GOAT DHIA LAB TRAINING

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Introduction

Langston Goat DHIA (Dairy Herd Improvement Association) Workshops are open to all interested parties. We have trained producers and any potential testers invited by the producer. The course covers National DHIA and ADGA rules, how to fill out the paperwork, the costs involved in testing, and a short quiz to certify the testers.

Information presented on the following pages is from the DHIA website.

Uniform Data Collection Procedures

PURPOSE: The purpose of these procedures is to provide the framework for a uniform, accurate record system which will increase dairy farmers' net profit.

These basic and minimum standards are to be uniformly followed throughout the service area of National DHIA. They serve to ensure that National Dairy Herd Improvement Association (National DHIA) records will provide the accuracy, uniformity, and integrity essential to all segments of the dairy industry. All DHIA Service Affiliates, field services, laboratories, dairy records processing centers (DRPCs) and meter centers will be evaluated annually under the National DHIA Quality Certification Program to maintain and verify compliance with these standards. To be eligible to participate in this dairy record keeping program, a dairy farmer must be a member of a DHIA Service Affiliate. Special conditions affecting member eligibility and participation by others will be the responsibility of the DHIA Service Affiliate.

The uniform records and data thus provided are used for (1) making farm management decisions; (2) educational programs and research, including the genetic evaluation of cows and sires; and (3) the promotion and sale of animals. DHIA organizations at all levels and DHIA technicians and herd owners as well as persons in their employ, are individually and collectively responsible for the adherence to the procedures set forth.
AUTHORITY: These uniform data collection procedures have been developed and adopted under the direction of National DHIA. A Memorandum of Understanding with National DHIA, Agricultural Research Service of the United States Department of Agriculture (USDA), National Association of Animal Breeders (NAAB) and the Purebred Dairy Cattle Association (PDCA) exists to ensure the flow of DHIA records for industry purposes, including genetic evaluation programs.

RESPONSIBILITY: DHIA Service Affiliates are responsible to uphold the uniform data collection procedures and standards defined by National DHIA.

DHIA producer-members sign an agreement to conform with these procedures and the associated Code of Ethics. A breach of the Code of Ethics may result in independent legal action by the injured party.

DEFINITIONS:
DAIRY COW is defined as any cow from which milk production is intended for use or sale for human consumption, or which is kept for raising replacement dairy heifers, and is an integral part of the dairy herd.

DAIRY HERD is defined according to the following principles that are generally appropriate for herds enrolled in National DHIA record plans:

1. All cows of one breed, housed or managed under a single management system, regardless of ownership;

2. On farms with two or more distinct breeds, either a composite herd average or separate herd averages may be calculated and reported.

In general, herd codes should be assigned in accord with the principles stated above. However, it is recognized that legitimate exceptions may exist from time to time which might warrant the assignment of separate herd codes. For example:

1. A single member may operate separate units under separate management systems, with no movement of cows between management units.

2. Two groups of cows may be housed as a single entity, but under different ownership with different management goals, and with no movement of cows from one ownership group to the other; one owner may wish to test and the other owner may not.

3. On farms with two or more distinct breeds, it is acceptable to enroll one breed on test and not the other(s).

Application for herd codes that differ from the principles in A and B will be evaluated by the DHIA Service Affiliate which should encourage participation in the DHIA System for the mutual benefit of the
dairy farmer and allied industry. The decision of the DHIA Service Affiliate regarding the assignment of separate herd codes shall be final.

TEST is defined within the long tradition of DHIA to be the entire process of information collection at the farm. This may include some or all of the following: weighing and sampling and/or analyzing of milk during the milking process, weighing of milk only, or electronic collection of milk weights with periodic component analysis sampling. Since the actual component testing does not generally occur at the farm, this procedure should be labeled as the laboratory test or component test.

DHIA TECHNICIAN/SUPERVISOR These equivalent terms define the person approved by the DHIA Service Affiliate to certify the production information collected at the farm.

DHIA SERVICE AFFILIATE is defined as the organization authorized by National DHIA, through Quality Certification and appropriate memoranda, to conduct DHI service. Responsibilities assigned to the DHIA Service Affiliate board of directors by these procedures may be carried out by their designated representative.

