her genetic make-up that she will transmit her desirable characteristics to her off-spring.
3. She must be strong and healthy, and wear well for many years.
4. She must be a regular and consistent breeder.
5. She should, in addition to her usefulness, have beauty of general appearance and body conformation.

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Are you prepared to start feeding good quality legume hay and silage as soon as pastures start to dry up? Follow pastures closely and don't let production drop by delaying hay and silage feeding. Once it drops it's hard to get it back.

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You can't afford to keep boarders except when you are running a boarding house. Your dairy barn is not a boarding house.

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Handle cows gently. High production and rough treatment are never found in the same barn.

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PROVED-SIRE REPORTS - May, 1954

During May eight proved-sire reports were received from the Dairy Husbandry Research Branch, Washington, D. C. This makes a total of fourty-seven proved-sire reports received in 1954. Copies of these reports have been sent to owners of these bulls if in North Carolina or to the DHIA herd having the most daughters in the proved-sire report. Since other DHIA herds in North Carolina may have one or more daughters included in some of these reports a summary of each proved-sire report received during May is given. Bulls known to be alive are starred (*).

		No. Records	Milk	Test	Fat
GUERNSEY					
Bournedale Maxim's Duke 435793	9 dau.	10	8,262	5.0	417
Born, 5-27-48; proved, 5-25-54	8 dau.	9	8,100	5.0	408
Sire, 303240; dam, 586682	8 dams	21	9,052	5.1	459
Used by Dr. H. C. Carr, University, N. C.	Difference		-952	-.1	-51
HOLSTEIN					
Nockdair Coachman Model 905087	16 dau.	31	11,794	3.5	416
Born, 11-15-43; proved, 5-25-54	10 dau.	15	11,235	3.4	387
Sire, 739019; dam, 1887831	10 dams	24	10,183	3.5	352
Used by William E. Cummings, Summerfield, N. C.	Difference		+1,052	-.1	+35
Elmoka Ormsby Lad 907561	21 dau.	37	9,457	3.6	341
Born, 11-19-43; proved, 5-28-54	11 dau.	15	10,310	3.6	375
Sire, 813654; dam, 2122128	11 dams	34	9,913	3.5	342
Used by Bertha & Alfred Thill, Clayton, Wis.	Difference		+397	+.1	+33
JERSEY					
Just So Robin Jr. 451318	37 dau.	87	7,285	5.1	374
Born, 7-4-43; proved, 5-25-54	28 dau.	63	7,039	5.2	363
Sire, 418572; dam, 1037141	28 dams	79	6,949	5.2	363
Used by Shuford Mills, Inc., Granite Falls, N. C.	Difference		+90	.0	0
Biltmore Standard Victor 448026	7 dau.	13	8,557	5.8	495
Born, 4-3-43; proved, 5-28-54	7 dams	15	9,351	5.1	475
Sire, 364941; dam, 1102224	Difference		-794	+.7	+20
Used by Mountain Sanitarium, Fletcher, N. C.					
Xenia Sparkling Playboy Sir 464209	27 dau.	30	7,883	5.0	394
Born, 3-11-44; proved, 5-12-54	5 dau.	6	8,120	4.8	392
Sire, 432629; dam, 1271178	5 dams	6	8,066	5.1	410
Used by J. K. Stuart, Bartow, Fla.	Difference		+54	-.3	-18
Blonde Darling Beau 451602	8 dau.	20	8,820	4.8	420
Born, 12-7-43; proved, 5-12-54	5 dau.	12	9,555	4.7	446
Sire, 400669; dam, 1219328	5 dams	8	11,308	4.5	510
Used by Henry Whisner, Russellville, Ohio	Difference		-1,753	+.2	-64
Sparkling Standard King 458548	20 dau.	35	6,275	5.1	319
Born, 8-10-44; proved, 5-18-54	12 dau.	20	6,268	5.1	317
Sire, 364941; dam, 1078106	12 dams	20	6,393	5.0	319
Used by Ralph E. Summey, Dallas, N. C.	Difference		-125	+.1	-2

HIR AND AR RECORDS

Summary of Official Testing
May 1954

	Advanced Registry		Herd Improvement Registry	
	No. Herds	No. Cows	No. Herds	No. Cows
Ayrshire	0	0	15	497
Guernsey	24	704	23	653
Holstein	0	0	37	1097
Jersey	3	127	29	1362
Goats	0	0	3	84
Totals	27	831	107	3693

Cows completing AR and HIR records with 400 lbs. of fat or more on 2x milking or 500 lbs. of fat or more on 3x milking.

Owner Cow's Name	Age	Times Milked	No. Days	Lbs. Milk	Lbs. Fat
GUERNSEY					
Blackwelder, P. B., Mocksville					
Paulette of New River	5	2x	305C	11330	614
Royal Count's Daisey Belle	10	2x	305C	9225	475
Bradshaw, A. H., Valdese					
Oakridge Herman's Rose	6	2x	305C	9808	484
Brown, A. L., Concord					
Clear Springs' Select Mary	Sr4	3x	365C	14241	787*
Clear Springs' Fashion's Laurel	Sr2	3x	365C	12911	745*
Two Brooks King's Frolic	Sr4	3x	365C	14337	712*
Clear Springs' Phil's Wanda	Sr2	3x	365	12714	704*
Clear Springs' Royal Gracious	Sr4	3x	365C	12924	682*
Clear Springs' Majesty's Rose	Sr4	3x	365C	11837	630*
Riegeldale Maximost Clovette	Jr2	3x	365	9190	568*
Clear Springs Fashion's Jill	Jr2	3x	365	10579	535*
Clear Springs Phil's Gracious	Jr2	3x	365	9526	504*
Bumpass, R. D., Roxboro					
Beaver Creek Noble Queen	6	3x	356C	13943	652
Jadan Lady Marian	Jr2	2x	364	8175	471
Skuggek's Comet's Eliza	5	2x	336	8480	462
Coble, Eddie Coltrane, Lexington					
Maegeo Dynamo's Matilda	Jr4	3x	305C	10007	554*
Coble, George S., Lexington					
Maegeo Winner's Feather	Jr2	3x	365	15276	752*
Maxim's Annalee	10	3x	365	15053	716*
Spruce Run Marvel's Dora	6	3x	305C	16453	684*
Rolling Hills Daisy	7	3x	365	13798	659*
Maegeo Winner's Cindy	Jr2	3x	365C	16040	651*
Ideal's Traveller's Lucy	6	3x	365C	13816	627*
Maegeo Columbine	5	3x	305C	12928	602*
Brooke's Cross Carlotta	9	3x	365	11315	596*
Hillside Valorous Christine	9	3x	365C	10448	593*
Maegeo Queen Alicia	7	3x	305C	12644	590*

* Herds on Advanced Registry

GUERNSEY'S cont'd.

Coble, George S., cont'd.					
Maegeo D Dorothy	Sr3	3x	305C	11561	575*
Maegeo Winner's Halo	Jr3	3x	305C	13086	570*
Maegeo Lucy	Jr3	3x	305C	10466	556*
Annie Lee of High View	9	3x	305	10041	543*
Maegeo Bonita	Jr4	3x	365C	10718	520*
Maegeo Dynamo's Graceful	Sr3	3x	305C	9673	509*
Ideal's Claremont's Rubina	6	3x	365C	10615	509*
Fowler, O. T., Pfafftown					
Clear Springs' Majesty's Nora	Sr2	3x	365	12177	595*
Grand View Predictor's Annie	Jr3	3x	365C	11658	595*
Belmont View Fashion's Delight	Jr3	3x	365C	12025	589*
Grand View Predictor's Lady	Jr4	3x	365C	10197	573*
Fox, Frances Hill, Durham					
Croasdaile's Princess Sue	10	3x	305C	10037	555*
Gray, Bowman & Gordon, Winston-Salem					
Two Brooks King's Delight	Jr4	3x	365C	11242	597*
Arden Colfax Goldenrod	Sr4	2x	365C	12055	581*
Two Brooks Ladyslipper	Jr4	3x	365C	14208	756*
Brookberry Benita	Jr4	3x	305	9501	526*
Hill, George Watts, Rougemont					
Quail Roost Noble Rhoda	7	3x	365	11194	561*
James, R. E., Matthews					
Seven Oaks Anna	Jr3	2x	305C	8863	463*
Kimberly, John R., Tryon					
Eskdale Noah's Patricia	Sr3	3x	365	15091	794*
Eskdale Noah's Ila	Sr3	3x	365C	16206	786*
Eskdale Noah's Martha	Jr2	3x	365	11273	502*
Manning, W. L., Roanoke Rapids					
Chockoyotte Salem	Sr4	2x	305C	7566	414*
N. C. State College of Agriculture, Raleigh					
Clear Springs' Queen Joyous	5	2x	305C	7749	406
Pine State Creamery Company, Cary					
Kildaire's Dixie	5	2x	267C	7219	417
Shoal Falls Farm, Inc., Hendersonville					
Beaver Creek Noble Violet	7	2x	365	12566	613*
Shoal Falls Golden Flirt	Jr3	2x	305C	8682	441*
Shore, R. D., Jr., Winston-Salem					
Shore Farm Lady Jubilee	Jr2	3x	305	9153	500*
Slagle, A. B., Franklin					
Belmont View Fashion's Aster	Jr4	3x	365	10515	524*
Belmont View Gazer's Heroine	Jr2	3x	305C	10702	500*
Snyder, A. P., Charlotte					
Archdale Hollimaxim Addie	Jr3	2x	305	8401	493*

HOLSTEIN

Appalachian State Teachers College, Boone					
Locvale Master Nettie	6-4	2x	305	18241	622.5
Appalachian Clothilde Fayne	8-2	2x	279	12489	439.0
Appalachian Homestead Inka	4-4	2x	305	12980	433.8
Baptist Orphanage of N. C., Thomasville					
B O N C Lilly Jolan	11-1	2x	305	16872	556.8
Noble Locust Plain Lindsay	4-11	2x	305	14763	477.5
B O N C Burke Jane Jolan	4-7	2x	305	12598	459.5
B O N C Wilma Jolan Peanut	6-3	2x	365	12180	440.7
Bowles, Louis G., Statesville					
King Mooie Ormsby Matilda	6-7	2x	305	17440	576.5
Veeman Dunloggin Matti Lee	2	2x	305	10599	415.6

HOLSTEIN'S cont'd.

Cedar Lodge Dairy, Thomasville					
Patriarch Carnation Cascade Jo	3-11	2x	305	11543	403.8
Cummings, David C., Guilford College					
Butterfield Lochinvar Mildred	4-5	2x	294	13863	672.5
Davis, B. E., Randleman					
Davis De Kol Posch Belle	7-10	2x	305	13322	468.3
Davis Ormsby Pontiac	6-9	2x	305	11343	415.3
Finch, Doak, Trinity					
Chip Sovereign Veeman	6-1	2x	305	15286	497.5
Bonnie Jane	4	2x	305	11289	415.4
Forsyth County Farm, Winston-Salem					
Patsy Ormsby May	5-5	2x	305	15629	574.2
Carolina Prilly Pont Colantha	10	2x	305	13347	435.0
Graham, Charles E., Linwood					
Princess Rag Apple Olivia	6	2x	305	15989	533.1
Marple Sensation Fobes	4-3	2x	295	14040	480.7
Valley Nook Ernestine	2	2x	353	12576	428.6
Johanna Cream Colantha Maid	11-5	2x	365	13092	405.6
McEachern, A. O., Wilmington					
Mce Lillian Mercedes	9-2	2x	365	13147	438.9
Lady Trixie Korndyke	3-2	2x	365	12292	433.4
Nipper, J. R., Raleigh					
Queen Sylvia Carnation	7-1	2x	305	15784	585.0
Redden, R. R., Mocksville					
Mahobros Sir Floss Flossie	13-8	2x	305	13550	442.8
Reich, Dr. E. H., Lexington					
Thomas Burke Sensation Mae	2-4	2x	338	14252	457.3
Shuford, A. L., Jr., Newton					
Amacoy Sally	10-2	2x	305	14584	450.1
Sutherland, William, Fayetteville					
Newmont Ormsby Elaine	13	2x	365	12082	431.9
Cottonade Abie	3-6	2x	303	10911	407.0
Thacker, H. G., Jr., Winston-Salem					
Rosni Princess Homestead Burke	3-2	2x	305	12248	425.1

JERSEY

A & T College of N. C., Greensboro					
A & T Portia Carolina	3-10	2x	305	8618	434
Biltmore Farms, Biltmore					
Biltmore Gem Poetess	3-11	2x	365	10402	645*
Biltmore Playboy Lagina	1-11	2x	365	8876	508*
Biltmore Ivy Jewel	2-1	2x	305	9613	502*
Biltmore Gem Bonita	4-8	2x	305	7652	476*
Biltmore Dandy Gamma	2-5	2x	305	8767	450*
Biltmore X S P S Angel	1-10	2x	365	9088	437*
Coastal Plain Experiment Station, Willard					
Will Phoenix A H B Maid	5-8	2x	305	9887	581
Will Sena B D E Maid	2-7	2x	305	7868	449
Hobson Brothers, Boonville					
Biltmore Design Zena	11-8	2x	305	10301	518
Lutz, J. O., Newton					
Bindle Pearl Daisy	3-1	2x	277	8620	416
Mason Jersey Farm, Statesville					
Sally H T Foremost Observer	12-6	2x	291	6926	411
Moose, E. L., Conover					
Bodicia Star Sweetness	5-3	2x	298	9476	439
Mountain Sanitarium, Fletcher					
Green Pastures Oxford Alva	3-4	2x	286	8234	408

JERSEY'S cont'd.

