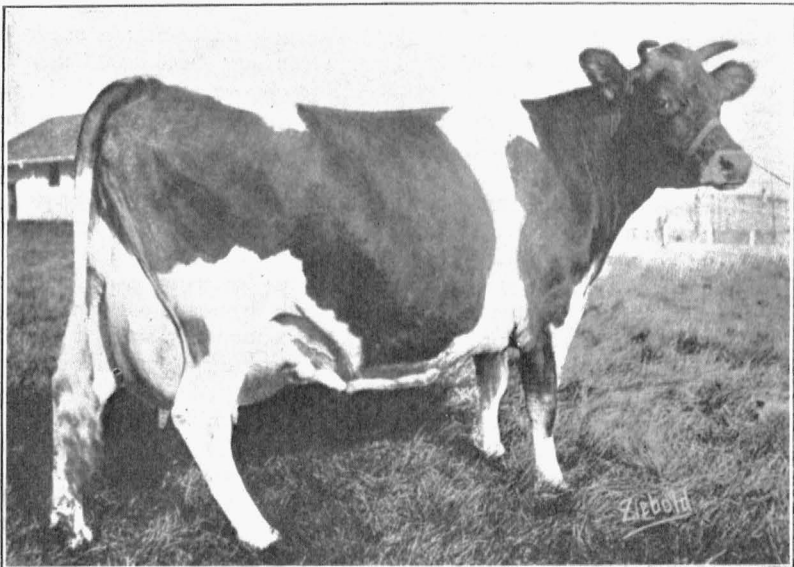


OFFICIAL TESTING OF DAIRY CATTLE

A. C. RAGSDALE, C. W. TURNER

The simple fact that a cow is registered, insuring purity of blood, conveys little idea of her real value, unless something is known of the productive ability of her ancestors and of herself. To provide a means of securing such information the Advanced Register or Register of Merit, was established by the various dairy cattle breed associations. Animals are eligible to entry in this register only when they have demonstrated their ability to meet the requirements established. Cows must produce a certain minimum amount of butter fat. Bulls must have daughters which have demonstrated their ability.

Official records of production are of great value to the dairy in-



GOLD MARJORAM

World's Champion Jersey Cow Eleven Years or Over at Beginning of Test produced 15,530.0 pounds of milk and 851.70 pounds of fat equivalent to 1002.0 pounds of butter in one year. Missouri Jersey Champion, also Champion over all breeds. Owned by J. E. Jones, Liberty.

dustry only when their honesty and accuracy are insured. To this end the present system of official testing of dairy cows was developed, thru cooperation between the various dairy cattle breed associations and the agricultural colleges and experiment stations. In order to further the interests of the dairy industry in Missouri, the Department of Dairy Husbandry of the Missouri Agricultural Experiment Station has undertaken the supervision of all official tests in this state. Supervisors are furnished and the accuracy of all tests made by them are vouched for. These supervisors are in the employ of the Agricultural Experiment Station and are under oath to follow the rules prepared by the various breed associations and the Experiment Station authorities governing their action.

VALUE OF OFFICIAL TESTS.

The system of advanced registration has been of great value to breeders of dairy cattle, particularly from a financial standpoint and as an aid in their breeding operations. It is profitable financially because a good record not only greatly increases the value of the cow herself and of her offspring, but of all closely related stock as well. Further, it provides authentic information upon which the selection of animals for breeding purposes can intelligently be made, and gives definite proof of improvement that is made thru selection and breeding. Official tests also raise the standard of each of the dairy breeds and increase their popularity.

1. **Do you want to cull the boarders?** The first discovery after beginning to test will probably be that some of your cows are not paying for their feed and care. This is not a pleasant discovery, but it is profitable information. It is not good business to keep a purebred cow that will not exceed the requirements for admission to the advanced registry with proper feed and care, nor is it profitable to continue to breed animals of inferior ability.

