

PROVING THE DAIRY QUALITY OF THE JERSEY

It has been 115 years since The American Jersey Cattle Club initiated efforts to provide for authoritative and independent production testing. Positive proof of the Jersey's dairy quality was necessary, first, for breed expansion, but at the same time, production testing was the essential tool in guiding breed improvement.

The first butter test of a Jersey cow on record—made privately in 1853—was that of Flora 113. A butter test was the weight of butter churned from a cow's milk production during a specified period, usually seven days. Flora 113 was tested for 305 days, producing 511 lbs., 2 ozs. of butter.

Major Campbell Brown of Spring Hill, Tenn., initiated the first systematic collecting of test records. He accepted private test records from the cows' owners, which were not supported by impartial evidence. A listing of these butter tests were published by Brown in the *Country Gentleman* in February of 1882.

It was the request, also in 1882, of A. B. Darling for the AJCC to supervise a butter test of Bomba 10330 that led the Board of Directors to appoint a committee of one to oversee the testing procedures. Numerous requests for test authentication, notably from Tennessee, were made in 1883, leading the Board to allow any Club member to conduct butter tests and report the results to the association. Such tests were not labeled "official."

It required amendment of the By-Laws in 1884 to give the Board authority to conduct official butter tests. The owner of the cow to be tested was required to pay all expenses and to deposit \$50 with the application for the test. A supervised test of Princess 2d 8046, now infamous in the 1936 book *The Jersey* written by R. M. Gow, caused great speculation when it was reported that the cow had produced 46 lbs., 12½ oz. butter from 299 lbs., 8 oz. milk in seven days. As former Secretary Gow editorialized, "No sooner was official testing started than its object of demonstrating true production was thwarted by the desire to place a cow, and the herd in which she belonged, in the spotlight."

Official Tester Appointed

President John I. Holly of New Jersey suggested the formulation of some better plan of testing at the 1885 Annual Meeting, remarking, "It seems to be more desirable to know a cow's practical capacity under ordinary conditions than to depend upon her worth judged by a test made under extraordinary conditions."

That "better plan" was the appointment of a salaried Official Tester at \$10 per day, authorized by another amendment to the By-Laws in 1885.

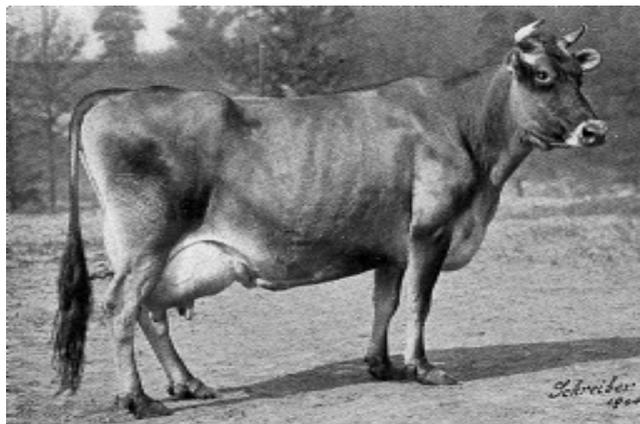
Major Henry E. Alvord was appointed the first Official Tester, but immediately ran into difficulties. Authentication of official tests required a chemical analysis of the butter produced, adding to the expense of making official tests. Alvord resigned in November of 1886, noting that he had only supervised five tests and calling official testing a "complete failure." The position was vacant for a time until the appointment of Walter J. G. Dean in 1887. On June 15, 1888, however, the Official Tester was abolished.

In the meantime, Major Brown and two

associates, Thomas H. Malone and William J. Webster, had been continuing to collect and public private butter tests. The magnitude of their project was such that the Club took over the work in 1887, accepting and publishing private tests, but not endorsing their reliability.