DAIRY RECORDS PROCESSING CENTER (DRPC) is defined as the organization approved by National DHIA which contracts with, or is owned by, a DHIA Affiliate for the purpose of electronically processing DHIA records. A DRPC must comply with approved procedures and rules for records calculations. A Dairy Management System (DMS) shall be considered as a DRPC for the purpose of these procedures.

LABORATORY is defined as the facility approved by National DHIA, through Quality Certification, to analyze DHIA component samples.

METER CENTER is defined as the facility approved by National DHIA, through Quality Certification, to calibrate approved weighing devices.

DATA COLLECTION PROCEDURES:

1. Collection of Milk Weights and Samples

The yield of individual cows is to be measured at the time of milking with a minimum of interference to the normal routine. Provision must also be made for collecting a sample which is representative of the milk yield of the cow at any one milking. All weighing and sampling devices must at all times be used strictly according to the manufacturer's written instructions.

A. Supervised Tests: The DHIA technician is expected to collect data as accurately as possible. All production data and animal identification will be collected in the presence of the DHIA technician. Facilities or milking processes which do not permit a single DHIA technician to handle such observation will require the addition of other DHIA technicians as necessary.
The technician should secure samples by following approved procedures outlined in the National DHIA Quality Certification Manual.

Test day data may be electronically transferred to the DRPC by the DHIA technician who has prior authorization from the DHIA Affiliate. A secure procedure will be used during the transfer of data which certifies that all uniform procedures have been followed.

B. Unsupervised Tests: The DHIA member will assume the responsibility for accurate data collection in accordance with these uniform procedures.

2. Standard Equipment and Methods

A. DHIA Service Affiliates: All equipment, owned, leased or used by DHIA Service Affiliates, and not owned by a DHIA producer-member, will be checked annually by a DHIA QC-approved meter center or a qualified manufacturers representative, using procedures specified in "The Periodic Inspection, Repair, and Recalibration of Devices Used in DHI Testing." A durable label shall be affixed to each device stating the date of certification and the DHIA Affiliate responsible. Any equipment out of tolerance must be removed from DHIA service and repaired before further use. The DHIA Service Affiliate (or member in unsupervised plans) will report the calibration status of the metering devices. This status will accompany the DHIA record used by USDA-AIPL for genetic evaluations.

B. Producer-Owned Equipment: To ensure the highest quality data, it is strongly recommended that DHIA producers owning their own equipment follow the same guidelines as DHIA Service Affiliates. These guidelines must be followed for records to be coded as using QC-certified weighing devices. In the event a producer-member chooses not to follow the guidelines outlined for certified meters (See 2.A.), the DHIA Service Affiliate may provide service, and the records are to be coded as using uncertified meters. The DHIA Service Affiliate (or member in unsupervised plans) is responsible for ensuring proper coding.

C. The tolerances allowed for the approval of the design of milk weighing, measuring, and sampling devices used in DHI testing plans are outlined in National DHIA procedures. These devices shall be conspicuously labeled as approved for use in DHIA. Instructions for operation and any limitations of such equipment as approved shall accompany each device. A current list of approved devices is available from National DHIA.

Milk fat, protein, and other component determinations are made using National DHIA-approved procedures and equipment. Solids-not-fat (SNF) may be determined directly or through calculation based on individual components determined by approved procedures.

3. Recording Programs

DHIA offers numerous recording programs. Four commonly found programs are described:
A. DHI-Conventional-Supervised: The DHIA technician weighs and samples the milk from each milking for all cows in the herd during a single 24-hour period. The beginning and ending times for each milking shall be recorded.

B. DHI-AP-Supervised: The DHIA technician weighs and samples alternately at AM and PM milkings. For herds milked two times during a single 24-hour period, weigh and sample alternately for two consecutive test periods. For herds milked three times during a single 24-hour period, rotate the two consecutive milkings weighed and the one sampled across consecutive test periods. A/P factors must conform to National DHIA tolerances.

For these types of data collection protocols, at least one part of the milking system may or may not be equipped with a DHIA-approved milking interval recorder which provides an authentic record of the milking intervals. On test day, the DHIA technician will determine and record the reference time at the beginning and ending of the sampled milking and the previous milking. To be acceptable for this purpose, an approved monitoring device must display or print the starting and ending times of the sampled milking and the previous milking. Monitored times are to be within 15 minutes of actual times. At the end of the sampled milking, the starting and ending times of the sampled milking and of the previous milking shall be recorded for the DRPC to use in determining the milking interval. In cases where strings or groups of cows are milked in a different order at the PM milking as compared to the AM milking, a herd may be enrolled on one of the APT or APCS plans only if the monitoring device can record milking times by string, and the DRPC can process strings or groups with different milking intervals. The same policy also applies to herds milked in strings or groups with breaks longer than 15 minutes between strings.