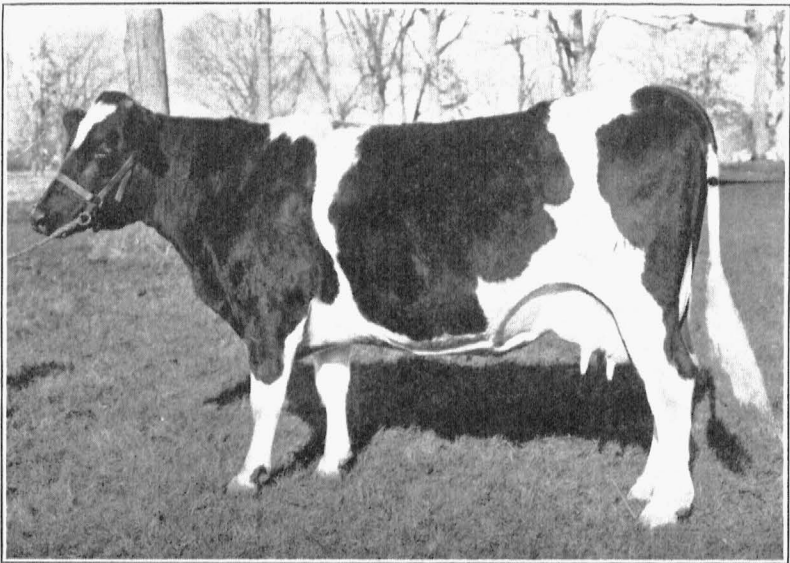
2. **Do you want to feed your cows more economically?** Everyone who has to buy feed at the high prices prevailing is interested in the amount of feed the cows will profitably utilize. With exact milk and fat records, more economical feeding according to the requirements of individuals will be made. It is true that many large records are made without regard to feed cost but a good record can be made economically since it is well known that the feed eaten above maintenance is the real productive feed for milk production.

3. **Do you want to select your breeding stock intelligently?** Improvement in stock of any kind depends upon the careful mating of the best animals. The trained eye can judge the trueness of breed type and conformation, but the actual productive ability is determined by test alone. The only sure and impartial judges of production are the Milk Scale and the Babcock Tester. Much is said about cows being bred-

NOTE: Jersey butter records are usually figured on an 85 per cent basis. Holstein breeders use an 80 per cent basis. Guernsey and Ayrshire breeders state their records in terms of butter fat only. To figure an 85 per cent butter record divide the total pounds of fat by 85 and multiply by 100. To figure an 80 per cent butter record divide total pounds of fat by 80 and multiply by 100. To change butter records to fat reverse the method in each case. The statement of records in terms of butter fat is the simplest and clearest, and it is hoped that all breed associations will ultimately adopt this standard.

for-production. An authentic record of the productive ability of each animal in the herd means an official record. The future productiveness of the herd is assured if the selection of the heifers from the best cows is made on the basis of the official test.

4. **Do you want to determine the value of your bull?** Test your herd sire. You spent considerable time and money in buying and selecting him, but do you know whether he is increasing or decreasing the value of your herd? He is the better half of the herd if his daughters are better producers than their dams. If he is the better half, after you are thru with him someone else will gladly purchase him. A bull with known prepotency is an asset both to your herd and to the breed which he represents.



PONTIAC LADY JOSEPHINE

Champion Holstein fat producer for Missouri. Bred and owned by the University of Missouri. Record for one year 23,503.0 pounds of milk, 768 pounds of fat, equivalent to 960 pounds of butter. Not only was she capable of big, yearly production but she was persistent as shown by her lifetime record which amounted to 124,725 pounds (over sixty-two tons), milk and 5302 pounds butter. Every milking was weighed and recorded.

5. **Do you want to demonstrate the merits of your herd?** You may know that your herd is capable of large records, but buyers are not willing to pay high prices for the stock on your "say so." They want to be shown. There is nothing that will bring such favorable attention to your herd as a number of good records. It will demonstrate beyond question the merit of your herd.

These and many other questions will be answered if you will begin official testing in your herd. The result of testing will be to increase the selling price of the cows and their offspring.

KINDS OF TESTS.

Two kinds of tests are conducted in Missouri. These are the so-called semi-official tests for yearly records and the strictly official test, usually for short time records. This second kind of test is conducted only on Holstein-Friesian cattle.

In the semi-official tests the milk and butter fat production of cows for two consecutive days each month is determined by a supervisor who is present at each and every milking during this period. He watches the cow milked, weighs, samples, and tests the milk of each cow, and certifies under oath to the correctness of the records of production. The average per cent of fat for this period is taken to represent the average quality of the milk for that month. The results of this test are reported by the tester thru the superintendent of official testing of the Experiment Station to the breed association concerned. The owner reports the daily milk yields direct to the cattle club at the completion of each month's record. By multiplying the per cent of fat in the milk for the two days' test by the total milk produced during the month, the estimated production of butter fat for the month is ascertained. The sum of the credits for each of twelve consecutive months makes the record for the year.