The original fee for recording a private test with the AJCC was \$3.00. In 1888, it was reduced to \$2.00. Only 197 tests were sent in for recording in the first volume of *Butter Tests of Registered Jersey Cows*, published in January, 1889. In 1890, private tests were ordered to be received and published free of charge. No yield of less than 14 pounds of butter in seven days was accepted for recording.

The 1891 Annual Meeting ordered ac-



LORETTA D. 141708

First in Classes A and B

Awarded diplomas as Champion Cow, and as First in best five cows of any breed, Classes A and B

Owned by Estate of W. S. LADD, Portland, Oreg. Bred by MOORE & GILBERT, Muncie, Ind.

OFFICIAL RECORD, 120 DAYS

Milk, 5802.7 lbs. Fat, 280.16 lbs. Estimated Butter, 330.03 lbs. Net Profit, Class A, \$50.52
Net Profit, Class B, \$67.75. Averages per Day: Milk, 48.36 lbs.; Estimated Butter, 2.75 lbs.

LORETTA D., 141708	Cicero's Chemical Test, 101067	Ida's Rhoer of St. L., 9th, 41010.....	Ida's Rhoer of St. L., 13656.....	Bachelor of St. Lambert, 4558
		Pride of Ingolds, 54548.....	Duke of Ingolds, 14274	Ida of St. Lambert, 24990
		Cleuro Tormentor, 20228.....	Tormentor, 3838	Gipsy's Pride 2d, 29365
		Chemical Test's Beaulieu, 90032.....	Lady Belle Cicero, 8013	Chemical Test, 26151
			Beats James, 66071	

ceptance of all private tests for periods of not less than seven days. Tests were soon submitted for any multiple of seven days, periods of 30 or 31 days (one month) and

upwards to 365 days. Owners could pick out any part of a lactation period that suited them and send it to the Club for publication. The private test plan was, according to Gow, “now rendered absurd, as it had been useless for founding reliable conclusions as to the production of cows by the fact that most records were for the period of seven days when the cows tested were at their maximum yield.”

Babcock Test Starts New Era

The development of the Babcock fat test in 1890 revolutionized milk testing. The fat content of milk could now be determined easily. In addition, the test was relatively inexpensive. The Board recommended acceptance of tests made by the Babcock process in 1895.

But, the members voted down the proposal at the Annual Meeting. The minutes note four major reasons for the issue’s defeat:

- The public would not understand such tests;
- They wanted to know how much *butter* a cow produced, not how much *oil* there was in the milk;
- The test required great skill to be accurate; and
- The making of tests by churning was just as accurate, better understood and applicable by every breeder.

Convinced that the Babcock fat test was essential to a reliable and inexpensive testing program, the directors submitted a proposal to the 1897 Annual Meeting seeking to approve butter tests “confirmed” by the Babcock test. The recommendation was adopted, but only because the tests were still churned butter tests.

The next step toward adoption of the Babcock test was in 1902, when minutes from the Annual Meeting note “that the Club looks with favor on making estimated butterfat tests by Babcock where it is impractical to make churn tests.” Private butter tests were still to be accepted by the Club. This enabled the directors to make rules for the acceptance and publication of “private Babcock fat estimates” and “authenticated Babcock fat estimates.”

Register of Merit Testing

In May of 1903, the Register of Merit was established. Breeders could select any registered cow from their herds and enroll them on the program.

The ROM testing system was a com-



The Register of Merit program paved the way for aggressive promotion of individual cows and herds. Attractive exhibits like these were also valuable advertising for the entire breed.

promise plan. Rules for the program were separate from other test rules until the acceptance of all tests other than “authenticated fat tests” was stopped.

All records of production admitting cows to the Register of Merit had to be authenticated by the application of the Babcock test by a representative of a state experiment station or, in the case of year’s tests, by a monthly check of two successive days. “Confirmed” tests (churn tests) had to be supported by Babcock tests of the milk and milk tests had to be supported by the supervisor’s weights. Initially cows were eligible to the Register of Merit on authenticated milk, butter or butterfat records for either seven days or for one year.

