DHI-202 Herd Summary
July, 2009

1. Herd Test Identification

2. Production, Income and Feed Cost Summary
   2a. Daily Average Per Cow on Test Day
   2b. Rolling Yearly Herd Averages

3. Miscellaneous Herd Information

4. Reproductive Summary
   4a. Reproductive Summary of Current Breeding Herd
   4b. Reproductive Summary of Total Herd
   4c. Yearly Reproductive Summary

5. Birth Summary

6. Cows to be Milking, Dry, Calving by Month

7. Stage of Lactation Profile

8. Identification and Genetic Summary
   8a. Identification Summary
   8b. Genetic Summary

9. Production by Lactation Summary

10. Current Somatic Cell Count Summary

11. Dry Cow Profile

12. Yearly Summary of Cows Entered and Left the Herd

13. Yearly Production and Mastitis Summary

Appendix Table 1: Description of DHI Record Plans
Appendix Table 2: Average Nutritional Values
DRMS Affiliate Contact List

Dairy Records Management Systems
1. Herd Test Identification

Herd Code and Type of Record. The first two digits identify the state where the herd is located, the third and fourth digits identify the county within the state and the fifth through eighth digits identify the herd within the county. The herd number is unique for each herd. The descriptive name is given for the record plan on which the herd is enrolled. Table 1 in the appendix provides a summary of record plans.

Scheduling Day is the day the herd was scheduled to be tested. This date is listed if previous arrangements are established for testing days.

Date Tested is the date of the current test. The date tested is the date of the last milkings of the test. If a herd is tested at the PM and AM milkings, the date of the AM milking is used.

Name and Address for the herd. Reports are mailed to this address. It must be accurate and complete to ensure prompt return of the reports.

2. Production, Income, and Feed Cost Summary

Summary summarizes production, feed intake, feed cost, and income over feed cost for the current test day.

2a. DAILY Average Per Cow on Test Day

Total Cows are all cows, milking and dry, in the herd on test day. Cows sold during the current test period (day after previous test date through current test date) are not counted.

Cows in Milk includes all cows in milking status on test day. Percent is calculated by dividing cows in milk by total cows and multiplying by 100. For example: (84 cows in milk divided by 122 total cows) x 100 = 69%.

Milk Lbs. (All Cows) is the average milk production for all cows (milking and dry) in the herd. Test day averages are calculated by dividing the sum of test day milk weights (printed for each cow on the DHI-200, 210, 211 or 220) by the total number of cows in the herd on test day.

Fat Lbs. (All Cows) is the average fat production of all cows (milking and dry) in the herd. Test day fat production for each cow is computed from the test day milk weight and fat percent printed on the monthly report. Calculation of average fat production is the same as for average test day milk production.
**Fat Percent** is the average fat percent for the herd. Total pounds of fat produced by the herd is divided by the total milk production (lb) of the herd to calculate this percentage.

**Protein Lbs. (All Cows)** is the average pounds of protein produced by the herd (all cows). It is calculated the same as average test day fat production.

**Protein Percent** is the average protein percent for the herd. The method for calculating protein percent is the same as for fat percent.

**Milk Lbs. (Milking Cows)** is the average production for each milking cow on test day. To obtain the average, the sum of the herd's milk weights on test day is divided by the number of cows with milk weights.

**DAILY Average Feed Reported**

Reporting feed data is optional. If it is reported, care should be taken to use accurate values. Feed intake and cost information are printed both for milking cows and for all cows.

**Silage** is the average pounds of this forage reported consumed. Total reported consumption by all feed programs of cows in milk is divided by the number of cows in milk to obtain the average pounds consumed by milking cows. Reported consumption by cows in all feed programs is totaled and divided by the total cows to obtain average silage intake for all cows on test day.

**Other Succulents or Blended Rations** include all other high moisture content, high fiber feeds or blended rations consisting of all or most of the feeds fed to the herd. Examples of succulents are green chop, haylage, wet brewers grain, and root crops. Blended rations may be total mixed rations (TMR) or other mixtures of forages and concentrates. Averages are calculated by the same method as for silage.

**Dry Forage** refers to hay and other high fiber dry forages fed to the herd. Test day averages are computed by the same method as for silage.