C. DHI-APCS-Supervised: The DHIA technician weighs the milk from each milking during a single 24-hour period. Collect samples for component testing at ONLY one milking.

For herds milked two times in a single 24-hour period, alternate the sampled milking between AM and PM milkings for consecutive test periods. For herds milked three times in a single 24-hour period, rotate the sampled milking among all three milkings. Beginning and ending times of all milkings will be recorded to determine the milking interval for computing component credits.

D. DHI-MO and DHI-MO-AP-Supervised: The technician weighs the milk ONLY from each milking or selected milkings during a single 24-hour period. NO samples are collected for component testing. A/P factors must conform to National DHIA tolerances.

E. Other Recording Programs are available through DHIA Affiliates. The off-farm use of data from these programs will be determined by the users of the records.

4. Test Interval

The test interval (number of days from the previous test day through the current test day) is divided into two equal portions. Production credits for the first half of the test interval are calculated from the
previous test day information. The totals for the two portions of the test interval are added to obtain the interval totals.

Production totals from the first day of the lactation until the first test day are based on the first test day information; and production totals for the interval from the last test day until the record is terminated are based on the last test day information. In either case, an approved regression factor shall be used to accurately reflect actual milk production and current test day. The next test interval begins on the following day. DRPCs are permitted to adjust credits for the test interval based upon average lactation curve effects, provided such adjustments more nearly reflect daily production and have been approved by National DHIA.

5. Cows to be Tested

A. All dairy cows in the herd with the same herd code, which have ever calved, will be enrolled on a DHI record plan. Dairy cows may be removed from a DHI record plan only when they leave the herd permanently. Dairy cows used as embryo recipients are to be included.

B. Cows classified as Dry Donor Dams, may be permanently assigned to a separate Dry Donor string in the herd or to a separate Dry Donor herd. No data on the Dry Donor Dam will be included in herd average or management information. These cows must be verified dry each test day by the DHIA technician. A certificate which identifies the cow and is signed by both the herd owner and the person performing the embryo transfer work must be filed with the DHIA Affiliate. Dry Donor Dams which later calve will be returned to the milking herd, and a 365-day dry period with 0 production data applied against the herd average in the current test interval.

6. Identification

A. All cows must be identified with a permanent number for genetic evaluation. Permanent identification consists of a national uniform series eartag, VIP certificate, grade identification, or registration certificate. If the eartag is not in the ear, the number must be cross-referenced to a picture, sketch or a brand or tattoo that is unique to that herd.

B. For a supervised test, the DHIA technician must be able to visibly identify the cow quickly and accurately during the milking process, or a cow must be identified electronically by an electronic identification system. All visible identification must be in place on the cow prior to the beginning of the milking, and be visible from several feet. Visible identification must be cross-referenced to permanent identification if the data are to be used in genetic evaluations.

C. For all DHIA records (both supervised and unsupervised collection) changes in identification after the second test following the cow's entry into the herd will result in the cow's records being permanently labeled on the records transmitted throughout DHIA and on all publications of the records. Changes in identification refers to one or any combination of the following data fields: cow ID number, cow birth date, sire ID, (consistent with reference notes for USDA-ARS-AIPL formats).
7. Bulk Tank Measurements

Bulk tank pick-up weights shall be recorded (data for three shipments immediately prior to date of test) indicating the number of milkings (or days) included in each shipment. If bulk tank weights are not available, the fact that they cannot be obtained, and the reasons why, should be reported in writing to the DHIA Affiliate.

Bulk tank pick-up weights for appropriate days may be used as verification of the accuracy of production credits of the herd.

8. Fresh Cows -- Dry Cows -- Cows Leaving the Herd

A cow fresh six or more days will have her milk weighed (and if applicable) sampled beginning the evening milking of the sixth day after calving (morning of the seventh day for AP records), counting the day of calving as the first day. The record begins on the calving date. The dry date is the first calendar day the cow is not milked. Cows turned dry on test day will have their production credits projected forward from the previous test day, using the previous test day production data and approved National DHIA estimation procedures. The calendar day the cow leaves the herd counts as the last day in the herd, with production being credited for that day. Any lactating cow purchased will start receiving production credits in the new herd, one calendar day following the last day of credits.