Myatt, K. R., Raleigh					
Ena Sleeper Nell	6	2x	305	9885	491
N. C. State College of Agriculture, Raleigh					
N C State Glamour 3D	4-9	2x	305	8469	440
Oxford, Russell, Taylorsville					
Standard Right Brownie	5-8	2x	305	13121	714
Phillips, W. R., Raleigh					
Royal Design's Betsy	8-1	2x	305	7926	417
Edenwood Fillpail Ann	5-8	2x	305	8718	408
Rolling Acres, Richfield					
Dream Noble Blanche Ixia	12-11	2x	266	8834	408
Sipe Farms, V. O., Conover					
Sybil Draconis Design Mabel	8-2	2x	305	8367	411
Sunbeam Farms, Cherryville					
Crystal Victress Dora	4	2x	296	10684	483
Robin Dreaming Em	7-5	2x	291	9291	465
Tim's Designer Betsy	3-4	2x	296	8953	441
Design Chic Joy	4-4	2x	305	10153	424
Taylor, J. W., Richlands					
Taylor Tiny Peggy	6-7	2x	305	10990	531
Taylor S Standard Mabel	4-3	2x	305	9198	505
Taylor S Standard Baby	2-2	2x	305	8025	420

GOATS

Chikaming Herd, Flat Rock					
Hinson's Boliver Jody	C	2x	215	1726.8	61.25

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NEW GUERNSEY STATE CHAMPIONS IN HIR DIVISION

Following are registered Guernsey cows that have recently become the highest butterfat producers in North Carolina for their respective classes in the HIR division of official testing.

Cow's Name Owner	Age	Times Milked	Days	Milk	Fat
Paulette of New River P. B. Blackwelder, Mocksville	5 yrs.	2x	305C	11330	614
Skuggek Noble Mattie C. I. Carlson, Guilford College	Sr4	2x	305C	13315	536
Slaty Hill's Bessie J. R. Haney, Marshville	Jr4	2x	305C	9454	442
Knightdale No Max Bonnie Clarence O. Knight, Guilford College	Jr3	2x	365C	6404	352
Faye of High Knoll Farm Joe Angel, Winston-Salem	Jr2	2x	365C	8619	510
Clear Spring Choice Beauty J. R. Haney, Marshville	Jr2	2x	305C	9056	472

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D. H. I. A. RECORDS

Taken From the DHIA Supervisors' Monthly Reports

ASSOCIATION SUMMARIES FOR MAY, 1953

ASSOCIATION	TESTER	NO. HERDS	TOTAL COWS	DRY COWS	AV. MILK	AV. FAT	FEED COST PER 100 LBS. MILK	NO. 305 DAY CARDS REP'D
Alamance	B. Martin	9	334	39	677	26.9	1.85	27
Alexander	L. Payne	7	113	9	694	34.6	1.62	6
Buncombe	T. Burleson	9	262	39	582	24.3	2.23	1
Burke-Caldwell	K. Sims	20	494	120	574	26.3	2.51	15
Capital 1	G. E. Hager	10	347	58	657	33.2	2.20	21
Capital 2	C. Rambeau	13	546	86	753	27.8	1.99	27
Catawba 1	H. Mauser	8	266	35	613	27.2	2.16	0
Catawba 2	J. Wilkinson	17	443	45	687	28.6	2.02	11
Davidson	K. Keil	15	475	49	874	31.4	1.80	7
Davie	E. Greble	8	204	23	711	30.1	2.31	3
East Central	H. B. Wilkie	25	1136	181	723	27.4	2.94	29
Forsyth	E. Greble	24	526	72	809	30.1	2.48	25
Golden Belt	M. Hughes	11	340	51	820	30.0	2.25	10
Iredell	T. C. Henderson	14	421	62	754	27.6	1.96	10
Macon	J. E. Williams	5	87	16	747	30.7	1.67	10
Northeastern	G. Ingram	15	487	77	760	29.8	1.96	21
Northwestern	E. Moretz	10	258	69	575	23.1	1.86	4
Orange-Chatham	G. Reynolds	25	817	95	797	30.9	2.25	19
Piedmont I-A	R. McKoin	21	669	76	861	35.1	2.62	55
Piedmont I-B	E. Harrison	21	614	57	793	30.1	2.15	12
Piedmont 2	M. Black	9	319	53	611	26.3	2.74	9
Piedmont 6	K. Williams	11	276	31	764	36.2	1.80	5
Piedmont 9	T. S. Sloan	9	279	30	582	26.7	2.43	38
Randolph	C. Glass	24	861	98	762	29.6	2.27	0
Southeastern	E. Rivenbark	23	796	101	814	30.7	1.80	12
Southwestern 1	H. K. Lutz	17	658	124	745	29.9	2.08	0
Southwestern 2	H. Francis	9	295	47	663	27.4	2.04	0
Southwestern 3	W. P. Walker	13	312	43	684	31.7	2.03	42
Southwestern 4	C. R. Nichols	17	810	125	752	31.1	2.25	41
Southwestern 5	J. Hunt	11	310	40	612	26.2	2.42	0
State Insts.	J. Washburn	9	728	94	1038	36.3	1.83	45
Tri-County	C. Burleson	10	360	66	694	28.0	1.55	15
Yadkin	L. Thomasson	15	388	51	675	29.4	1.99	0
Miscellaneous	McCall &Stephens	6	157	24	740	33.5	1.67	0
		470	15388	2176	747	29.7	2.21	510

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TWELVE HIGH HERDS IN BUTTERFAT PRODUCTION IN DHIA, MAY, 1954

ASSOCIATION	OWNER	BREED	TOTAL COWS	COWS DRY	AV. MILK	AV. BUTTERFAT
Alexander	Russell Oxford	RJ	15	0	845	49.5
Piedmont I-A	W. B. Siler	H	20	0	1303	45.4
Piedmont I-A	Dr. T. E. Sikes	G	56	5	854	45.0
State Institutions	App. St. Teach Coll.	H	53	6	1157	44.5
Yadkin	Henry D. Fleming		13	0	929	44.2
State Institutions	State Hospital	H	111	11	1259	44.1
East Central	K. E. Morton	H	30	0	1305	44.0
Davidson	C. E. Graham		48	3	1352	43.8
Southwestern 3	David Kemp	G	39	7	796	43.7
State Institutions	N. C. School for Blind	H	30	2	1116	42.8
Piedmont I-A	Valley Farm Dairy	J&H	36	3	934	42.8
Northeastern	Norman Coward	G	15	1	1020	42.7

DHIA LACTATION RECORDS

305-Day Lactation Records Taken From DHIA Supervisors' May Reports For Cows Producing 400 Pounds or More Butterfat

ASSOCIATION	OWNER & ADDRESS Cow's Name	COW IDENTIFICATION	BREED	AGE	LBS. MILK	LBS. FAT
Alamance						
	W. Kerr Scott, Haw River	55-7995	GH	4-0	9920	403
Alexander						
	Russell Oxford, Taylorsville	1415855	RJ	10-2	10470	538
	" " "	1771220	RJ	3-3	8870	522
	" " "	1771221	RJ	3-2	8650	504
Burke-Caldwell						
	C. B. Bollinger & Sons, Granite Falls	55-8206	GJ	5-0	11390	572
	A. H. Bradshaw, Valdese	1242922	RG	3-7	11020	501
	Shuford Mills, Inc. Granite Falls	1749926	RJ	4-5	7560	418
	G. B. Triplett, Lenoir	785723	RG	10-4	12300	534
	" " "	1035211	RG	8-0	10580	455
	" " "	779409	RG	12-11	10370	425
Capital 1						
	Dr. H. C. Carr, University					
	Chilbrook's Baby Girl's Fancy	960436	G	7-3	11390	622*
	Guernsdel Noble Flora	1233199	G	3-7	10370	522*
	Guernsdel Maxim Christine	1336525	G	2-4	8110	424*
	Alice's Lady Max	605452	G	4-1	9440	413
	Guernsdel Princess Georgia	1332047	G	2-3	7570	402*
Capital 2						
	C. S. Bunn & Sons, Spring Hope	55A3684	GH	8-1	13340	471
	" " " " "	55A3695	GH	3-4	12070	454
	" " " " "	55A3690	GH	4-8	12180	442
	K. R. Myatt, Raleigh	1583583	RJ	6-8	10620	485
	" " "	1981292	RJ	1-11	7930	414
	J. R. Nipper & Sons, Raleigh	3196457	RH	5-5	13740	438
	Pine State Creamery, Cary	855295	RG	9-1	8550	405
Catawba 2						
	Mike Kiser & Son, Vale					
	Pfeiffer Inka Pontac	2994669	RH	7-1	14880	588
	Pfeiffer Johanna Inka	3190554	RH	6-9	13330	458
	Oswego River Model Inka	2285768	RH	11-9	12580	452
	Star	55-8666	GH	3-9	12060	446
		2994670	RH	8-11	13470	436
	J. O. Lutz, Newton					
	Nellie Design Pride	1432504	RJ	9-6	11060	538
	A. L. Shuford, Jr., Newton					
	Ashland Kate Betsy	2700344	RH	8-0	14280	557
Davidson						
	Aaron & Ray Crouse, Lexington					
	Deerspring Fayne Korndyke	2434701	RH	9-6	16300	557
	Lady Win Farm Fayne	2743218	RH	7-0	13460	515
Davie						
	Paul B. Blackwelder, Mocksville					
	Woodside Star's Daisy	883544	RG	8-2	7180	414
East Central						
	J. W. Taylor, Richlands					
	Lula Belle	1696142	RJ	4-2	7450	415
	Lillian Beth	1568854	RJ	6-6	8950	497
	Mabel	1678628	RJ	4-4	9250	508
	Lilac Fawn	1545959	RJ	6-11	9460	531
	Tiny Peggy	1563980	RJ	6-8	11020	534
	Princess Alma	1393335	RJ	6-4	10880	550

*3x milking all or part lactation

East Central con't.					
C. W. Wood, La Grange					
Snow Ball	558418	H	3-0	12550	425
Spot	558406	H	3-0	9000	420
Forsyth					
R. W. Clinard & Son, Winston-Salem					
Clinardale Ravenglen Rachel	3361096	RH	2-4	10240	421
BONC Rex Emma	2392500	RH	9-5	12230	419
J. K. Glenn, Winston-Salem					
Hollins Helag 7th	3212275	RH	3-4	12470	477
BONC Cascade Jolan	2556091	RH	8-7	14510	456
Sallykirk Sally	3274633	RH	3-7	11010	444
C. S. Kimel & Son, Winston-Salem					
Dorothy	55-7265	GH	8-6	11510	428
No. 10	55-7230	GH	3-4	10580	421
C. H. Reed & Son, Winston-Salem					
Fobes Homestead Prilly	2772269	RH	9-3	13190	501
Ormsby Pontiac Fairlee	2839740	RH	5-10	10230	408
H. G. Thacker, Jr., Winston-Salem					
Thackers Princess Posita	3349955	RH	2-4	13450	483
Golden Belt					
Leland H. Kitchen, Scotland Neck	3224219	RH	5-0	15450	464
Iredell					
Louis G. Bowles, Statesville					
Darrow Pabst Lyon Sensation	3045246	RH	4-6	13860	466
Sensation Design Nina	2888596	RH	6-0	13940	452
Max James & Howard Stamey, Statesville	55A3977	GH	2-0	13500	473
Macon					
George L. Hunnicutt, Franklin	55A4511	GH	5-9	11970	468
" " "	55A4508	GG	5-8	8490	445
" " "	55A4512	GG	7-2	9220	413
Northeastern					
Robert R. Boseman, Rocky Mount	2790014	RH	6-2	13790	440
" " " "	1823284	RJ	2-7	7870	414
" " " "	2681984	RH	7-3	13380	405
W. H. Brake, Rocky Mount	1443531	RJ	9-2	9000	463
Ray Mayne, Washington	2004598	RJ	3-6	11990	616
" " "	1985985	RJ	3-2	10910	543
" " "	2004610	RJ	2-2	9940	530
" " "	2004598	RJ	2-2	8980	500
" " "	1985985	RJ	2-11	10100	486
" " "	2004601	RJ	3-0	8260	423
Orange-Chatham					
Dr. J. W. Beard, Hillsboro	3305387	RH	2-6	11330	450
" " " "	3305384	RH	2-7	13420	444
J. B. Fearrington & Son, Pittsboro	3207548	RH	5-7	15720	614
Lutterloh & Williams, Pittsboro	3119357	RH	4-0	11530	422
Piedmont I-A					
C. I. Carlson, Guilford College					
Skuggek Gay Alicia	1184255	RG	3-10	10510	529
Skuggek Lady Shamrock	955211	RG	7-7	8430	502
Innisfree Kings Brilliant	1321203	RG	2-5	7530	434
Skuggek Gay Lanette	1296287	RG	2-8	8300	421
Skuggek Majestic Marie	1108989	RG	5-6	7570	407
J. W. Cummings & Sons, Guilford College					
Grassy Meadows Lilith Empress	2955833	RH	5-6	12700	457
Butterfield Ormsby Pearl	3189611	RH	3-8	12710	429
W. E. Cummings, Summerfield					
Lutz	J5-9678	GH&J	5-0	13350	502
Jane	55-9707	GH	4-11	14210	487