**Other Feeds** may include all other feeds fed on a group or herd basis. These may include beet pulp, citrus pulp, crushed ear corn, high moisture corn, cottonseed, cottonseed hulls, etc. Blended rations also may be reported in this category. The calculation of test day average is by the same method as for silage.

**Pasture** indicates whether milking cows have been on pasture this past test period. If just dry cows are on pasture, a “NO” will print under Milking Cows and a “YES” will print under All Cows.

**Concentrates** include high energy, low fiber feeds fed individually or on a group basis. Test day averages for Milking Cows and All Cows are computed by the same method as for silage. Feeds reported as “Group Fed Concentrate or Other Feed” which are over 50% TDN or cost over $100 per ton are summarized as **Concentrates** on the DHI-202.

**NOTE:** For herds with more than one breed, individual cow forage intake and feed costs are adjusted by the herd average body weight for each breed. For herds on the permanent string option, string average feed data and feed costs are adjusted by the breed average body weight of the entire herd.
**DAILY Average Income and Feed Costs**

*Value of Product $* is a dollar ($) value for the average daily lbs. milk produced. Total daily value for milk produced divided by the number of milking cows yields the Value of Product for Milking Cows. Total daily value for milk produced divided by the total number of cows in the herd (milking and dry) yields the Value of Product for All Cows. Milk price data reported each test day is used in the calculation including price/cwt and fat/protein differentials for milk sold during the month preceding test day. Actual values for all milk sold should be reported.

*Cost of Concentrates $* is the average cost per cow based on amounts of concentrate fed and reported cost/ton. Costs per cow are summed for the entire herd and divided by the total cows in the herd (milking and dry) to obtain cost of concentrates for all cows. Costs per cow are summed for the entire herd and divided by the number of cows in milk to obtain cost of concentrates for milk cows.

*Total Feed Cost $* is the sum of the cost of concentrates plus all other feeds per cow. Averages are calculated by the same method as for cost of concentrates.

*Income Over Feed Cost $* is the difference between Value of Product $ and Total Feed Cost $.

*Feed Cost Per Cwt. Milk $* is the value of all feeds fed to produce 100 pounds (cwt) of milk. The daily average feed cost per cwt milk for milking cows is calculated by dividing Total Feed Cost of cows in milk by the average number of cwt's of milk produced by cows in milk. Total Feed Costs for All Cows is divided by the average number of cwt's of milk produced by all cows (milking and dry cows) on test day to obtain Feed Cost Per Cwt. Milk for All Cows.

Feed Cost Per Cwt. Milk tends to be lower in high producing herds. Although larger Total Feed Costs per cow will be associated with higher producing herds, a smaller proportion of total feed intake will be associated with nonproduction (i.e., maintenance). The added income from increased production generally more than offsets the increase in total feed cost per cow.

Comparisons of Feed Cost Per Cwt. Milk values can be made on a within herd basis. Monthly trends can be monitored in addition to comparing cost with the same period last year.

*Milk Blend Price* for test day is the reported milk price and fat and protein tests. This generally represents the price received for milk marketed in the month preceding the date of test since the farm receives this information after the end of the month. The differential adjustment for fat and protein (if applicable) is included in the blend price.

**2b. ROLLING YEARLY Herd Averages** are computed for all items in the Production, Income and Feed Cost summary except Milk Lbs. (Milking Cows). New herds receive this information after 365 days on test. A description of each item appears in section 2a. A general explanation of the calculation of Rolling Herd Averages (RHA) for milk production follows. This calculation will apply to RHA for other production items, feed intake, feed costs and income values unless otherwise indicated.

To effectively explain the RHA calculation, test interval production and total cow-days per test interval must be defined. The test interval begins the day after the previous test date and ends on the current test date. *Days in Test Period* for each test interval in the past year are listed in the Yearly Production and Mastitis Summary section of the DHI-202.