The second type of test is the strictly official test during which the milk and butter fat production is determined as in the two-day test of the semi-official work except this test extends over a period of usually seven to thirty or sixty consecutive days. The tests rarely extend for as long a period as a year.

EXPENSE OF THE TESTS.

The expenses in conducting the tests are as follows:

1. For semi-official yearly tests:

(a) Necessary traveling expenses of the supervisor. Expenses are divided equally among all breeders for whom testing is done, so that no one breeder is placed at a disadvantage because of his location in the state. These traveling expenses average approximately \$3.50 each month, frequently less, and rarely or never exceed \$4.

(b) Three dollars a day for the tester's time, which includes the time he is actually at the breeder's farm and a proportionate part of the traveling time. This ordinarily varies from two and one-half to three days.

(c) A fee of twenty-five cents a cow each month is charged to cover cost of clerical work in checking the supervisor's reports, postage, glass-ware and equipment for the test and for incidentals.

2. For short-time official tests:

(a) Necessary traveling expenses of the supervisor.

(b) Three dollars a day for supervisor's time including traveling time.

(c) A fee of fifty cents for each cow completing requirements on 7-day test, and one dollar for longer tests.

At the end of each month bills are made out by the Department of Dairy Husbandry and sent to each breeder. *The breeder makes payment direct to the Department of Dairy Husbandry.*

In addition, the breeder furnishes transportation for the supervisor to and from the station when he arrives and when leaving the farm. The owner will be notified of the arrival of the supervisor and if conveyance is not furnished within a reasonable time, the supervisor will hire a conveyance and the charges for this and for the time lost will be added to the bill of the test. In case the supervisor is moving from one farm to another in the same community, each breeder is expected to arrange for the tester to get to his farm.

The breeder must provide a Babcock tester. A tester with a capacity of at least twelve bottles is recommended. Sulphuric acid of the proper concentration must also be provided.

It is difficult to secure and retain the services of good supervisors and it is expected that each breeder will provide them with as comfortable quarters as possible. During the winter it is necessary that a warm room be provided in which to test, as the accuracy of the test is affected by temperature.

NUMBER OF COWS THAT MAY BE TESTED.

The largest number that the supervisor will be allowed to test under favorable conditions, is six cows milked four times a day; eight cows milked three times a day; fifteen cows milked twice a day. If it is desired that a larger number of cows be tested, the supervisor will double the time spent at the farm and make two or more tests.

MAKING APPLICATION FOR TESTS.

Information relative to the rules and regulations of the official test for each breed as well as application for tests, should be made directly to the official in charge of the work for each association. Following is a list of the officers to whom application may be made:

Ayrshire Breeders' Association, J. G. Watson, Secy., Brandon, Vt.
American Guernsey Cattle Club, W. H. Caldwell, Secy., Peterboro, N.H.
The Holstein-Friesian Association, Supt. M. H. Gardner, Delavan, Wis.
American Jersey Cattle Club, R. M. Gow, Secy., 324 W. 23d Street, New York City, N. Y.

An application for a supervisor must also be made to the Department of Dairy Husbandry of the Missouri Agricultural Experiment Station, Columbia, for the conduct of the test. Notice of at least ten days should be given in the case of an official test and by the twenty-fifth of the preceding month in the case of yearly tests.

BEGINNING OF TEST

The yearly test of Holstein and Jersey cows may begin four days after calving. No time is set for the beginning of a Guernsey record. These tests may consist of parts of two lactations but cannot exceed 365 consecutive days in length. In this case the milk production up to the fourth day after calving will not be accepted by the two breed associations first mentioned. The Ayrshire record may begin as soon after calving as desired and run 365 days in one lactation period. Seven-day records with Holsteins may begin the sixth day after calving.

The age of a cow is taken at the beginning of the record in the case

of the Jersey, Guernsey, and Ayrshire breeds, while in the case of the Holstein cows it is taken at the time of last calving.

REQUIREMENTS FOR ADVANCED REGISTRY OR REGISTER OF MERIT

The requirements for entry in the advanced registers are reasonably low and many purebred cows are capable of the required production. The following table shows the requirements for admission to the advanced registers of the various breed associations:

REQUIREMENTS FOR ADMISSION TO THE ADVANCED REGISTERS OF THE BREED ASSOCIATIONS.