Piedmont I-A con't.					
T. G. Kivett, Jamestown					
Hilltop Farm Model Aristocrat	3160338	RH	4-2	14690	485
Hilltop Farm Perfection Anette	3179336	RH	4-2	12280	459
Knight Bros., Guilford College					
Knightdale Count's Pauline	1220634	RG	3-8	9270	416
Knightdale Chris's June	1342295	RG	2-3	7820	409
C. W. Pemberton, Greensboro					
Black Becky	55-7126	GJ&H	3-2	10320	463
Little One	55-6671	GH	5-0	11480	421
Pomona Terra Cotta Farm, Jamestown					
PTCF Victoria Emmet Ruth	3603194	RH	4-0	12060	425
Valley Farm Dairy, Guilford College					
Jean	55-6663	GJ	5-2	8880	444
Piedmont I-B					
Dave E. Hodgin, Guilford College					
Hazly	3059046	RH	7-8	13550	451
Piedmont 6					
J. R. Haney, Marshville	1226405	RG	3-5	10200	522
Piedmont 9					
Wade Carrigan, Mooresville					
King Raider's Eva	1026630	RG	5-8	10620	497
	1378226	RG	2-5	8710	489
King's Katy Ann	1177986	RG	4-4	9770	483
	1226762	RG	2-11	9610	467
	1226762	RG	1-11	10100	463
Myrtle Bower Princess	1168545	RG	5-5	11160	462
	1378225	RG	1-9	9490	458
R. S. Edmiston, Mooresville					
Wood Ford O'Rosalie	361857	RA	5-5	12690	539
Wood Ford Glen M Lea	342666	RA	6-2	9660	414
Edmiston Farm Diplomatic Lorna	414255	RA	4-3	10310	408
Southeastern					
Coastal Plains Experiment Sta., Willard	1796516	RJ	2-5	10390	559
D. D. Cox, Clarendon					
Jewel	55-8801	GG	5-0	9690	445
William Sutherland, Fayetteville					
Jacky	2499402	RH	9-9	12040	426
Southwestern 3					
Shoal Falls Farm, Inc., Hendersonville					
Shoal Falls Compliment's Reba	990778	RG	6-5	13580	714
Shoal Falls Golden Mary	1249935	RG	3-4	11320	665
Shoal Falls Golden Flapper	1249937	RG	3-4	9990	544
Shoal Falls Golden Annabelle	1208695	RG	3-10	8100	445
Shoal Falls Golden Eva	1249936	RG	3-2	8320	408
Shoal Falls Golden Millie	1333118	RG	2-3	8170	403
John M. Waldroup, Hayesville					
Wal-Ford Ragapple Mary	3698518	RH	2-0	11550	425
Southwestern 4					
Robert J. Hunter, Harris	55A4464	GH	6-2	12970	472
C. F. Johnson, Hendersonville	55A3017	GH	4-6	11200	438
" " "	55A3009	GH	6-3	12310	431
John R. Kimberly, Tryon	1090566	RG	5-3	8530	448
J. C. Randle & Sons, Kings Mountain	1176941	RG	3-11	8210	423
Sunbeam Farms, Cherryville	1434558	RJ	9-6	10880	558
" " "	1441057	RJ	10-1	8680	436
" " "	1798666	RJ	3-0	7510	423
" " "	1798669	RJ	2-7	7710	420
" " "	1045916	RJ	3-11	7980	417
" " "	1798668	RJ	2-9	7230	405
" " "	1842534	RJ	2-3	8510	404
" " "	1752032	RJ	4-0	8280	403

State Institutions					
Appalachian St. Teach. College, Boone					
Thacker's H	2867888	H	6-0	15020	550
No. 72	3010276	H	5-5	13710	458
Smithy	2867895	H	5-8	13080	419
Caswell Training School, Kinston					
No. 158	55-6204	H	6-7	12580	536
No. 111	55-6199	H	9-0	14740	533
No. 142	55-6137	H	7-11	11690	430
No. 184	55-6781	H	4-11	10730	420
State Hospital, Raleigh					
No. 499	55-6463	H	5-10	17520	638*
No. 361	55A3152	H	7-7	15700	625*
No. 355	55-6459	H	8-3	15180	566*
No. A470	55-A3155	H	2-4	13850	530*
No. A480	55-A3129	H	2-4	13660	527*
No. 505	55-7093	H	4-10	13880	500*
No. 37	55A3127	H	2-3	12970	437*
No. 446	55-6469	H	6-2	13590	430*
No. 558	55A3153	H	3-5	11440	427*
No. 599	55A3135	H	2-3	12110	408*
No. 56	55A3128	H	2-6	10870	406*
N. C. School for Blind & Deaf, Raleigh					
Margaret	2745031	H	6-7	14100	539
Carrie	2923937	H	6-4	14620	501
No. 3	3100772	H	4-1	13180	471
Tri-County					
N. C. Sanatorium, MacCain	331220	RA	6-4	12740	521
" " "	261621	RA	10-7	9770	437

*3x milking all or part lactation

* * * * * * * * * * * * *

CALENDAR OF DAIRY EVENTS

DISTRICT 4-H CLUB DAIRY DEMONSTRATION CONTESTS

June 29	Asheville	July 2	Raleigh
June 30	Newton	July 7	Whiteville
July 1	Winston-Salem	July 8	Washington

July 14 - Upper Piedmont Jersey Parish Field Day, Cary Watkins Farm, Blanche, N. C.

July 19 - 4-H Club State Dairy Cattle Judging Contest, 10:00 A. M., N. C. State College, Raleigh, N. C.

July 22 - State Final 4-H Dairy Demonstration Contest, N. C. State College, Raleigh, N. C.

August 14 - Southeastern Regional Jersey Breeders Sale, Asheville, N. C.

August 18 - N. C. Ayrshire Breeders Fall Sale, 1:00 P. M., Iredell County Fairgrounds, Statesville, N. C.

August 24 - Proved Sire Heifer Sale, Hominy Valley Horse and Hound Show Barn, Enka, N. C.

August 25 - Proved Sire Heifer Sale, Iredell County Fairgrounds, Statesville, N. C.

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AGRICULTURAL EXTENSION SERVICE
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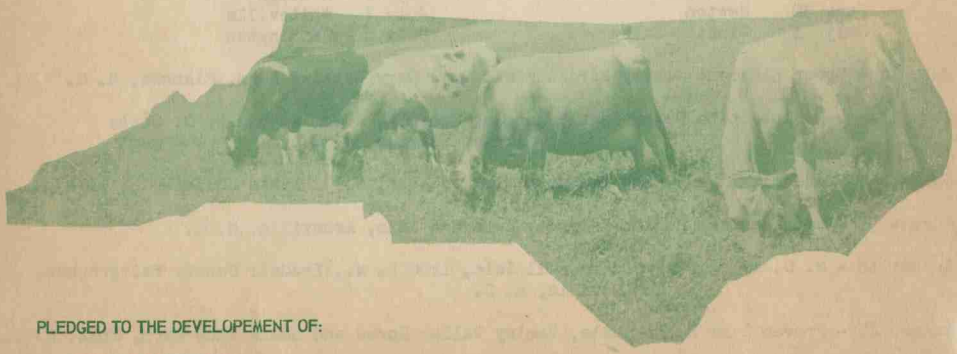


PLEDGED TO THE DEVELOPEMENT OF:

ECONOMICAL FEEDING
HIGH PRODUCING COWS
EVALUATING SIRES
EFFICIENT HERD MANAGEMENT

COMPILED FROM SUPERVISORS' REPORTS BY
DAIRY EXTENSION OFFICE, N. C. STATE COLLEGE, RALEIGH, N. C.
MARVIN E. SENGER, EXTENSION DAIRY SPECIALIST, EDITOR

Exhibit IV

A CHAT WITH THE TESTER

TO ALL TESTERS

Chat Sheet #12

November 18, 1954

YEARLY REPORTS

The yearly reports are coming in good but there are still a few that are past due. The records for each DHIA herd should be summarized within 60 days after the end of the testing year and the Index and Yearly Record of Individual Cows, BDI-DHIA 21 and the Yearly Herd Summary, DHIA-780, sent to the Dairy Extension Office. Check up on your herds to see if your yearly reports are up to date. If not, you should be giving some time to this. By March 1, 1955, all yearly reports for herds with testing years ending in 1954 should be in my office. We want to send them to the Washington, D. C. office for our county and state summaries at that time. Don't put off preparing your yearly reports, keep them up to date.

For details in preparing yearly reports and summarizing the DHIA herd book at the end of the testing year, I am enclosing a leaflet that should help you. It includes details on calculating feed costs and return over feed costs for individual cows at the end of the year when the new system is used. Read it carefully and file it in your Handbook for future reference. Even though you think you are familiar with preparing yearly reports and summarizing the herd book, I would suggest that you read this leaflet to make sure you are handling all details correctly. For instance, here are a few things that need your attention regarding yearly reports.

1. Take total cow-days on test, total milk and total butterfat from the BDI-DHIA-21, for the DHIA-780.
2. Be sure to give cow-days dry on the DHIA-780.
3. Give breed of herd as defined on page 55 of the Testers' Manual.
4. Give average weight of herd. Get it as accurate as possible.
5. Give reason cows leave the herd on the BDI-DHIA-21. This should be a specific reason not just "sold for beef". If this is not available start keeping it.
6. Give quality of roughages and per cent protein of concentrates. Start keeping this information month by month on BDI-DHIA-12 if you dont't have it available now.
7. Be sure to give accurate totals.

****

ENCLOSURES

Enclosed is a copy of the "The AB News" which Mr. T. C. Blalock, Dairy Extension Specialist, is sending to County Agents and Technicians. It includes interesting facts and material about artificial breeding in the state which I am sure you would like to know about. It is prepared quarterly and I will send each issue to you in the "Chat Sheet".

Also enclosed is a new leaflet entitled "Bigger Milk Checks though Artificial Breeding" which you will want to include as a part of your Handbook. Additional copies can be secured from your county agent or from the Dairy Extension Office.

****

CHECK UP ON YOUR FEED RECORDS

DHIA feed records are being reviewed rather critically and carefully by everyone interested in the cost of producing milk. This should present a challange to us in securing the most accurate feed figures possible. Work with your DHIA members in securing the right kind of data that should be used in feed records. A quick guess or "use the same as last month" is not always as accurate as it should be. Generally, the tester will have to take the lead in making suggestions in getting accurate feed amounts and prices. Keep informed on current feed prices and make adjustments each month. The DHIA member that tries to keep feed consumption and prices down on the day you visit the farm is only hurting himself. His feed cost per 100 pounds of milk may look better than the neighbors but an inaccurate record is worse than no record at all.

The feed cost per 100 pounds of milk is the most useful within the herd. If this figure is causing DHIA members to misrepresent the feed costs, I would suggest that we eliminate it from the county and state news letters. You will note in the News Letter that three or four associations have been running below $2.00 for feed cost per 100 pounds of milk in the last several months. I don't believe any are that low for October. On the other hand, you will note that a few associations are rather high. I don't want to say that these are wrong but I would like to urge that you check your feed data more closely, especially if your association is running unusually higher or lower than the others.

Shall we discontinue the column on feed cost 100 pounds of milk on the Association Summary Page in the Dairy Extension News? I would like your comments on this with your November DHIA report.

****

The 305 day lactation report card, DHIA-718, has been revised slightly. In the remarks column being sent out now there is space for the dry date and date the cow left the herd if the record is less than 305 days. There is also a space for the herd code number. Please include this data when reporting lactation records on this new card.

****

HERE AND THERE

Mr. and Mrs. John D. Wilkinson are the proud parents of a baby boy born on September 14. John is tester in Catawba #2. Mr. C. R. Nichols, tester in Southwestern #4, with his wife and daughter had the good fortune or representing their church at a conference held in Utah the first of October. They had an opportunity to visit their son and family on this same trip. Mr. Nichols reported a good trip, but tired when he got home. George Hager, tester in Capital #1, took a trip to Missouri in September to visit his relatives. George travels by air and he didn't get sick either. Charles Burke started testing last month for Catawba #3, a new unit of the Catawba Association. Charles took the training course in September. Edward Pierce who also took the training course in September started this month with some AR testing. He will be helping with all kinds of testing with assignments from the state office. A few of the testers and their families got acquainted with the hospital in October. M. B. Black's son had an emergency appendectomy, John Wilkinson had an operation and Joe Dan Washburn was fighting off a virus. They are all on the job now and doing fine as far as I know.