9. Sickness or Injury

In case of severe sickness, injury or a cow in heat on test day, production will be considered abnormal. If such conditions are reported on the barn sheets at the time of milking, and the percentage decrease in total daily pounds of milk from the previous test day (from the succeeding test day if the first test day of lactation is involved) exceeds the percentage obtained with the following formula: Percentage = 27.4 plus 0.4 x days in the first test interval. As an example, for a 28-day test interval: Percentage = 27.4 + (0.4 x 28) = 27.4 + 11.2 = 38.6%, the milk weight will be considered abnormal and computations will be done only by the DRPC. Actual test day data will be reported even though the milk weights are coded abnormal. This does not apply to milk weights routinely adjusted at the beginning or end of lactation.

10. Cows Aborting, Calving Prematurely, Calving Without Going Dry, Prepartum Milking

When a breeding date is available, and a cow freshens less than 30 days prior to the expected calving date, it will be considered a normal calving. Cows freshening 30 or more days prior to the expected calving date, whether in milk or dry, will be coded as abnormal.

If a cow aborts while in milk and has carried a calf less than 152 days, her current record will continue without interruption. If a breeding date is not available, and the cow aborts while in milk for less than 200 days, her current record will continue without interruption. Except for the specific situations above, the current record will end and a new lactation will begin.
If a cow calves without a dry period, the record will end on the day immediately preceding the calving, and the new lactation will begin on the day of calving.

Prepartum milk will not be counted as part of the lactation, and it will not be included in the lifetime production record.

11. Cows Milked More Than Twice Per Day

Herd or cows normally milked more than twice per day will follow the same milking routine on test day.

Lactation records obtained by milking cows more than twice per day for all or part of the lactation will be labeled according to National DHIA procedures.

Herd averages, where some or all of the cows are milked more than two times a day, will be so labeled. The number of times the herd is milked daily will be rounded to the nearest whole number. (See 13.I.)

12. Missing Milk Weights and/or Samples

When complete milk weights or samples are not obtained or are lost, the missing data will be estimated or the test period spanned by the DRPC, using procedures outlined below. All estimated or missing data will be appropriately labeled. Only actual data will be sent for use in genetic evaluations. Reasons for lost or missed milk weights and/or samples will be recorded by the DHIA technician. All adjustments to production credits will be made by the DRPC with routine programming. Exceptional cases should be referred to the DHIA Affiliate.

(A) First Test Day Weights or Samples Missed

(1) Missing milk weights and component percentages shall be calculated in the succeeding test interval by appropriate factors and procedures approved by National DHIA.

(2) If the milk sample cannot be tested, the percentage of each component for the succeeding test day will be used.

(B) Cows Missed For One or More Intervals During the Lactation After the First Interval

(1) Missing milk weights and component percentages shall be calculated based on the previous milk weights and component percentages using appropriate factors approved by National DHIA.

(2) The milk weights and component percentages may be held open and later computed as described in the Test Interval Method.
(3) If the sample cannot be tested, component data will be estimated according to National DHIA procedures.

(4) For herds weighed more than once daily and one milk weight is missed, AM/PM factors may be applied to the remaining weight(s) and component analysis to calculate test day yield. This yield shall be considered an actual yield.

(C) New Cows Entering The Herd:

(1) A cow purchased in milk with transfer credits will have credits computed through the sale date in the seller's herd. Her credits will start the next day in the purchaser's herd, using test-day data from the succeeding test. The Test Interval Method is required in making these computations. Dry cows will accumulate days on test in the seller's herd through the sale date, and will start on test in the purchaser's herd the next day.

(2) A cow purchased in milk with unavailable previous credits may have her record computed back to the calving date for management purposes. If the cow has no known calving date as of the first test date, the cow will receive credits for the current test interval only. The DRPC may extend the record back to the fresh date for management purposes only. Only actual data will be used in genetic evaluations.

13. Standard Calculations

1. Days carried calf = current sample date - effective breeding date + 1

2. Days open = effective breeding date - previous fresh date

3. Gestation days = resulting fresh date - effective breeding date

4. Days dry = next fresh date - dry date

5. Calving interval = next fresh date - current fresh date

6. Days in milk = dry date - previous fresh date, or left herd date-previous fresh date +1, or current test date - previous fresh date +1.