Total production during each test interval for each cow is calculated using her production on the previous test day and the current test day. Production on the previous test day is the cow’s daily production for the first half of the test interval. Production on the current test day is used as the daily production for the last half of the test period. As an example, suppose the test interval is 30 days and a cow produced 70 lb. on the previous test day and 60 lb. this test day. Her test interval production is (15 days x 70 lb.) + (15 days x 60 lb.) = 1,950 lb. Additional adjustments are made to the first, second and last test intervals of a cow’s lactation to adjust for nonlinear sections of the normal lactation curve.
The number of cow-days in a test interval is the accumulation of the number of days that each cow was in the herd during the test interval. Suppose there was a 30-day test interval with 100 cows (milking and dry) in the herd on the current test day. No cows entered or left the herd during the test interval. Total cow-days for the interval were 30 days x 100 cows = 3,000 cow-days. As another example, assume that 99 cows were in the herd on test day. One cow left the herd 5 days into the test interval and one cow entered the herd 15 days before the current test day. The test interval was 32 days. Total cow-days for the test interval were (98 cows x 32 days) + (1 cow x 5 days) + (1 cow x 15 days) = 3,165 cow-days.

To calculate RHA, total yearly milk production for the herd and total cow-days for the year are needed. These are accumulated by test intervals to obtain a production year of 365 days. For the oldest test interval which spans the 365 day period, the portion is used which accumulates exactly 365 days of production. For example, if the old test interval was 30 days and the addition of this interval made a total of 370 days, production for 25 days of this period would be added to the yearly total. For a new herd, RHA will be calculated after the herd has been enrolled in the DHI program for 365 days. When the total yearly production and total cow-days for the year are obtained, total yearly production is divided by total yearly cow-days to yield the average daily production for all cows during the past production year. This average daily production is multiplied by 365 to get the RHA.

No adjustments are made for age, stage of lactation, number of dry cows, or length of the dry period. Consequently, extended records and long dry periods will reduce RHA for milk production.

Current Daily Average per Cow on Test Day values compared to averages for the test period dropped (same month of the previous year) may or may not give an indication of the change in RHA from one month to the next. Average production of all cows during the entire test interval is the information used in calculating RHA, not average test day production only. Consequently, when a large number of cows are dry for most of the test interval but calve in time to be tested, an increase in average daily production per cow on test day may be a misleading indicator of the RHA change. The Test Period Production Added and Dropped is printed with the Yearly Production and Mastitis Summary. This information should be used to evaluate changes in RHA.

ROLLING YEARLY Average Production

Total Cows is calculated as total cow days for the “production year” (total of consecutive test intervals comprising approximately 365 days) divided by the sum of all days in the test intervals included in the “production year”.

Fat Percent on a yearly basis is calculated as (RHA fat divided by RHA milk) x 100.

Example: \( \frac{804}{20946} \times 100 = 3.8\% \)

Protein Percent on a yearly basis is calculated as (RHA protein divided by RHA milk) x 100

Example: \( \frac{659}{20946} \times 100 = 3.1\% \)
ROLLING YEARLY Average Feed Reported

The yearly summary of feed consumed by the herd can be used to plan feed requirements for the next year. It also allows you to compare feed intake for the current year with previous years.

Total Digestible Nutrients (TDN) is the measure used to report the energy value for each feed. %ENE (energy) on an annual basis is the amount of energy derived from each individual feed class (i.e. silage, dry forage, etc.) as a percentage of the total energy contained in all feeds fed to the entire herd. TDN information is required only for herds where Lbs. Indicated data is requested on the DHI-200. TDN values should be obtained from forage analyses or estimated using standard values for the feed based upon visual quality estimates. Tables for average nutritional values of many forages and concentrates fed are included in Appendix Table 2.

Pasture as a rolling yearly herd average is the total number of days in all test intervals during the year when feed reported on test day included a pasture quality code. The entire herd, a part of the herd or only dry cows may include pasture. Calculation of the % ENE (energy) from pasture on an annual basis is based upon the total herd energy intake, not just cows that had access to pasture.

ROLLING YEARLY Herd Average Income and Feed Cost

Yearly averages for Value Of Product $, Cost Of Concentrates $ and Total Feed Cost $ are calculated by the test interval method using procedures described for the Rolling Herd Average (see item 2b).

Income Over Feed Cost $ is the difference between the rolling yearly herd averages for Value of Product and Total Feed Cost.