****

Marvin E. Senger
Dairy Extension Specialist

Exhibit V

DE-59

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF NORTH CAROLINA

EXTENSION

NORTH CAROLINA STATE COLLEGE OF AGRICULTURE AND ENGINEERING. NORTH CAROLINA COUNTIES AND UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING

Dear

Following is the average production, feed consumption, feed costs and return over feed cost per cow for the herd of

_____ _____ for the testing

year from _____ 19___ to _____ 19___ as taken from the total data reported on the Yearly Herd Summary Card, BDI-780 for this herd. Enter this data on the Ter Year Herd Summary, BDI-DHIA-14, in the DHIA herd book on your next visit to this farm. DHIA members must know these yearly averages to determine the progress they are making.

Cow Years _____

Cow days dry _____

Milk (pound) _____

Test (%)_____

B'Fat (pounds) _____

Unit price (per cwt.)
milk $_____

Value of product $_____

Succulent roughage _____lbs.

Dry roughage _____lbs.

Concentrates _____lbs.

Cow days on pasture _____

Cost of pasture $_____

Cost of roughage $_____

Cost of concentrate $_____

Total feed cost $_____

Return over feed cost $_____

Price per 100 lbs. of concentrate mix $_____

Enclosed is the Index and Yearly Record of Individual Cows, page BDI-DHIA-21 for this herd. On your next visit to this farm return it to the herd book for the owner's reference. If there are any questions relative to the above data, please let me know.

Very truly yours,

Marvin E. Senger

Marvin E. Senger
Dairy Extension Specialist

CC: County Agents

Note to County Agents: This summary is prepared from yearly data sent to the Dairy Extension Office by your DHIA tester when DHIA herds complete their testing year. After all herds have completed their testing year during the calendar year and have been reported to our office, a summary listing all DHIA herds in your county and the average of all these herds will be sent to you.

PROJECT III - JUNIOR DAIRY PROGRAM

The primary objectives of this phase of the Dairy Extension Program are:

1. To stimulate interest in dairy animals among boys and girls.
2. To provide training in the care and management of the dairy animal among those 4-H members who select dairying as their project.

Since the County Extension Agents have the responsibility of conducting the 4-H Dairy Program at the county level, all work of the Dairy Extension staff has been directed toward assisting county workers.

J. D. George, Dairy Extension Specialist, has devoted about two-thirds of his time to this field of work. His efforts have been mainly along the lines of preparing educational material, advising agents regarding the use of it, and serving in an advisory capacity to agents on the different phases of 4-H Dairy work.

The 4-H Dairy Production Project

Again in 1954 the 4-H Dairy Production Project received major emphasis. It is believed that this project offers more opportunity for training in sound dairy principles than any other 4-H Dairy activity.

In this project 4-H members keep production and feed records on their cows similar to DHIA records. A monthly report is sent to the county agents to facilitate close supervision.

During the project year ending August 31, 1954 approximately 160 members in thirty counties completed records on their cows.

County winning records from nineteen counties were submitted for state awards. Winners and awards were as follows:

Name	County	Award
Larry Payne	Alexander	$50 Savings Bond & Plaque
Don Martin	Alamance	25 Savings Bond & Plaque

Name	County	Award
Jerry Willis	Cleveland	$25 Savings Bond
Joe Cansler	Iredell	25 Savings Bond
Kenneth Howe	Gaston	25 Savings Bond
Betty Boswell	Guilford	Pen & Pencil Set
Donald Files	Caswell	Pen & Pencil Set
Charles Graham	Davidson	Pen & Pencil Set
Jane Fleming	Yadkin	Pen & Pencil Set
Darwin Allen	Davie	Pen & Pencil Set

Davidson County led all counties in number of 4-H members keeping the production record with 24 and also the largest number of animals on which records were kept with 69.

The following news story illustrates the valuable training which this project affords:

"Davidson 4-H'ers Earn,
Learn With Dairy Project"

"Norman Mifong is all boy. He has a face full of freckles and a boy's love of animals. His pockets are stuffed full of the usual junk a boy needs, plus something else -- money. Not that which jingles, but the folding kind.

Norman, son of Mr. and Mrs. H. C. Mifong, Winston-Salem, Route 4, can attribute his money to his cows, a 4-H project in keeping dairy records, and encouragement from his dad.

Norman and 23 other businesslike 4-H'ers are helping put a sound foundation under Davidson County's growing dairy industry. They are enrolled in a 4-H Dairy Production Project, modeled along the lines of the Dairy Herd Improvement Association testing program.

The principle behind the project is a simple one, based on a fact that every successful business man recognizes: You can't run a business without records to tell you where you are making money and where you are losing it.

W. W. Johnson, assistant Davidson County farm agent for the State College Extension Service, explains that the 24 boys and girls each month submit records on 69 animals. In some cases, the animals belong to the 4-H'er, in others, to his father. At any rate, according to Johnson, all are learning lessons that will be valuable when they have to earn a living. He points out that the record projects have led to many improvements in Davidson County dairy herds.

Norman, a student at Arcadia School, proves that you don't need registered animals to put dairy records to good use. He started keeping records on the performance of two cows in January, 1953. He now keeps records on 18 non-registered animals. During that time he has weighed and recorded 60,624 pounds of milk and 2,177 pounds of fat. The gross return for his dairy production project is more than $3,000.

The top production record of 13,940 pounds of milk was turned in by Chuck Graham of the Linwood 4-H Club. A registered Holstein made the record.

The average monthly production per cow, on which 4-H'ers keep records, last year was 842 pounds of milk and more than 30 pounds of fat. This is

more than double the state average production per cow."

The 4-H Dairy Demonstration Program

The 4-H Dairy Demonstration Program was conducted the same as in 1953. Although participation was about the same as in 1953, the quality of the demonstrations was considerably improved. The Dairy Extension Staff assumed the leadership in this program by keeping agents informed, arranging District and State contests, securing judges, finding sponsors, and providing sample demonstrations for agents' use.

Six District contests were held and the district winners competed in the State Finals. A brief summary of these contests follows:

Districts	No. Counties Competing	Winners
Western	4	Calvin Pinkerton (Buncombe) Ronald Pinkerton
Southwestern	5	Brooks E. Piercy, Jr. (Cleveland)
Northwestern	6	Wayne Gunn (Rockingham) Mack Turner
Northeastern	7	Glenn Lee (Halifax) Douglas Robertson
Southeastern	7	James Potter (Hoke) Clyde Leach
Eastern	3	L. G. Aman, Jr. (Onslow) Billy Vinson

Participation by counties is shown on a map on page 45A of this report.

Results in the state contest were:

Placing	County	Contestants	Subjects
1st	Halifax	Glenn Lee Douglas Robertson	"Proper Milking"
2nd	Cleveland	B. E. Piercy, Jr.	"Selecting a Dairy Cow"
3rd	Rockingham	Wayne Gunn Mack Turner	"Raising a Dairy Calf"

Other subjects used in the contest were as follows:

"Fitting for the Show Ring"
"Dehorning Dairy Cattle"
"Clipping for Cleaner Milk Production"
"Handling Milk on the Farm"
"Training and Showing a Dairy Animal"
"Breeding Heifers at the Proper Age"
"Proper Feeding for More and Better Milk"
"Just Plain Milking"
"Economical Production of Forage for Dairy Cattle"
"Artificial Breeding"

The awards in this contest, consisting of expense-paid trips to 4-H Club Week for District winners and a cash award of fifty dollars to the state winner, were provided by the following organizations:

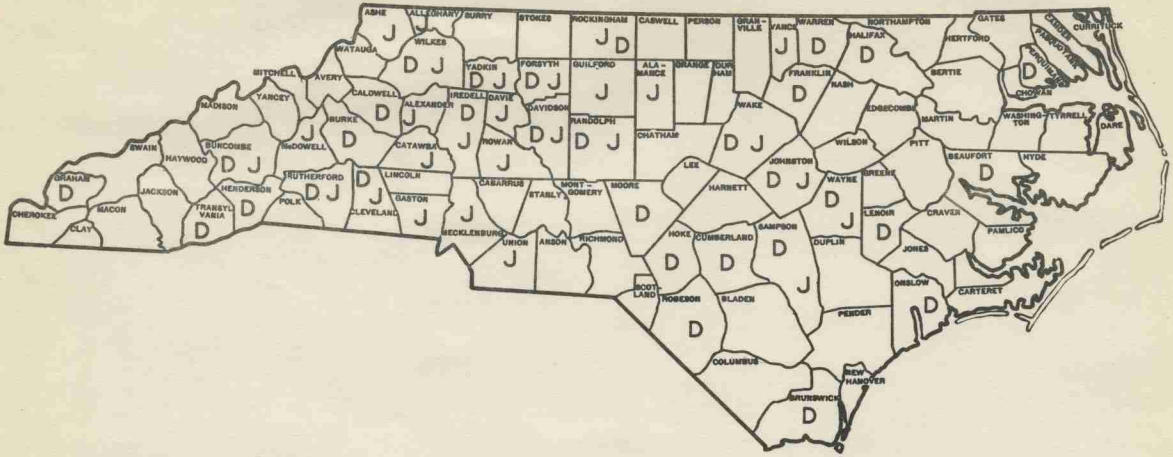
Western District	Wachovia Bank and Trust Co.
Northwestern District	Wachovia Bank and Trust Co.
Northeastern District	Wachovia Bank and Trust Co.
Southwestern District	Catawba Dairy, Inc.
Southeastern District	White Ice Cream & Milk Co.
Eastern District	Mayola Dairies
State Contest	North Carolina Milk Producers Federation

4-H Dairy Judging Program

The Dairy Extension Staff assumed the leadership in conducting a state-wide 4-H Dairy Judging Program. County agents were supplied with teaching aids for training teams. Assistance was also given at County Dairy Judging Schools in four counties.

The preliminary state 4-H Dairy Judging Contest was held on July 19, 1954 at North Carolina State College with teams from twenty-seven counties competing. The following counties entered teams: Alamance, Rowan, Iredell, Davie, Davidson, Wayne, Randolph, Cleveland, Guilford, Wake, McDowell, Gaston, Alleghany, Alexander, Catawba, Buncombe, Rockingham, Forsyth, Mecklenburg, Union, Rutherford, Sampson, Yadkin, Johnston, Vance, Ashe, and Wilkes. (See map on page 45A of this report)

PARTICIPATION IN 4-H DAIRY JUDGING CONTEST AND 4-H DAIRY DEMONSTRATION PROGRAM IN 1954



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J - ENTERED TEAM IN STATE 4-H DAIRY JUDGING CONTEST

D - PARTICIPATED IN 4-H DAIRY DEMONSTRATION PROGRAM

The contest involved placing eight classes - a cow and a heifer class in Jerseys, Guernseys, Holsteins, and Ayrshires. Contestants were required to give two sets of oral reasons and write two sets.

The top four teams in the preliminary contest were:

Placing	County	Score	Coach
1st	Alamance	1459	Tom Haislip
2nd	Rowan	1453	Stanley Corriher
3rd	Iredell	1392	R. R. McNeely
4th	Davie	1389	A. G. Smith

The above four teams competed in the state finals on August 10 and 11, 1954 at North Carolina State College Dairy Farm and surrounding farms. Eighteen classes were judged. In this contest Rowan placed 1st (3701 points), Alamance was 2nd (3636 points), Davie placed 3rd (3500 points), and Iredell was 4th (3422 points).

High scoring individuals which were chosen to make up the State Team to compete in the National Contest were:

Placing	Name	County	Score
1st	Bobby Boyd	Rowan	1271
2nd	Don Martin	Alamance	1239
3rd	Steven Edwards	Rowan	1222
4th	Joe B. Lindley	Alamance	1220

Mr. Stanley Corriher, coach of the Rowan team, was chosen to accompany the team to the National Contest and assist with the additional training of the team enroute to that event.

National 4-H Dairy Judging Contest

After a week (August 23-28) of training at North Carolina State College under the supervision of Mr. J. D. George, Dairy Extension Specialist, and

Mr. Corriher, the group departed for Waterloo, Iowa on September 28. Training sessions were held at Hoosierlea Farm, Franklin, Indiana, P. V. Stock Farm, Lowell, Indiana, Curtiss Candy Co. Farm, Cary, Illinois, Hoard's Dairyman Farm, Ft. Atkinson, Wisconsin, and Voegeli's Farm, Monticello, Wisconsin.

The National contest was held on October 4, 1954 at the National Dairy Cattle Congress. In this contest North Carolina placed 23rd among the 32 teams which competed. Among the individual breeds North Carolina placed 10th in Ayrshires and 8th in Guernseys.