7. Assumptions:
   • The day of freshening is an open day, a day in milk, and not a dry day;
   • The day of breeding is a day carried calf.

8. Calculation of Ages of Cows (Truncation Method) From the year, month, and day of the fresh date, subtract the year, month, and day of birth date. If the days are positive, discard. If the days are negative, add -1 to months. Then, if months are positive, use years and months as age of the cow. If
months are negative, add 12 months, and add -1 to years. Use the resulting years and months as the age of the cow.

9. Adjusting Records to 24 Hours. When herds are normally milked on intervals such that the test day is other than 24 hours, the milk weight shall be adjusted to a 24-hour interval using the following procedure approved by National DHIA:

Divide 24 by the interval, then multiply by the milk weights.
As an example:
(1) For a 25-hour interval, \(\frac{24}{25} \times 65 \text{ lbs} = 62.4 \text{ lbs}\).
(2) For a 20-hour interval, \(\frac{24}{20} \times 65 \text{ lbs} = 78 \text{ lbs}\).

14. Verification Testing

DHIA Service Affiliates will conduct verification tests to verify the performance of cows and herds at the request of a member or allied industry representative.

DHIA verification tests requested by a member will include the entire herd. Acceptable verification procedures are as follows:

! A different DHIA technician conducts a duplicate test immediately following the regular test.

! A different DHIA technician tests the herd for one milking, in addition to the regular milking schedule.

! A different DHIA technician tests the herd using the regular milking schedule (i.e. no additional milkings).

Herd Profiles will also be used to verify test results on a routine basis. Such information may be used to call verification tests as deemed appropriate by the DHIA Affiliate.

All verification test results will be used in computing credits except under extraordinary circumstances, in which case the DHIA Service Affiliate will determine which test(s) will be used.

15. Retesting -- Member's Request

If a member is not satisfied with the regular testing of the herd, a retest may be requested. Such a request will be made within 15 days of the original test day and be directed to the DHIA Affiliate. The member will pay the cost of the retest, unless otherwise determined by the DHIA Affiliate.

Retest results will be used in place of the test day data for which dissatisfaction has been registered when an obvious discrepancy exists. Both tests may be used if no discrepancy exists in the judgment of the DHIA Service Affiliate.
16. Production Reports

DHI lactation records of 305 days or less will be computed as required by National DHIA policies.

All DHI records used in genetic evaluations must be processed at a National DHIA-approved DRPC. Electronic herd summary reports and cow lactation records will carry Record Standards variables to describe the conditions under which the records were collected.

17. Yearly Averages

Herd and Affiliate yearly averages will be computed on a cow-year basis. These will be summarized and transmitted as required by National DHIA policies. A herd must have DHIA credits for 365 days before a DHIA herd average is published.

PROCEDURES THAT APPLY TO DAIRY GOATS ONLY

All the rules of the American Dairy Goat Association (ADGA) and all of these National DHIA rules apply to dairy goat testing, except as agreed by ADGA and National DHIA.

Refers to Procedure 1A
Dairy goat producers may use the Group Testing Program as described in dairy goat association guidelines and the NCDHIP Handbook.

Refers to Procedure 10
When a breeding date is available, and a doe freshens less than 10 days prior to the expected kidding date, it will be considered a normal kidding and the record initiated will be used for buck and doe evaluations. Does freshening 10 days or more prior to the expected kidding date, whether in milk or dry, will be coded as abnormal and the record initiated will not be used for buck and doe evaluations.

If a doe aborts while in milk and has carried a kid less than 80 days, her current record will continue without interruption. If a breeding date is not available, and the doe aborts while in milk for less than 240 days, her current record shall continue without interruption. Except for specific situations stated above, the current record shall end and a new lactation begin.

Refers to Procedure 14
For DHIR verification tests, when an individual doe is in milk at least 60 days, and a 305-day record is predicted on an actual basis to be 3,000 pounds of milk and 105 pounds of butterfat, or on a mature equivalent basis of 3,500 pounds of milk and 125 pounds of butterfat, and when on a 120-day basis, the mature equivalent is predicted to be 4,000 pounds of milk and 140 pounds of butterfat, a verification test is to be called by the DHIA Affiliate.
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