Feed Cost Per Cwt Milk $ is calculated by dividing Total Feed Cost by the rolling yearly herd average for milk (all cows) expressed as cwts. [Example: $1070/209.46 cwt= $5.10 feed cost/cwt.]

Milk Blend Price $ for the year is calculated by weighting each reported test period milk blend price by the test period total milk. Yearly plant % fat and % protein are weighted by multiplying each test period total milk by the corresponding reported plant fat or protein test.

3. Miscellaneous Herd Information

Milk Shipped and Test Day Comparison compares the test day results to the previous milk shipped information.

Sum of Test Day Wts. (lbs.) is the total pounds of milk reported for all cows on test day. If a cow’s production is indicated “abnormal” (CAR code “A” reported) and the record is adjusted by the computer, the actual weight is included in this total. Estimated production (CAR code “E” is reported) for cows that were not milked or milk was discarded (mastitis treatment or other reason) is not included in this total. Cows “Too Fresh” to test are included if milk weights are reported.

Reported Av. Daily Bulk Tank Wts. (lbs.) is the calculated daily production for the herd based on the most recent three milk shipments reported.

The % Deviation compares the % difference between Sum of Test Day Wts. and Average Bulk Tank Weights. The denominator is the milk shipped. [Example: (4705 - 4650)/4650 x 100 = 1.2%]. This difference can be used to monitor the accuracy of meters, weigh jars and bulk tank measurements. Milk fed to calves, used in the home, discarded due to mastitis or not shipped for any other reason should be considered in this comparison. A % Deviation below 5% is desirable.

Test Day averages for Sum of Test Day Wts., Reported Average Daily Bulk Tank Wts. and % Deviation are weighted by test interval length to obtain the corresponding yearly averages.
Turnaround Times:

Samples Recv at Lab can be compared with Date Tested to determine sample shipping time.

DRPC Mailed is the date processed reports were mailed or downloaded.

Milking Times indicate starting times of milkings and if they were AM or PM. Milkings that were weighed and sampled are indicated by a Y (Yes) or N (No) in the WGH and SPL blocks. For herds on alternate AM-PM testing plans, the starting time of the milking prior to the milking being weighed is listed. For herds on an APCS (AM-PM Component Sampling) testing plan, the SPL (sampling) box will indicate which milking was sampled.

Remarks will be listed if needed.

a) THIS STRING AVERAGE IS NOT FOR RECOGNITION. IT SHOULD BE USED ONLY FOR WITHIN HERD MANAGEMENT. This message is printed for supervised herds with string averages that do not meet the parameters to be a published average.

b) COWS MILKED 3 TIMES DAILY FOR PART OR ALL OF THIS YEARLY PERIOD. One cow milked 3X for one month will trigger this message.

4. Reproductive Summary includes three major sections: Current Breeding Herd, Total Herd, and Yearly Reproductive Summary. Throughout the discussion of the Reproductive Summary, the word “pregnant” will mean cows diagnosed pregnant for herds reporting routine pregnancy checks. These herds will have the message “COWS BRED BUT NOT DIAG. PREG.” printed in the Current Breeding Herd section. Routine pregnancy diagnosis in a herd is reported in the options by the DHI technician.

For herds not routinely checking for pregnancy, the word “pregnant” will mean cows bred 65 days or more before the current test date or before they left the herd (non-return rate). These herds will have
the message “COWS BRED SINCE MM-DD-YY” printed in the Current Breeding Herd section. This date will be 65 days before the current test date.

Cows to be sold without breeding can be designated as “C” (cull) for reproductive status. Cows coded "C" are not included in the calculation of values in the Summary of Current Breeding Herd and in most of the calculations in the Reproductive Summary of Total Herd. They are included in the Yearly Reproductive Summary and in the other sections of the DHI-202.

**Breed of Herd** is indicated by a two letter code. The more common breeds are: AY-Ayrshire, BS-Brown Swiss, GU-Guernsey, HO-Holstein, JE-Jersey, MS-Milking Shorthorn, DL-Dutch Belted and WW-Red and White. When two or more breeds are included in the herd and one breed comprises 75 percent or more, the code for this breed is used. If one breed does not predominate, the herd is coded as mixed (XX).