The trip for the four team members and Mr. Corriher was sponsored by the North Carolina Purebred Dairy Cattle Association.

4-H Dairy Judging Contest, Atlantic Rural

A team consisting of Joe Corriher (Rowan), Richard Beaver (Rowan), Joe Cansler (Iredell), and Bobby Houston(Iredell) entered the Invitational 4-H Dairy Judging Contest at the Atlantic Rural Exposition, Richmond, Virginia on September 27. Mr. Glen Hardesty, Assistant County Agent, Salisbury, North Carolina accompanied the team. North Carolina placed 4th in this contest.

Junior Dairy Shows

Considerable emphasis was given to Junior Dairy Show work again in 1954. The shows provide training for the boys and girls in correct type and fitting and showing as well as bringing about more appreciation for the dairy animal through close contact with the animal. Also, shows provide the glamor needed to cause boys and girls to choose dairying as their project.

County and Local Shows

The county and local shows are perhaps the most important of the classes of shows. In addition to greater participation among the boys and girls, these shows also create more interest among adults due to their local nature.

The County Junior Dairy Shows are planned and conducted by the county agents and other county workers. The Dairy Extension Staff assisted by judging many of these shows and also give advice concerning their operation.

A list of county shows held in 1954 is shown in the table below.

County	No. Animals Shown	County	No. Animals Shown
Alamance	32	Brunswick	5
Alexander	40	Buncombe	32
Beaufort	9	Cabarrus	36
Caldwell	36	Mitchell	21
Catawba	45	Moore	19
Clay	13	Onslow	29
Cleveland	85	Person	12
Cumberland	18	Pitt	11
Davidson	60	Polk	22
Davie	20	Randolph	43
Durham	4	Rockingham	124
Forsyth	25	Rowan	33
Gaston	37	Rutherford	23
Guilford	42	Sampson	30
Halifax	10	Stanly	25
Henderson	29	Surry	30
Iredell	66	Wake	25
Jackson	12	Warren	19
Jones	3	Wayne	13
Lee	4	Wilkes	20
Lincoln	28	Yadkin	56
Macon	27	Yancey	23
McDowell	32		
Mecklenburg	11		
Totals	46 Shows	1416 Animals	

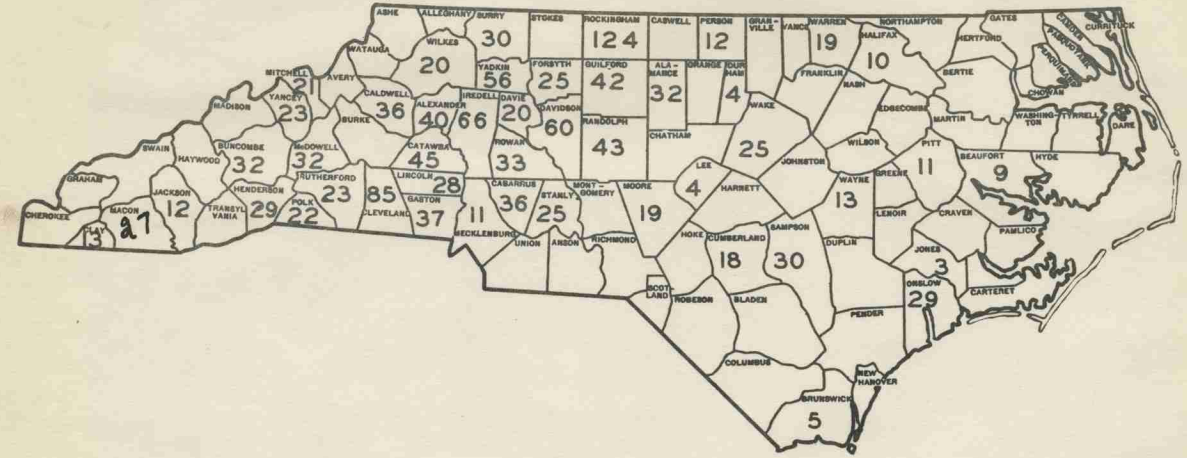
The above information is shown on a map, page 48A of this report. Approximately $11,500 were awarded as premiums in these shows, most of which was provided by business and civic organizations.

County and Local Shows for Negroes

In addition to the shows reported above, a group of Junior Dairy Shows was held in which only Negro boys and girls participated. These shows were

PARTICIPATION IN COUNTY JUNIOR DAIRY SHOWS

1954



~~45~~ 46 SHOWS HELD

~~1389~~ 1416 ANIMALS SHOWN

conducted by the Negro County Agents and other agricultural workers in the counties under the guidance of Mr. R. L. Wynn, Negro Dairy Extension Specialist. Approximately $3,000 were provided by civic and business organizations as premiums. A brief summary follows:

District	No. of Shows	No. of Animals Shown
Western	10	183
Northeastern	7	124
Southeastern	3	37
Totals	20	344

District Junior Dairy Shows

Eight District Junior Dairy Shows were held in 1954. The Dairy Extension Staff cooperated with the county agents in planning and conducting these shows.

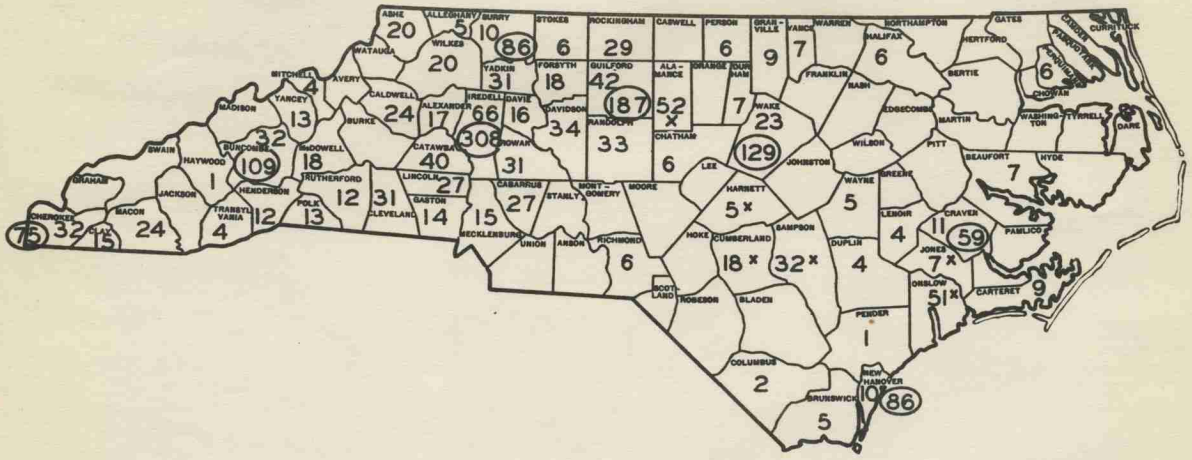
A summary of these shows is shown in the two tables which follow. Also, a map (page 49A) is included which shows participation by counties.

Table I

Summary of District Junior Dairy Shows - 1954

District Show	No. Animals Blue	Red	White	Total	No. Counties	Approx. Money Spent
Asheville	70	31	8	109	9	$ 970
Elkin	53	32	1	86	5	956
Greensboro	70	91	26	187	7	1,279
Murphy	27	34	14	75	4	786
New Bern	38	21	0	59	5	869
Raleigh	77	48	4	129	13	2,300
Statesville	168	129	11	308	11	2,800
Wilmington	38	43	5	86	12	1,212
Totals	541	429	69	1039	66	$11,172

PARTICIPATION IN DISTRICT DAIRY SHOWS 1954



8 SHOWS
1039 ANIMALS

BREAKDOWN BY RIBBONS:

541	BLUES	(52.1 %)
429	REDS	(41.3 %)
69	WHITES	(6.6 %)

x COMPETED IN TWO SHOWS

Table II

Summary of Shows by Breeds

Breed	Blue	Red	White	Total
Ayrshire	36	13	0	49
Brown Swiss	2	0	0	2
Guernsey	157	137	30	324
Holstein	96	72	10	178
Jersey	197	136	13	346
Grades	53	71	16	140
Total	541	429	69	1039

All premiums and other expenses connected with these eight shows were provided by civic organizations within the state. Major sponsors were: Belk Stores (Statesville, Raleigh, and Elkin); Asheville Agricultural Development Council (Asheville); Greensboro Chamber of Commerce (Greensboro); New Bern Chamber of Commerce (New Bern): Wilmington Chamber of Commerce (Wilmington); and Murphy Fair Association (Murphy).

Fitting and showmanship prizes were provided by the Purebred Dairy Breed Associations (Holstein, Jersey, Guernsey, and Ayrshire).

District Junior Dairy Shows for Negroes

District shows for Negroes were conducted in the same manner as those for Whites. Mr. R. L. Wynn worked with local agents in planning and conducting the shows summarized in the following table:

Place of Show	Total Animals	Ribbons			Money Spent
		Blue	Red	White	
Raleigh	21	6	12	3	$200
Kinston	50	13	26	11	600
Snow Hill	35	10	14	11	336

Place of Show	Total Animals	Ribbons Blue	Red	White	Money Spent
Lumberton	29	7	11	11	$225
Whiteville	38	10	19	9	355
Windsor	52	20	19	13	839
Statesville	85	42	26	17	508
Fayetteville	63	19	22	22	578
Greensboro	51	23	15	13	425
Louisburg	35	10	12	13	298
Carthage	29	9	13	7	477
Reidsville	33	17	15	1	284
Elizabeth City	20	5	10	5	174
Shelby	74	38	24	12	422
Totals	615	229	238	148	$5,721

Premium money for these shows was provided by civic and business firms throughout the state.

Junior Dairy Show at State Fair

Personnel of the Dairy Extension Staff supervised the Junior Dairy Show at the North Carolina State Fair. The show this year drew a total of 146 entries - the largest in the history of this event. Cattle were shown from nineteen counties. The Danish system of judging was used under which 65 received blue ribbons, 71 received red ribbons, and only 10 drew white ribbons. Premiums totaling $2,653 were awarded by the North Carolina State Fair.

Summary of All Junior Dairy Shows

	No. Shows	No. Animals
County and Local Shows (Whites)	46	1416
County and Local Shows (Negroes)	20	344
District Shows (Whites)	8	1039
District Shows (Negroes)	14	615
State Junior Show (State Fair)	1	146
Totals	89	3560

Approximate amount spent on shows (Cash and Merchandise) $34,046

Regional Junior Show at Atlantic Rural

North Carolina was represented at the Atlantic Rural Junior Dairy Show by State Junior Herds in Holsteins and Guernseys. While participation was under the sponsorship of the Breed Associations, the Dairy Extension Staff served in an advisory capacity.

Placement of Dairy Calves

The Dairy Extension Staff has assisted agents in locating calves for 4-H members. Also, special Junior sales were staged by the North Carolina Holstein Breeders Association and two Jersey Parish Organizations.

The Dairy Calf Chains and Foundations were again very effective in placing calves among 4-H members. Even though no new ones were started those in operation in 1953 were continued in 1954. Approximately 200 purebred calves were placed through these organizations in 1954.

Cooperation with Breed Associations on Junior Programs

During 1954 the Dairy Extension staff worked very closely with the Dairy Breed Associations on Junior work. Each of the associations had a youth committee through which the work was channeled. Advice was given on a program of Junior Activities for each association. These organizations have also assisted with many phases of the 4-H dairy Program. The following is a brief summary of the activites of each toward promoting youth work:

Jersey Breeders Association --Provided fitting and showmanship award in District Shows and also at State Junior Show. Presented a Certificate of Merit to the outstanding 4-H Jersey member from each county. Sponsored calf placement sales at three locations in the state.

Guernsey Breeders Association--Provided fitting and showmanship awards in District Shows and at State Junior Show. Awarded Certificates of Merit to the outstanding 4-H member from each county. Awarded a plaque to each member and coach of highest scoring county 4-H Dairy Judging Team in Guernseys in the State Contest.

Holstein Breeders Association - Provided fitting and showmanship awards in District Shows and in State Junior Show. Presented a Certificate of Merit to each boy and girl exhibiting a blue ribbon Holstein at a District Show. Sponsored a State Junior Herd of Holsteins at the Atlantic Rural Exposition.

Ayrshire Breeders Association - Provided fitting and showmanship awards at District Shows and at State Junior Show.

Miscellaneous Other Activities

Fitting and showing demonstrations were conducted at six locations in the state for the Negro County Agents throughout the state. These demonstrations were well received and resulted in an improvement in the fitting and showing of animals in the Junior Shows for Negroes.

Teaching Aids for Agents Use

The Dairy Extension Staff continued the program of keeping county personnel supplied with teaching aids on the subject of dairying. This material is used by the agents in the 4-H Club meetings. Slides and posters were available on the following subjects:

1. "The 4-H Dairy Project"
2. "Clean Milk Production"
3. "Bacteria, Milk and Business"
4. "Dehorning Dairy Calves"
5. "Fitting and showing Dairy Cattle"
6. "Judging Dairy Cattle"
7. "Raising Dairy Calves"

County Agents also distributed about 2,500 copies of the 4-H Dairy Manual, the publication prepared by this office for 4-H members to follow in feeding and caring for their dairy animals.