	Ayrshire		Guernsey	Holstein			Jersey
	Year record		Yr. record	7-day record	Yr. record	305-day record	Yr. record
	Lbs. Milk	Lbs. Butter fat	Lbs. Butter fat	Lbs. butter fat	Lbs. Butter fat	Lbs. Butter fat	Lbs. butter fat (305-day record same)
2 years.....	6000	250.5	250.5	7.2	250.5	220.5	250.5
3 years.....	7000	287.0	287.0	8.8	287.0	257.0	287.0
4 years.....	8000	323.5	323.5	10.4	323.5	293.5	323.5
5 years.....	9000	360.0	360.0	12.0	360.0	330.0	360.0
Pounds increase per day over minimum	2.74	0.1	0.1	0.00439	0.1	0.1	0.1

TESTS OF GRADE COWS HELP SMALL BREEDER

Many breeders of dairy cattle just making a start in the purebred business with a few head of foundation cows, have considered official testing out of their reach due to the cost. A plan which will enable these breeders to test their best grade cows at the same time they are conducting official tests on their purebred cows and without extra cost except the regular twenty-five cent fee for checking the record, is offered to the breeders of Missouri. Dairy farmers are urged to put enough of their best grades on test to make a full run for the tester, as a year's record will greatly increase the value not only of the cow, but of her offspring. All rules governing the official testing of purebreds apply. In the case of these grade cows, a monthly report of the milk production must be sent to the Department of Dairy Husbandry of the Experiment Station, where it will be checked and recorded. At the end of the year a certified statement of the milk and fat production will be made to the owner. This arrangement makes it possible for a much larger number of the small breeders to begin official testing, and advantage should be taken of this opportunity.

RULES FOR THE SUPERVISION OF OFFICIAL TESTS

1. The supervisor shall be present at the last regular milking preceding the beginning of the test and shall see that the cow is milked dry.

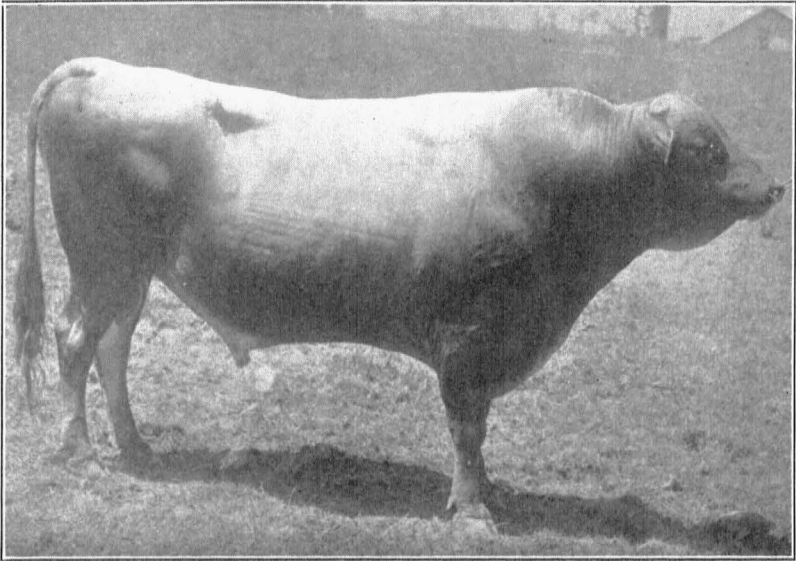
He shall note the hour that this milking is made and the last milking of the test shall be made at the same hour.

2. He must be present at every milking during the test and see that the pail contains nothing but the milk drawn from the cow under test.

3. Only one cow shall be milked at a time, and the supervisor must in every case be in a position to observe the milker during the whole milking.

4. Immediately after the milk is drawn at each milking he shall take charge of the pail and contents, weigh the same on scales provided by the Experiment Station and enter at once on his record the exact weight of the milk.

5. An extra pail shall be provided by the owner, and the milk shall be poured from one pail to another until thoroly mixed. The supervisor



SULTANA'S VIRGINIA LAD

The famous Jersey sire whose performance in the University of Missouri dairy herd has attracted nation-wide attention. His first five daughters to freshen in the University of Missouri herd produced an average of 76.8 per cent more milk and 86.3 per cent more fat and butter than their dams at the same age. These first five heifers averaged as two-year olds, 9011 pounds of milk and 511 pounds of fat, equivalent to 601 pounds of butter.

shall then take correct samples of the milk sufficient for his test and for the composite sample.