Then, from June 16 to October 13 of 1904, the AJCC funded (to the tune of nearly \$25,000) a dairy demonstration in competition with Holsteins, Brown Swiss and Shorthorns. The exhibit was staged at the Louisiana Purchase Exposition in St. Louis, Mo. The results convinced even die-hard opponents that the Babcock test was of value to the association’s production testing program.

The butterfat tests were made using the Babcock test and Jerseys led all breeds, producing the most milk, most butterfat and most solids-not-fat. Loretta D. 141708 (*see opposite page*) was the champion of the test. Gov. W. D. Hoard, founder of *Hoard’s Dairyman*, paid the following compliment to Jersey breeders, “We all owe The American Jersey Cattle Club a lasting debt of gratitude for its persistence in bringing about a dairy cow demonstration pure and simple—not one rendered uncertain and misleading by the intervention of creaming and churning.” In 1905, the Club was accepting and publishing seven different kinds of test records, made under different rules, for periods from

seven days to one year. It took years to eliminate these tests and to confine the tests accepted by the Club to the authenticated fat tests of the Register of Merit. When the first volume of the Register of Merit was published, 91 cows were listed. A year later, in 1907, there were 107 records reported, 80 of which were year-long lac-

tation reports.

On December 9, 1910, all ROM and testing rules were taken out of the By-Laws and placed under the control of the Board of Directors, so that needed rule changes would not cause frequent amendments to the By-Laws.

Private tests were not accepted after 1911. 1913 was the year that milk tests were stopped. Confirmed butter tests were eliminated on January 1, 1921, as were all short term (less than 305 days) tests.

By 1920, more than 5,500 cows were enrolled on Register of Merit testing. In 1921, two classes, 305-day and 365-day, were established for ROM testing. The entry fee was \$5.00 per cow. In 1926, tests were accepted made under a one-day monthly test with preliminary milking and also under the two days per month inspection, at the owner’s option.

Herd Testing Adopted in 1928

Extensive rules were eventually written to conform with the testing rules of the American Dairy Science Association. A system of classes and testing schemes made testing too complicated for the breeders wanting to acquire timely production data on the entire herd. Thus, the Herd Improvement Registry was adopted on July 1, 1928 to “obtain a record on an entire herd for the purpose of making definite herd improvement.”

All testing was conducted under the auspices of the association and the Extension Service. Herd testing could be carried on in conjunction with ROM testing. HIR records were based on the results of 12 official test periods of 24 hours each without a preliminary milking, or six such tests with a preliminary milking during the test year. All registered cows in a herd that had ever come into milk were included on the herd test.

HISTORICAL REVIEW

The Club then issued a certificate listing the production of each herd completing a year's record, showing the number of cows in the herd, the average milk production, average butterfat percentage and average butterfat production of the entire herd during the year. On request, owners could obtain a certificate of a single cow's production for 50-cents per certificate.

By the end of 1928, 25 herds with 500 cows were enrolled on HIR.

After the Purebred Dairy Cattle Association was founded in 1940, representatives of the member organizations started discussions that would eventually result in unified rules for HIR-ROM.

Testing programs verified by the AJCC and the other breed registry associations became closely tied with the Dairy Herd Improvement program during the 1950s. The Dairy Herd Improvement Registry (DHIR) was developed to accept the records processed electronically by the various DHIA testing associations. Supplemental rules

were adopted by PDCA and approved by the national DHI governing body for herds tested under the DHIR program.

After July 1, 1965, enrollment in the Register of Merit testing program was discontinued. DHIR entirely replaced ROM and HIR as the official production testing program of the Jersey breed.

Multiple Component Testing

Production testing has always been a function of economic considerations, a fact demonstrated again in the 1970s when multiple component pricing began to gain a foothold in the dairy industry. It was now important to test not only for butterfat content, but also protein levels in milk.