PROJECT IV - DAIRY FARM MANAGEMENT AND HERD HEALTH

The Agronomy, Farm Management, Agricultural Engineering, and Entomology Sections cooperate very closely in this phase of the project.

During 1954 sixty county-wide half-day dairy schools were held cooperatively with the Agronomy and Farm Management Departments. Many of these were joint schools with negroes. Approximately 2400 dairymen and agricultural leaders attended these schools. At each, ways to cut dairy feed costs and raise better herd replacements was stressed by the dairy specialist while a sound dairy feed production and marketing program was discussed by cooperating departments.

One state wide dairyman's conference was held at Raleigh in February. This was attended by 415 dairymen and agricultural leaders from every area of North Carolina. Herd health, feeding, management and the need for producing quality dairy products were the main points stressed at this conference. A similar conference was held at A. & T. College for dairymen and agricultural leaders.

During June and July 25 dairy fly control demonstrations were held in cooperation with the Entomology Department, County Agents, County Milk Sanitarians, milk plant fieldmen, commercial manufactures and vocational agriculture teachers. These were held right out in the dairy barn in each instance. Approximately 1150 dairymen and agricultural leaders attended these meetings.

During the summer months the dairy specialists helped to conduct 10 county summer field days or tours. These were conducted in cooperation with those in Agricultural Engineering and Farm Management. They were most successful events and each was attended by 75-150 dairymen and agricultural leaders.

The severe summer droughts of the past 4 years have greatly expanded the interest in silo construction throughout North Carolina. There is no

accurate way to estimate the number of silos both trench and upright that have been constructed in North Carolina during the past 3-4 years. However, it is safe to say that many thousands have been completed. A census now being completed will give an accurate count of new silos for inclusion in next years report. In one county in the mountains 228 temporary and 24 permanent type silos were constructed in 1954.

Efficient dairy farm management requires that farms be properly equipped with labor-saving buildings and machinery. The dairy specialist cooperating with agricultural engineering specialists have developed a number of plans for milking, lounging, calf, and bull barns, and for silos. During 1954, 4645 ~~2010~~ of these plans were mailed out on request to farmers and county agents. Among these plans were 385 ~~214~~ for milking parlors, 862 ~~542~~ for pole or lounging barns, 425 ~~225~~ for six-cow stanchion and 311 ~~110~~ for twelve-cow stanchion barn plans, used for milking only. In addition the agricultural engineering specialist and the dairy specialist reviewed all the plans now available, reworking and remodeling them in the light of new research and findings in the field.

During 1954 fifteen unit demonstration dairy farms were selected in the western district of North Carolina. These farms have each been visited once and some twice during the year by the dairy, agronomy and farm management specialist and county agents. Long time plans for improvement and development of these farms have been drafted. It is the plan to use the farm unit approach for these demonstrations and measure results and accomplishments from year to year.

A dairy day was held in conjunction with Farm and Home Week this year during June. A large crowd of 300 dairymen were in attendance. Tours of the dairy farm and the new disease laboratory were conducted. Under Secretary of Agriculture spoke and a panel on milk marketing problems was held.

The dairy specialist has made a special effort in 1954 to work closer with state and local veterinarians in promoting a more comprehensive herd health program. He spoke at the state conference for veterinarians and participated on a short course for veterinarians. Every effort has been made to acquaint dairymen with the facilities and uses of the new Animal Disease Diagnostic Laboratory now in operation on the North Carolina State College campus. Specific assistance has been given a number of dairymen on herd health problems. News releases and conferences with local veterinarians in the field are being held whenever the opportunity is presented. The request has now been presented to the state legislature specifically asking for a full time extension veterinarian to work on herd health problems.

Each of the approximately 500 farms on which DHIA testing is being conducted in North Carolina is a demonstration in farm management and roughage production. Much emphasis is being placed on this program. For details see section on Production Testing.

The dairy specialist participated in 15 meetings, attended by 1400 dairymen, called by milk plants to help their producers solve specific critical problems in their dairy operation such as, feeding during times of drought, controlling off flavors in milk etc.

During 1954 a great many news releases and articles have been prepared on this phase of the project. See statistical report. Articles on feeding and management have been prepared monthly for one of the large dairy cooperatives in the state. The dairy specialists have given numerous talks over the newly developed college radio station which is a daily program covering most of North Carolina. The specialists have participated in 10 television shows which stressed dairy farm management and herd health problems.

Literature prepared during 1954 specifically related to this project is listed below:

Choosing a Grain Mixture For Dairy Cows

Opportunity For Cutting Dairy Feed Cost in North Carolina

Feeding Dairy Calves and Heifers

Corn Shucks as a Roughage For Lactating Dairy Cows

Silage From Pasture and Hay Crops (Revised)

What's In The Bag

A Guide to Better Dairying (Revised)

PROJECT V

COOPERATION WITH OTHER ORGANIZATIONS AND AGENCIES

Breed Associations

At the annual meeting of each of the dairy breed associations, Jersey Guernsey, Holstein and Ayrshire, a plan of work for the year is developed. The specialists assist in developing these plans to better coordinate and enlarge the activities of these groups. These associations assist in developing the dairy industry in the state through the promotion of registered cattle and particularly through 4-H dairy club work. Their activities in the 4-H and production testing fields are described in other sections of this report. In addition these groups are composed of leaders in the dairy field who assist in many ways to promote better dairy practices throughout the state.

During 1954 the dairy specialists assisted with 8 parish or district Jersey meetings and two state field days, 6 county Holstein meetings and two state field days, two state Ayrshire and Guernsey meetings and 4 county Guernsey field days. These were attended by agricultural leaders and dairymen. Total attendance, 2750. The specialists assisted with the development and participated in these programs which emphasized various phases of breeding, feeding, management, herd health and milk marketing.

North Carolina Purebred Dairy Cattle Association

The dairy specialists worked with the North Carolina Purebred Dairy Cattle Association on problems relating to the development of the dairy industry. Two meetings of this group were held during the year for planning purposes. This group is of real assistance in stimulating the various breed

associations to greater efforts in developing the 4-H and production testing programs. They have also been very effective in helping to develop better facilities at the State and Regional Fairs in North Carolina. They have assisted in the development of the new diagnostic disease laboratory and the development of a herd health program for North Carolina dairymen.

North Carolina State Grange and Farm Bureau Federation

The North Carolina State Grange and Farm Bureau each have dairy committees for developing policy and legislation in the field of dairying. The dairy specialist works and advises with these committees which have sponsored legislative bills helpful to the dairy industry.

North Carolina Milk Commission

In March of 1954 the North Carolina legislature set up a milk commission to help develop a more orderly system of purchasing and selling Grade A milk in the state. The college has been instructed to furnish technical information on milk marketing problems to the commission. The dairy specialist is a member of the college committee charged with this responsibility. This has required a great deal of time.

American Dairy Association

The North Carolina branch of the American Dairy Association was organized in 1953. This organization is very active in the field of publicizing milk and dairy products. The specialists have cooperated closely with this organization in its establishment and development. The specialists have spoken at 20 county and two state meetings and participated in 10 television and many radio broadcasts emphasizing the importance of selling people on the need for more dairy products in the diet.

Banks

The dairy specialist have cooperated with the bankers of the state in order to better acquaint them with the needs of dairymen. A two-week short course for young farmers was held in June. These young men came from many counties and were sponsored by the banks in those counties. They were given training and a look at the agricultural program at State College.

Milk Plant Fieldmen and Sanitarian's Conference

A state wide conference of milk plant fieldmen and Sanitarians was held in November 1954. One hundred thirty attended. This was a most profitable conference since it brought together these two groups that work closely with dairymen on an educational and regulatory basis. Much of the discussion centered around quality milk, production feeding and management of the dairy herd, public relations and how a more coordinated dairy program could be developed. The dairy specialist also participated in a program of this kind at the University of Kentucky.

American Breeders Service

Cooperation with this organization in the Artificial Breeding program is outlined in the breeding project of this report.

Shows and Fairs Judged

The dairy specialists have worked very closely with county agents and fair officials in order to make the dairy exhibits and the showing of dairy cattle at these events more educational. Much has been accomplished along these lines. The dairy specialists judged 70 dairy shows, the majority of

which were mainly 4-H in nature. Reasons on the placings were given at each show as was instruction on fitting and showing. In addition to these shows the dairy specialist served as official judge for the regional 4-H show at Richmond, Virginia and as official judge for Guernseys and Jerseys at the Mid-South Fair at Memphis, Tennessee. A minimum of 30,000 attended these events.

American Dairy Science Association

The dairy specialists are all members of the American Dairy Science Association and take a very active part in the activities of this National Scientific Organization. Five of the specialists attended the National meetings at Penn State University. One is a Director of the Association, and a member of the membership and antibiotic committees. One is a member of the association's 4-H committee while another was chairman of the Dairy Records Committee during 1954.

Other Activities

The dairy specialist participated in the regional purebred dairy cattle planning conference at Roanoke, Virginia in November. This conference coordinates the activities of the breed associations in some of the Southeastern states. The dairy specialist is a member of the National Purebred Dairy Cattle Association subcommittee on type and a member of the Dairy Husbandry Research Branch Advisory Group on the DHIA and Sire Proving work of the U.S.D.A. These are national committees and met during 1954.

PROJECT VI - DAIRY MANUFACTURING

The dairy manufacturing project by virtue of its economic position is slightly differnt from the other projects in Dairy Extension. It is different because many of the problems that arise are spontaneous and must be handled immediately if the dairy plants are to prevent economic loss. In actuality the Dairy Manufacturing Extension worker might think of himself as a "country doctor" who takes care of the sick when needed but through certain educational projects from year to year attempts to reduce the number of spontaneous outbreaks. The Dairy Industry of North Carolina has grown tremendously in the last 10 or 15 years. Therefore, there have been many spontaneous problems and there will continue to be many, however, it is hoped that through definite extension projects this number will be reduced to a minimum.

Some of the Dairy Manufacturing projects have been aided greatly by the economic trend. In other words, it is not as easy to make money now as it was a few years ago. Thus the projects that deal with cutting costs and getting maximum efficiency out of labor and equipment have not been as hard to sell as in previous years.

In order to enumerate the accomplishments of the past year, the goals for the calendar year 1954 will be listed and elaborated upon.

Goal No. 1. <u>To assist five or more plants in establishing fat-loss records and thereby increase the overall efficiency of the plant</u>.

A fat loss record can be described best by comparing it to a bank statement. A bank statement gives a monthly record of the deposits made, the checks written and the balance (what you have left). The fat-loss record is the same sort of record except it is done daily. To maintain a fat-loss record the dairy plant operator does two things. No. 1 - He records his daily receipts, runs a fat test and finds the amount of fat he is charged with. No. 2 - He

processes the milk, runs fat tests on all of the finished products and on what is left (milk not utilized that day). Then, number two subtracted from number one is the loss for the day - and there should be a fat loss for the day. The rule of thumb is that an efficient operator should not have over a 2% loss, but should try for a 1% or less. If he does not have a fat-loss, something is wrong. He is either giving short measurements, or his tests and weights are inaccurate.

This type of record because of its nature has been hard to sell. However, four plants have installed this system and another is gradually installing it. Those plants that were sold, so to speak, were Melville Dairy, Burlington; Fairview Dairies, Sanford; Montgomery Dairy, Troy; Pineview Dairy, Ahoskie and partially sold was Guilford Dairy, Greensboro. Out of this group Melville Dairy showed the most improvement. After they installed the fat-loss records suggested by the Dairy Manufacturing extension personnel, their fat-loss dropped from a 3% fat-loss in the previous year (taken from yearly recap on sales versus purchases) to slightly above 1%. This goal was greatly assisted by complete cooperation from management. Management agreed to give everything saved below 1 1/2% fat-loss to plant personnel in form of a yearly bonus. This decision served as a stimulant to this project.

After 6 months of work on this project it was felt that more progress could be made by attacking it from a dollars and cents standpoint. At about this same time, the North Carolina Dairy Products Association saw fit to sponsor a program of Cost Comparisons offered by the E. B. McClain Co. of Memphis, Tennessee. The Dairy Extension Personnel gave their assistance in helping install the necessary records needed to obtain this information. There were 5 plants taking this service at the time it was sponsored by the North Carolina Dairy Products Association and at the end of the year, Decem-

ber, 1954, there were 10 plants. The Dairy Extension personnel gave assistance to four of these plants. Assistance has been given to four others that will start in April of 1955. This service is a cost comparison which compares the costs of each plant against the average costs of all plants participating. These costs are broken down into specific headings so that each plant is compared in a similar manner. The relative position of each plant in these comparisons serves as a stimulus to either do better or to maintain its position.

Goal No. 2. To give lectures and demonstrations on the proper procedure for making cottage cheese. Follow-up visits will be made to give individual assistance to twenty or more plants.