6. The samples of milk shall be kept under lock and key, or in the supervisor's sight until tested.

7. The fat determination shall always be made in duplicate, using properly calibrated glassware, and both determinations recorded. The average must be used in computing the amount of fat. The samples taken at any one milking shall not be thrown away until satisfactory duplicate tests of the milking are obtained.

8. Reading of the tests shall be made at a temperature of 130 to 140 degrees F. If the duplicate determinations vary more than 0.2 per cent the test must be repeated.

9. In case all or part of the milk of any milking be accidentally lost, the average of the six nearest milkings at the same hour shall be interpolated. It must be stated that such data are estimated. This rule shall apply only in the case of tests seven days or more in length.

10. The supervisor shall report to the person in charge of testing in the state any obvious violations of the rules of the breed association on the part of owner or attendants.

SOME POINTERS ON FITTING AND FEEDING FOR THE BEGINNER

The best preparation for a large record is proper breeding. A man who tests must be willing to pay the price of a good sire. Right on top of breeding comes experience and the only way to get it is by testing.

Conditioning and feeding cows for yearly or seven-day records, requires judgment and skill on the part of the feeder and milker. Each cow must be considered individually in feeding for highest milk production, for the reason that no two cows can be fed exactly alike. The following suggestions, however, will be helpful to beginners in the work.

The first consideration is to prepare the cow for the test by gradually bringing her into good flesh at the close of the previous lactation period. Six to ten weeks previous to calving the cow should be dried up and given a rest.

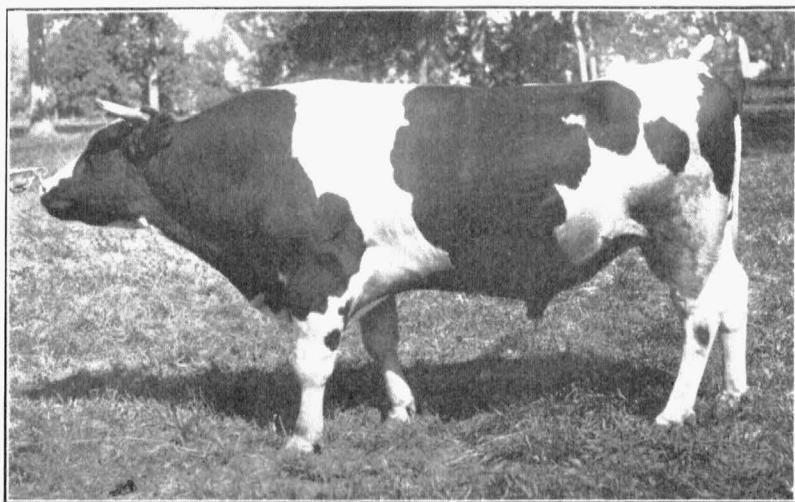
Good corn silage and a legume hay, preferably alfalfa or clover or good pasture grass, is the foundation of the ration during this preparation period. The grain mixture may be made up of three or more of the following named concentrates: cornmeal, hominy feed, wheat bran, ground oats, and oil meal. These feeds should be in such proportions and quantities as to insure palatability and a gradual gain in body weight.

A week before calving provide a box stall which has been thoroly disinfected. Reduce the grain feed and change its character so that it will be cooling, light and laxative especially. A good mash to use at this time may be made of four parts bran and one part each of oats and oil meal, or bran alone may be used. Every comfort must be provided and cold draughts of air, excitement, and strange attendants avoided. It is well to blanket the cow for at least a short time after calving. When the cow is in high condition of flesh there is danger of milk fever and one must be prepared to treat this successfully should it occur.

Water which has been warmed enough to remove the chill should be supplied on the first day after calving and at no time during the test should it be colder than if just drawn from a deep well. For the first few days after calving use the same kind of feeds as during the preceding week, changing gradually to the test ration and increasing to the limit of the cow's appetite, or as long as the production of milk increases. Do not make the increase more rapidly than one pound a day, unless the feeder knows well the ability of the individual cow. When the maximum production is reached the grain ration may be decreased a pound or two. The feeder

must be alert and learn from every point of view the effect of the ration. Note the condition of the bowels the first thing each morning as this and the way a cow relishes her feed are the chief indications by which the experienced feeder is guided.