The history of protein testing is as tortuous and involved as much controversy as the Babcock test did at the turn of the 20th century.

The original method, however, was ingeniously simple. Certain chemical dyes were found to have an affinity for protein. Simply add dye to the milk sample, then measure how much was used, and the pro-

tein content could be calculated—precisely and inexpensively. Dye binding tests were widely available by the mid-1950s, with the first official version adopted in 1967 by the Association of Official Analytical Chemists.

Despite the fact that by the 1970s there were nine different methods for protein testing, a myth that protein testing was inaccurate, slow and expensive was perpetuated in the field. State testing centers, however, knew otherwise and continued to implement protein testing technology and producing protein records for herd owners.

Protein tests were made official by the



HIR spanned the Register of Merit program and DHIR, which continues to be the official production testing program of the American Jersey Cattle Association.

National Cooperative Dairy Herd Improvement Program (NCDHIP) Coordinating Group meeting in November of 1978. Protein tests were accepted for cows calving after December 1, 1978 and tested for the entire lactation. The AJCC began accumulating protein records beginning with the September, 1979 lactation update.

AJCC Production Awards

A host of production recognition programs have come and gone over the past 130 years. As early as May, 1911, medal awards were made in the Register of Merit classes. The Ton of Gold (production of 2,000 lbs. fat in four or fewer consecutive lactations), Double Ton of Gold and Triple Ton of Gold awards were established in the early 1940s, but discontinued in 1980 as Jersey production rose to levels making the awards obsolete.

In 1920, the Board of Directors created the President's Cup. The original rules awarded the trophy to the owner of the highest butterfat producer of the breed during the year. The Board has reviewed

the award several times since 1920. Since 1990, the trophy has been awarded to the cow with the highest record for m.e. pounds protein.

The Hall of Fame certificate was adopted in 1967 to recognize cows producing 20,000 lbs. milk and/or 1,000 lbs. fat in a single lactation of 365 days or less. (Prior to that time, lactations of 20,000 lbs. milk or 1,000 lbs. fat were recognized in the *Jersey Journal*, but were not specifically designated as Hall of Fame records.) The requirements were changed beginning with 1984 lactations. Recognition for protein production was added to the program and qualifying levels were adjusted based upon days in milk. For lactations of 305 days or less, the Hall of Fame was awarded for records of at least 20,000 lbs. milk or 1,000 lbs. fat or 800 lbs. protein, with a minimum of 800 lbs. fat. Extended lactations qualified with at least 22,500 lbs. milk or 1,125 lbs. fat or 900 lbs. protein, with a minimum of 900 lbs. fat. In 1989, 365-day records were no longer eligible for the Hall of Fame. By 1995, the requirement was simplified to 800 lbs. protein in a 305-day lactation.

The Board of Directors reviewed the requirements for the Hall of Fame at its November, 1998 meeting. Effective with 1999 lactations, Hall of Fame recognition will be based upon cheese yield. The qualifying level is 150% of the previous year's breed average for actual cheese yield, with Hall of Fame certificates awarded to cows with actual yields equal to or exceeding that level.

The Leading Living Lifetime Production Contest was adopted in 1940. Today, Jersey cows are eligible for the contest if they are living as of December 31 of the contest year have produced a minimum of 150,000 lbs. milk or 7,500 lbs. fat or 5,000 lbs. protein.

The National Milk and Fat Champion has been recognized since 1928 when Abigail of Hillside was crowned with a record of 8-6 365 23,677 5.0% 1,198 3x. With the addition of protein testing, a National Protein Champion is also recognized. In 1999, three different cows hold these titles. Queen-Acres Boomer Celeste is the National Milk Champion (38,030 lbs.), Barbs MBSB Dayetta is the National Protein Champion (1,451 lbs.), and BW Champs Lou W546 is the National Fat Champion (1,990 lbs.).