The individual assistance was given to individual plants. Instead of giving lectures and demonstrations on how to make cottage cheese the Dairy Extension personnel cooperated with the North Carolina Dairy Products Association, The Milk Industry Foundation and the Dairy Industry of North Carolina in a combined effort to increase the cottage cheese consumption from .67 pounds per person in North Carolina each year to a figure somewhat nearer the national average of 3 pounds per person. Rough estimates have shown that the average per person for 1954 was .75 pounds. This is an estimate and should not be used as official. However, it is significant to note that there was an increase.

Assistance was also given to the North Carolina Dairy Products Association in conducting a Buttermilk Promotion Program.

A total of 5 television programs were given to assist in these two promotions (3 in cottage cheese and 2 in buttermilk) in addition to preparing pertinent data on the preparation and use of these dairy products. Also a bulletin on a Home Method of making buttermilk and cottage cheese was prepared and distributed. A copy of it is enclosed. (Exhibit A).

Goal No. 3. To reach as many producers in North Carolina as possible by planned lectures, demonstrations and publications on quality milk production.

An attractive, portable exhibit and a publication were prepared on "Quality Milk". A colored picture of the exhibit (Exhibit B) and a copy of the publication is enclosed. (Exhibit C). Copies of this publication were sent to all of the dairy plants associated with North Carolina Dairy Products Association, and to all county agents.

During 1954 a survey was completed on all of the Grade A milk rejected, by plants, that come under the jurisdiction of the North Carolina Milk Commission. (This includes all plants that process 30 gallon or more per day). Results were obtained from plants that process 85% of the fluid milk for North Carolina. These results showed that for the year 1954, the dairy farmer of North Carolina lost approximately $268,000 because of poor quality milk. (Mostly off-flavors due to onions and feed flavors.) Many more dollars were lost in milk sales. The purpose of the survey was to see how much of an economic problem this loss was, with the idea of getting some research focused on this project. (A research project is now being drawn to help solve these problems.) Some of the procedures now recommended on feeding and management are apparently not doing the job.

Goal No. 4. To assist and establish in ten or more plants a definite procedure to check the quality of finished dairy products. This will include taste tests and activity tests to aid in producing a uniform buttermilk.

This goal proved rather hard to complete. In the first place, the plants that needed it most were not interested and the ones that did not need it particularly, had a fair program going. This program also required more time to perform than was available by extension personnel. However, the following procedure was adopted and followed in approximately 13 plants. On

each visit to the various plants during the year, it was suggested that all of the products processed that day be examined organoleptically. This was done and deficiencies noted. At the same time suggested remedies were given to correct these deficiencies. Also a laboratory control program was suggested. (The extent of the laboratory program depended on the size of the milk plant.)

In retrospect, this goal is a good one but it very definitely has to have the complete cooperation of management and the dairy plant personnel; i.e., in order for the products to be uniformly good they must be examined every day - not only when someone visits them and suggests they be examined.

Goal No. 5. To invite and induce as many high school graduates as possible to pursue the dairy manufacturing course at North Carolina State College.

This project proved fruitful this year. The freshmen enrollment in the Dairy Manufacturing curriculum for the year 1954-1955 was 11. This is the greatest number of freshmen enrolled in any one year since World War II, at North Carolina State College. It even outnumbered those enrolled in other schools, such as Michigan State and University of Maryland. Michigan State had 4 freshmen and the University of Maryland had 7.

The procedure followed was to suggest and explain the dairy manufacturing curriculum to likely looking high school graduates who were working at the dairy plants where visited. Also, the former graduates of Dairy Manufacturing were constantly reminded that there was a real need for new Dairy Manufacturing students. Many new freshmen come via this means of extension education.

One of the greatest factors contributing to this program was the fact that the North Carolina Dairy Products Association offered two scholarships of $500.00 each for incoming freshmen. This created a great deal of interest.

Therefore, our main job was to acquaint the high school student with the scholorship program. This was accomplished by sending to all county agents and vocational agriculture teachers (in cooperation with the North Carolina Dairy Products Association) copies of the enclosed bulletin (Exhibit D) and an announcement of the scholorship program showing the possibilities.

This project has been carried on for the past two years but this year's program seemed to gather more momentum than those in the past. It is hoped that it will bring greater results in future years.

Goal No. 6. To train thirty or more dairy plant personnel in the processing of dairy products through two, two-week short courses.

This project was completed although not in the numbers as were projected. The courses were divided into a two-week Market-Milk Short Course (Exhibit E) and a two-week Ice Cream Short Course (Exhibit F). There were 9 enrolled in the Market Milk and 8 in the Ice Cream or a total of 17.

The subjects covered in these courses dealt with methods of controlling quality of dairy products, plant processing and efficiency, records and record analysis, something on consummer preferences and Rules and Regulations of North Carolina. It is our opinion that this information is very informative and timely and is rendering a real service to improve the quality of dairy products and efficiency of the dairy processing plants in North Carolina.

Other Work Completed Not Listed Under Goals

a. Use of minature models to assist plant managers in making changes in building and equipment.

This model board and minature models was purchased by the Dairy Manufacturing Section to be used in teaching and extension. It has proved to be a very valuable extension tool to convey understandable information. A person

who does not understand blueprints can readily understand these layouts and minature models. Approximately 7 different dairy plants were assisted through this medium in 1954. (See Exhibit G)

b. Assistance was given to Marvin E. Senger - Teaching of Babcock testing for DHIA short courses. A copy of this work is listed under the DHIA project.

Publications and Visual Aids Prepared During 1954

In the plan of work for 1954 the publications listed to be prepared were:

1. A Method of Making Buttermilk and Cottage Cheese in the Home.
2. The prevention and control of off-flavors in milk.

These two bulletins were prepared in 1954 and are shown under Exhibits A and C.

NATURE OF SERVICES RENDERED IN DAIRY MANUFACTURING	NO. SEPARATE CONTACTS
Quality Control on the Farm	8
Creamery and Cheese Manufacturing Problems	1
Ice Cream Manufacturing Problems	9
Market Milk Problems	1
Quality Dairy Products Conference	5
Dairy Plant Remodeling Conference	6
Dairy Plant Equipment Advice	9
Dairy Plant Record Analysis	41
Dairy Refrigeration Problems	1
Dairy Retail Problems	3
Dairy Building Planning	20
Dairy Organization (new plants)	9
Dairy Plants Managerial Problems	13
Milk Supply (Grade A & Grade C)	3
N. C. State Fair Conferences Work	2
Technical Plant Control	50
College Conferences, Dairy Work	8
General Dairy Industry Problems	7
Dairy Plant Efficiency Problems	22
N. C. Producers Association Meetings	3
Supervising and Instructing Short Courses	24
Promotion of Dairy Industry	17
Extension Staff Conferences	12
Dairy Short Course Planning Conferences	4

NATURE OF SERVICES RENDERED IN DAIRY MANUF

N. C. Dairy Products Association Meetings	10
American Dairy Science Meetings	2
N. C. Dairy Technology Society Meetings	12
Annual Meetings Dairy Plants	4
Promotion of Dairy Products Consumption in	0
Dairy Marketing Problems	5
Promotion of Consumption of Dairy Products	2
T. V. Programs	7
Tenn. Dairy Products Ass'n. Meeting	1
Visit to Paper Manufacturing Plants	1
Dairy Fieldmens & Sanitarians Conference	4
*Dairy Exposition (Atlantic City)	0
Challenge Program	0
Judge Dairy Foods in Regional 4-H Contests	7
Plant Supt & Accountants Council Meetings	2
V.P.I. Ice Cream Conference	2
U.S.D.A. (Nation Wide Mktg. problem)	4
U.S.P.H.S. (Score card revision)	5

*Out of State

~~[illegible]~~

Exhibit A.

A METHOD OF MAKING CULTURED BUTTERMILK AND COTTAGE CHEESE IN THE HOME

Prepared by
Dr. R. B. Redfern
Dairy Extension Specialist

Office of Dairy Extension

March, 1954 D.M.E. No. 1

N. C. State College of Agriculture and Engineering of the University of North Carolina and U. S. Department of Agriculture, Co-operating, N. C. Agricultural Extension Service, D. S. Weaver, Director, State College Station, Raleigh, N.C. Distributed in furtherance of the Acts of Congress of May 8 and June 30, 1914.

Making Cultured Buttermilk in the Home
by
Dr. R. B. Redfern, Dairy Extension Specialist

Utensils and Supplies Needed

Double boiler, or Home pasteurizer
Tablespoon, quart milk bottle, or fruit jar
Thermometer
Fresh whole milk or skim milk
Plenty of boiling water for scalding utensils
Good, fresh buttermilk to use as starter

1. Select one quart of good fresh whole milk, or skim milk.

2. Use a clean, double boiler that has been scalded with boiling water. Put milk in top section of boiler, water in lower and heat until milk reaches 180° - 185° F. Then put a cover on boiler and let the milk stay at this temperature for 30 minutes. The reason for using a double boiler is to heat the milk uniformly. (Stir the milk at intervals as it is heating, using a clean spoon that has been rinsed in boiling water). Home pasteurizers are also used for pasteurizing milk. These can be purchased from Sears & Roebuck, Montgomery Ward or hardware stores.

3. After the milk has heated, cool it to 70° F. using tap water or ice water in the lower section of boiler. Cool no lower than 68° F.

4. At this point, transfer the milk to a clean, scalded quart bottle, or leave it in the double boiler. To this 70° milk, add 2 tablespoons of fresh buttermilk and mix thoroughly with a clean spoon. (This spoon should have been submerged in boiling water and allowed to air dry.) Put cover on boiler or put cover on quart bottle and allow to set from 12 to 16 hours (over night) undisturbed, at about 70° F. or room temperature. In this length of time the milk should have coagulated or formed "clabber".

5. After the milk has coagulated or formed "clabber", use a clean spoon to break the curd or clabber, and cool to 40° or 50° F. with ice water. (This is your buttermilk.)

   Now if you like the taste of the buttermilk you have just made, some of it may be saved to make more buttermilk. However, it should not be used for this after it is more than three days old.

   One quart of milk was selected to give an idea as to how much buttermilk to add. If two quarts are desired then use 4 tablespoons of buttermilk, etc.

   If whole lactic buttermilk is desired, whole milk should be used instead of skim milk to begin with.

   Sanitation is of great importance. Clean utensils that have been scalded in boiling water and air-dried should be used where possible. The use of good sanitation practices helps prevent unclean flavors in buttermilk.

Making Cottage Cheese in the Home
by
Dr. R. B. Redfern, Dairy Extension Specialist

Utensils and Supplies Needed

Double boiler or Home Pasteurizer
Thermometer
Tablespoon
Knife or wire egg beater
Cloth bag or cheese cloth
Salt
Junket Rennet tablet
Good, fresh buttermilk to use as starter
Boiling water for scalding utensils

1. Select 1 gallon of fresh, clean flavored, pasteurized skim milk. This 1 gallon should make about 1 1/2 pounds of cottage cheese. If raw milk is available, it may be pasteurized by heating to 143° F. and holding for 30 minutes. The milk should be cooled immediately to 40° F. if it is not used immediately, or to 72 - 75° F. if it is made into cheese immediately. A double boiler with milk in the upper compartment and water in the lower works very satisfactorily. Home Pasteurizers are also used. These can be purchased from Sears & Roebuck, Montgomery Ward or hardware stores.

2. Add one-third to two-thirds cup of good, clean flavored sour milk (cultured buttermilk) to this 1 gallon of skim milk that has been tempered to 72 - 75° F. Mix the sour milk or buttermilk into the skim milk with a clean spoon that has been submerged in boiling water, and air dried. Next dissolve one-fourth junket rennet tablet in two tablespoons of cold water and add one tablespoon of this solution (discard remainder) to each gallon of milk used. Stir while adding. Cover the container and let the milk set undisturbed for 12 to 16 hours (overnight usually works out satisfactorily) at this 72 - 75° F. At the end of this time it should have coagulated or formed a firm, livery curd. (Watch for formation of whey or breaking of curd away from edges of container to determine when this has been done.)

3. When this skim milk has formed a firm curd, then it is ready for cutting. Use a clean, long-bladed knife, egg beater, or butter cutter to cut the curd into about one inch squares. The wire type egg beater or wire butter cutter, will enable you to do this very easily.

4. After the curd is cut, it is then heated very slowly to 100° - 115° F. (A quart of 100 - 110° water may be used to help raise the temperature at first.) The time required to reach 100 - 115° F. should be about 30 minutes. As it is heating, the curd should be stirred very gently at about 5 minute intervals. The temperature to which the curd is heated determines the dryness of the curd. The higher the temperature, the dryer the curd.

5. When the curd is finished cooking, the whey is then ready to be drained. To do this, pour the curd into a clean cheese cloth sack or into any other type of cloth that will allow the whey to drain. Hang the sack where it can be drained adequately, and at intervals raise and lower the sides of the cloth so that it can drain more freely. This whey should nearly cease to flow in about 15 or 20 minutes.