For the test ration the first requisites are alfalfa hay (other leguminous hay will do), good corn silage and root crops. Beet pulp may be used in place of silage or roots if either is not available. If beet pulp is used it may be improved by adding two pounds of molasses per cow, to the water used to soak the pulp. Soaking should be for twelve to twenty-four hours before feeding. For the grain portion of the ration the following list of concentrates comprises the most popular feeds: wheat bran, oil meal, ground oats, gluten feed, cottonseed meal, hominy feed, distillers' dried grains, dried beet pulp, and cornmeal. Other feeds somewhat less popular



SIR KORNDYKE HENGERVELD DEKOL

For six years at the head of the Holstein herd of the University of Missouri. Has more than fifty A. R. O. daughters. Four of these have 7-day records ranging from 30 to 39 pounds. One daughter has a record of 1255 pounds butter in one year and another has made over 1050 pounds butter on yearly test. His blood is found in some of the best herds in the country. Two of his grandsons sold recently in public sale for a total of \$55,000.00.

but often used are: molasses, wheat middlings, gluten meal, brewers' dried grains, ground barley, malt sprouts, and a few of the specially prepared dairy feeds now on the market. From these feeds you may make various combinations that will tempt the appetite and give the best results. The slightest indication of daintiness or refusal of the cow to eat her full ration should be quickly noted and steps taken at once to bring the cow back to normal. A test mixture which has been found to give good results is a mixture of 250 lbs. wheat bran, 100 lbs. oil meal, 150 lbs. ground oats, 200 lbs. gluten feed, 100 lbs. cottonseed meal and 250 lbs. cornmeal or hominy feed.

Two secrets of both feeding and milking are frequency and regularity. The cow is a creature of habit, and irregularity in feeding or milking is liable to reduce the flow of milk and throw the cow off feed. Salt should be fed regularly or be available at all times. Water also should be available at all times or at least after each milking. Individuals may respond to extra amounts of certain feeds. Kindness and quietness with attention to the little things are essential to maximum production by the cow.

A study of the feeds used for animals establishing our world's records, cows of all classes and breeds, shows that with rare exceptions the rations are made up principally of the most popular feeds already suggested. It teaches there is no certain feed absolutely essential to a large record and that it is equally unnecessary to go outside the list of feeds suggested. Feeders of national reputation have no secret formulas but succeed because they have great ability in judging a cow's limitations, in noting her likes and dislikes, and in taking advantage of them. It is the art of breeding and skillful feeding and care that go to make a big record.

MISSOURI STATE CHAMPIONS

Altho Missouri has produced some first-class state records there is good opportunity for breeders to make a name for themselves by establishing new records. Here are the present State Class Leaders.

Jerseys		
Under Two Years	Milk, Lbs.	Butterfat, Lbs.
Raleigh's Star of Peace, 415770..... Longview Farm, Lee's Summit	7598.9	436.5
Junior Two-Year-Olds		
Oxford's Fontaine Rosabel, 323780..... Longview Farm, Lee's Summit	9376.8	548.15
Senior Two-Year-Olds		
Campus Virginia B, 317162..... University of Missouri	11848.7	624.67
Junior Three-Year-Olds		
Golden Fontaine's Susannah, 362185..... Longview Farm, Lee's Summit	9979.4	587.79
Senior Three-Year-Olds		
Mermaid's Fancy Wax, 359225..... Forgrave & Haggard, St. Joseph	9908.2	607.53
Junior Four-Year-Olds		
You'll Do Lilly, 318774..... Mrs. S. B. Thomas, St. Joseph	11702.1	631.47
Senior Four-Year-Olds		
Golden Fern's Gem, 282635..... Mrs. S. B. Thomas, St. Joseph	11177.5	623.02
Mature		
Gold Majoram, 215490..... J. E. Jones, Liberty	15530.0	851.70
Holstein-Friesian (Yearly Division)		
Junior Two-Year-Olds		
Sunny Dorothy 2d, 260868..... Frank Buzard, St. Joseph	13787.9	440.39
Senior Two-Year-Olds		
Campus Josephine Delphi, 276812..... University of Missouri	15384.1	464.81