6. After the curd has drained, it is then washed in two successive waters of about 50° F. and allowed to drain for several minutes. (At this point you will have to suit your own taste. If you like dry cheese, then let it drain longer.)

7. The next two steps will also be to your own taste. Some people like cheese very salty, others do not. One or two teaspoons to 1 gallon of milk (it is now curd) is about the quantity desired. Sprinkle the salt over the curd and work it in with a clean spoon. You may now eat the cheese or if you desire, you may add a small amount (about 1/3 cup) of fresh cream and have creamed cottage cheese. (This cream should be pasteurized, because cottage cheese spoils easily.)

EXHIBIT B

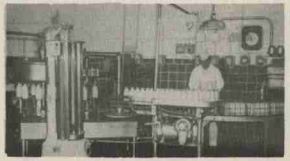

QUALITY MILK
MANAGED FEEDING
CLEAN LIVING
CLEAN UTENSILS
IMMEDIATE COOLING

EXHIBIT C

in Dairy Manufacturing offers YOU

- **OPPORTUNITY**--The dairy manufacturing industry is crying for college-trained men. In North Carolina alone are 200 dairy plants; each of them could use at least one more trained person.
- **STABLE BUSINESS**--Dairy products make up more than 25% of our average American diet. We now have 45% more children under 10 years of age than in 1940 and our "baby crop" is still increasing. Economists say we can expand per person use of dairy products by 36%.
- **GOOD INCOME**--Dairy manufacturing graduates start out in the same salary range as assistant county agents, vocational agriculture teachers, and textile and engineering graduates. Salary increases come as you become more skilled and take on more responsibility.
- **GOOD EMPLOYEE BENEFITS**--You'll find excellent working conditions in modern plants, paid vacations and holidays, and in many cases group hospitalization insurance and profit sharing plans.
- **CHANCE FOR ADVANCEMENT**--Most plants prefer to promote their own men from within the organization and there's ample opportunity to move up according to your own ability and performance.
- **INTERESTING WORK**--New products and processes are being developed so fast that you'll always find stimulating, challenging situations in your dairy manufacturing work. And in serving the health needs of the community, your work would be respected.
- **SECURITY**--Considering the basic demand for milk products in our diet and the present employment situation in the industry, the whole picture adds up to a long-time stable future for you in the dairy manufacturing industry.

Laboratory work is the first step.



Bottling milk is part of class work.

College dairy bar used in one course.

Advanced students study milk flavor.

It all adds up to happier people.

dairy manufacturing and *you!*

a career....

As a young man starting out to earn your own living, one of your most important decisions is to choose a career.

Maybe you're thinking of learning a trade like an electrician, or running your own business, or becoming a salesman, or going into farming, or entering a profession like engineering.

But whatever your choice, you need four basic qualities to make good:

Ambition

Intelligence

Willingness to work

Ability to get along with people

We all have a certain amount of these abilities born in us and we can all develop them about like we want to. And we need them to succeed in our work, whether we pick a job that requires college training or not.

So much for what you contribute to your work. Now what things have you a right to expect from your job, whatever it is?

Ample opportunity for employment

Interesting work

Security

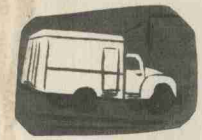
Chance for advancement

You'll find all these important requirements among the many different jobs in the dairy manufacturing industry. That's the business where fluid milk is bottled or processed into ice cream, cottage cheese, powdered and condensed milk, buttermilk, cheese, butter and many other nourishing dairy foods, It's a vital business serving the health of our nation.

In this folder you'll find a birds-eye view of your opportunities in the dairy manufacturing industry. We hope you'll take advantage of them.

opportunities....

PRODUCTION WORKERS—you might make ice cream, butter, cheese, dried, condensed, or evaporated milk; or run a bottler or pasteurizer; or be a plant sanitarian or engineer.



SALES AND DISTRIBUTION—here you'd work as route salesman, sales or advertising manager, distributor, or sell dairy supplies and equipment.

OFFICE WORK — among these important jobs are accountant, auditor, purchasing agent, bookkeeper, and many others.

MANAGEMENT — most of us, after enough experience, look forward to becoming a general plant manager, plant superintendent, branch manager, safety director, or other supervisory positions.

REGULATORY — within the plant you might work as a chemist, bacteriologists, or inspector to keep your company's products as top quality; outside the plant you'd work in a government public health agency.

RESEARCH — your opportunities in this rather scitific field lie in searching for new by-products of milk and new processing methods, or becoming a college teacher or dairy plant consultant.

training....

At N. C. State College, you can get excellent training in any of the six fields of dairy manufacturing. You'll have plenty of freedom to choose from a wide variety of courses to give you the training you want. To help chart your plans, each student has his own faculty adviser and together they select the best courses to suit each student's interests. You'll find the teachers friendly and helpful.

Your freshman year is pretty well filled with courses that provide a broad foundation for more specialized work taken later. During your sophomore year, you'll get your first look at dairy manufacturing. But you'd continue to broaden your foundation with courses in bacteriology, chemistry, botany, physics, economics, and public speaking.

For your last two years, you'd probably take most of the 14 courses in dairy manufacturing like market milk, making butter, cheese, ice cream, dairy chemistry, dairy bacteriology, dairy plant management, judging dairy products, and dairy technology.

Then you'd be virtually free to pick your own courses in business management, accounting or sales as applied to a dairy plant, or dairy plant engineering, or dairy manufacturing research. You can easily branch off into any of these related fields by choosing the proper courses.

The important thing is that you can get A-1 training in dairy manufacturing at N. C. State College and the course of study is highly flexible to suit your own special interests.

Prepared and distributed by
N. C. State College and N. C.
Dairy Products Assn.

EXHIBIT D

MARKET MILK SHORT COURSE

First Week

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
8 - 10	En Route to Raleigh	Acidity Testing	Babcock Testing (Milk)	Babcock Testing (Cream)	Chlorine & Alkalinity Testing
10 - 11		Dairy Arithmetic	Dairy Arithmetic	Dairy Regulations	Cleaning & Sanitizing
11 - 12		Buttermilk Cultures	Dairy Bacteriology	Dairy Bacteriology	Dairy Bacteriology
12 - 1	Lunch	Lunch	Lunch	Lunch	Lunch
1 - 4	Registration	Dairy Arithmetic & Use of Records	Dairy Arithmetic & Use of Records	Inspection of College Creamery Fly & Rodent Control	Cleaning & Sanitizing
4 - 5		Buttermilk Cultures	Transfer Cultures	Transfer Cultures	Transfer Cultures

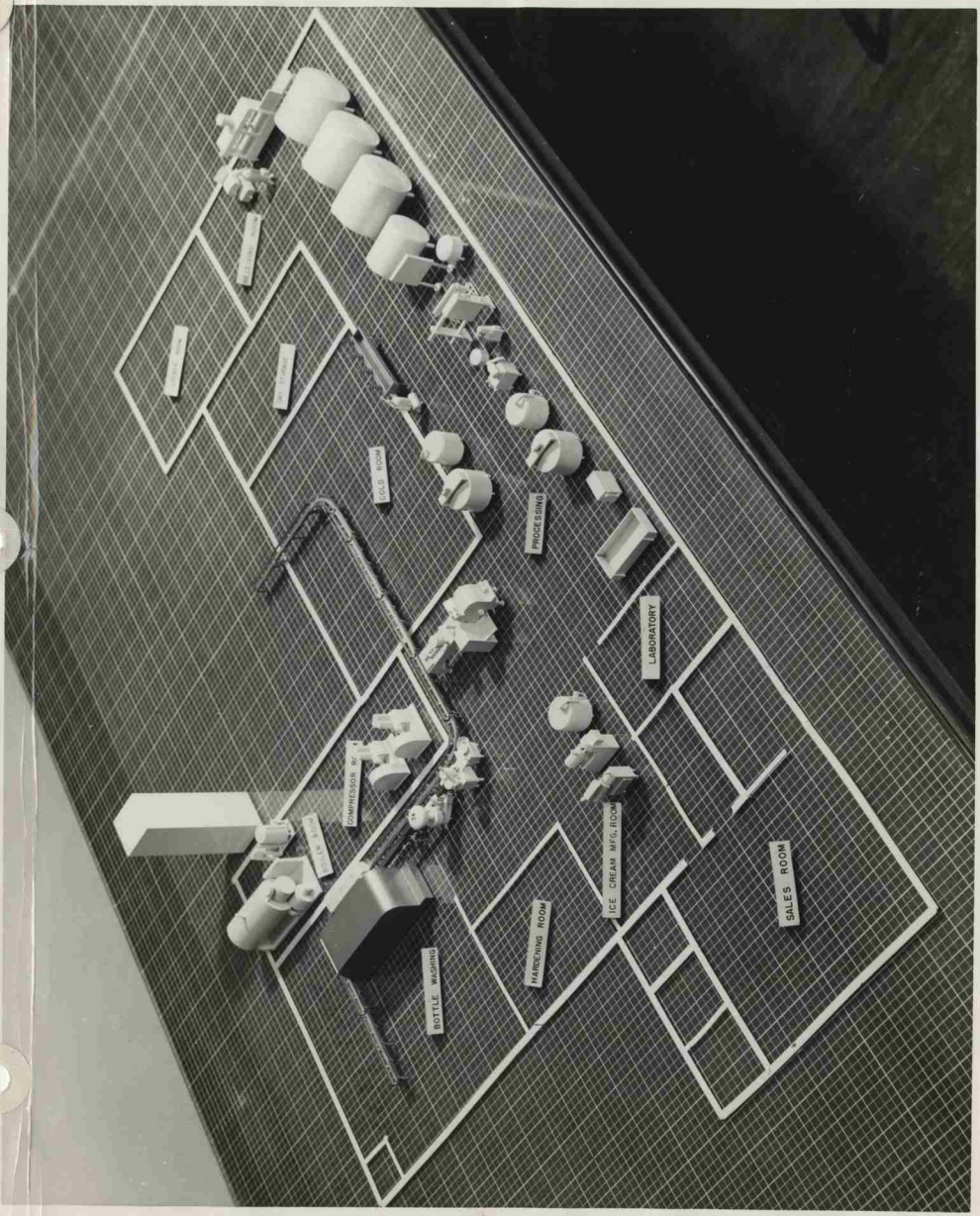
Exhibit E

MARKET MILK SHORT COURSE

Second Week

HOUR	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7 - 8	Dairy Plant Laboratory	Check Buttermilk Cultures	Dairy Plant Laboratory	Check B. . Cultures Production Planning	Quiz
10 - 11:30	Cream Line & Homo. Milk	Buttermilk	Chocolate	Cream	Judging Dairy Products
11:30 - 12:30	Lunch	Lunch	Lunch	Lunch	Lunch
12:30 -	Dairy Plant Laboratory H.T.S.T. Make Chocolate Milk Make Buttermilk	Dairy Plant Laboratory Vat Past. Milk Make Buttermilk	Dairy Plant Laboratory H.T.S.T. Chocolate Buttermilk	Separation and Standardizing of Cream	Visitations to Local Dairy, College Farm & State Hospital
5:00	Transfer Cultures	Transfer Cultures	Transfer Cultures		

EXHIBIT G
Proposed Layout For One of Dairy Plants in North Carolina
(Each square represents one square foot)



COUNTIES WORKED IN DURING 1954

Alamance	Currituck	Lee	Richmond
Alexander	Dare	Lenoir	Robeson
Alleghany	Davidson	Lincoln	Rockingham
Anson	Davie	McDowell	Rowan
Ashe	Duplin	Macon	Rutherford
Avery	Durham	Madison	Sampson
Beaufort	Edgecombe	Martin	Scotland
Bertie	Forsyth	Mecklenburg	Stanly
Bladen	Franklin	Mitchell	Stokes
Brunswick	Gaston	Montgomery	Surry
Buncombe	Gates	Moore	Swain
Burke	Graham	Nash	Transylvania
Cabarrus	Granville	New Hanover	Tyrrell
Caldwell	Greene	Northampton	Union
Camden	Guilford	Onslow	Vance
Carteret	Halifax	Orange	Wake
Caswell	Harnett	Palmico	Warren
Catawba	Haywood	Pasquotank	Washington
Chatham	Henderson	Pender	Watauga
Cherokee	Hertford	Perquimans	Wayne
Chowan	Hoke	Person	Wilkes
Clay	Hyde	Pitt	Wilson
Cleveland	Iredell	Polk	Yadkin
Columbus	Jackson	Randolph	Yancey
Craven	Johnston		
Cumberland	Jones		

COMBINED STATISTICAL REPORT OF ENTIRE STAFF

Days in Field	1377
Days in Office	1069
Days Sick Leave	3.5
Days Annual Leave	106
Farm and Other Visits	2584
Meetings Attended	1082
Attendance at Meetings	113,911

Correspondence

First Class Letters Written	8,304
Form Letters sent out	21,975
Miscellaneous Matter Mailed Out	11,493
Office Conferences	1,608
Articles Written, Radio and TV	240
Visits to County Agents	1,363