	Lbs. Milk	Lbs. Butterfat
Junior Three-Year-Olds		
Marie DeKol Lyons, 231332----- W. D. Johnson, Kansas City	13286.7	443.96
Junior Four-Year-Olds		
Princess Pontiac Carlotta, 106359 ----- University of Missouri	16370.7	545.27
Senior Four-Year-Olds		
Carlotta Campus Girl, 192375----- University of Missouri	22039.3	582.12
Mature		
Pontiac Lady Josephine, 78266----- University of Missouri	23503.4	768.55
Aryshires		
Senior Three-Year-Olds		
Lady Douglas of Riverside, 20066----- University of Missouri	11,577	447.74
Junior Four-Year-Olds		
Columbia Douglas, 22923----- University of Missouri	9329	351.34
Mature		
Anna E. Douglas, 19050----- University of Missouri	10922	421.90
Guernseys		
Class A. Mature		
Imp. Duchess of the Villette, 31973----- L. S. Meyer, Springfield	7804.80	369.66
Class C. Junior Four-Year-Olds		
Dawn's Daisy, 54160----- C. W. Weiss, Cape Girardeau	14452.40	567.37
Class D. Senior Three-Year-Olds		
Zaida's Pretor Wild Rose, 35725----- C. E. Fulton, Springfield	7622.6	347.78
Class F. Senior Two-Year-Olds		
Imp. Ruby II of the Islets, 34522----- R. C. Zeller, Seymour	7936.70	406.99
Class G. Junior Two-Year-Olds		
Annie Laurie of Bonnie Neuk, 65294----- L. S. Meyer, Springfield	5617.53	291.56

THESE 72 BREEDERS CONDUCTED OFFICIAL TESTS THE PAST YEAR

Barry County

Gorg, R. A., Cassville
Scott, G. W., Monette

Buchanan County

Thomas, Earle, St. Joseph
Williams, Frank, St. Joseph

Cass County

Pickering Farm, Belton
I. O. O. F. Home, Liberty

Henry County

Weathers, J. S., Windsor

Jasper County

Ball, B. F., Webb City
Lundy, Mrs. Grace M., Webb City
Lochrie, G. M., Carl Junction
Long, John, Carl Junction
Poundstone, A. W., Oronogo
Thompson, O., Jasper
Suburban Home, Asbury

Jackson County

Barr, R. W., Independence
Goodspeed, E., Independence
Haysler, E., Martin City
King, F. M., Grandview
King, A. J., Grandview
LaForce, R. E., Martin City
Longview Farm, Lee's Summit
Morrison, A. Jr., Martin City
Oliver, Rolla, Independence
Pentocost, Earle, Martin City
Sweeney Dairy Farm, Kansas City
Walbridge, C. M., Independence

Greene County

Brower, D. D., Willard
Craven, R. O., Springfield
Daily, A. C., Springfield
Durnell, F. P., Springfield
Meyer, L. S., Springfield
Whiteside, Tom, Springfield

Boone County

Davis, G. G., Columbia
 Shepard, C. L., McBaine
 University of Missouri, Columbia
 Watson & Son, Columbia

Johnson County

Ferguson, J. L., Warrensburg
 Golliday, M. L., Holden

Lafayette County

Douthit, H. B., Odessa
 Rodekohr, E. J., Corder

Lawrence County

Bigelow, F. A., Aurora
 Coleman, Louis, Aurora
 Doggett, A., Marionville
 McClure, T. E., Aurora
 Phelps, W. F., Aurora

Marion County

Head, S. R., Hannibal
 Head & Gray, Palmyra

Moniteau County

Redmon & Son, Tipton

Montgomery County

Brown, R. L., Shamrock

Newton County

Camfield, A. R., Neosho
 Smith, P. R., Neosho

Pettis County

Pettis Co. H. F. Co. Members

Files, W. E., LaMonte
 Jager, G. J., Sedalia
 Luetjen, G. A., Smithton
 Monsees, D. O., Sedalia
 Monsees, W. C., Sedalia
 Romig, Wm., Dresden
 Selken, Ernest, Sedalia
 Woodward, F., LaMonte
 Bluhm, J. F., Smithton
 Lamm, Henry, Sedalia

Ralls County

LaFrance, J. T., Perry
 McCoy, C. S., Perry

St. Charles County

Finck, E. P., St. Charles

St. Louis County

Busch, R. A., Eureka
 Calla Lily Farm, Ballwin
 Driver, C. E., Crescent
 Standard Dairy, Ballwin
 Valley Park Farm, Valley Park

Webster County

Cologna, Peter & Sons, Marshfield

Wright County

Wiggins, Wm., Mountain Grove.

ARE YOU ON THE MAP?