**4a. Reproductive Summary of CURRENT Breeding Herd**

This section includes cows in the herd that:

1) have not been bred and open past the Voluntary Waiting Period (VWP),
2) have been bred but currently are diagnosed open or
3) their last breeding date is too recent for assumed or confirmed pregnancy.

**Total Cows in Breeding Herd** includes cows with no breeding dates open past the VWP, cows bred but not diagnosed or not assumed pregnant, and cows bred but diagnosed open.

**Voluntary Waiting Period (VWP)** is your desired waiting period from freshening to first service which has been reported in the options as Days Open Goal. If no VWP is specified, 60 days is used as the desired number of days open before first service. An accurate value for the voluntary waiting period should be reported because it is used to calculate Projected Minimum Calving Interval and Projected Minimum Days Open in the Reproductive Summary of Total Herd and to calculate % of Heats Observed in the Yearly Reproductive Summary. A goal for first service is usually 50-60 days after calving.

**Cows With No Service Dates or Diag. Open** includes three categories. The first two categories include cows open from the VWP to 100 days, and cows open over 100 days. The number of cows which have been bred and then diagnosed open at a later time is printed in the area labeled **Number Diag. Open**. Both the number of cows and the percentage of total cows in the breeding herd in each category are listed. This section is useful in quantifying the number of cows for which heat detection may be a problem. Special attention is needed for those cows open more than 100 days.

**Days Open At Last Service** - the heading for this section will read either Cows Bred Since mm-dd-yy (65 days before current test day by month, day, year) or Cows Bred But Not Diag. Preg. In herds not designated as using routine pregnancy diagnosis, cows are summarized as pregnant only after they have been bred 65 days or more. Although some individual cows in non-pregnancy check herds may be reported pregnant less than 65 days after breeding, they are still included in the Reproductive Summary of Current Breeding Herd until they are bred 65 days or more. Days Open as of Last Service is used to categorize cows in one of four categories; open fewer than the VWP days, VWP-100 days, 101-130 days and over 130 days.

**Average Days to 1st Service** is an average of the days to first service of cows in the current breeding herd. This value is dependent on the VWP for the herd and on % heats observed. If the VWP is extended or if heat detection efficiency declines, the average days to first breeding will increase.
4b. Reproductive Summary of TOTAL Herd

This section is a summary of all cows in the herd on test day. It will include both pregnant and open
cows. Some of the categories include cows which have left the herd. If this is the case, it will be noted in
the discussion of that category. Cows designated “C” (reproductive cull) for reproductive status are
excluded from the Reproductive Summary of Total Herd unless noted in the discussion of that item.

Days Open at 1st Service divides all cows in the herd that have been bred at least once into three
categories; open fewer than the VWP (voluntary waiting period) days, open VWP-100 days, and open
over 100 days. The categories as summarized for lactations 1, 2, 3+ and all lactations. The % of All 1st
Services is calculated by dividing the number on the all lactations line by the total number of 1st services
for the herd. The goal set for days to first breeding as well as the effectiveness of heat detection in the
herd will affect the distribution of cows in these groups. In herds where heat detection is a high priority,
larger percentages of cows will be open 100 days or less at first service.

Avg. Days to 1st Service is calculated by summing the days to first service for all cows in each
category which have been bred at least once. The sum is divided by the number of cows with first
services in that category to obtain the average. Avg. Days to 1st Service is affected by heat detection,
VWP prior to first service, and the reproductive health of the herd.

Services Per Pregnancy - Preg. Cows includes all pregnant cows. Cows that left the herd in the last
nine months are also included if they were diagnosed or assumed pregnant. The numerator is the total
number of services and the denominator is the number of pregnant cows.

Services Per Pregnancy - All Cows includes all services more than 64 days before test day plus
services for cows bred in the last 64 days which have been diagnosed pregnant or open. Cows left herd
in the last nine months are also included. Only services for the current lactation of each cow are
summarized. The numerator is the total number of services in the evaluation period. The denominator is
the number of pregnant cows.

Projected Minimum Calving Interval and Projected Minimum Days Open include cows with
breeding dates and cows without breeding dates that are in milk longer than the VWP. The days open for
cows with breeding dates are determined using the last breeding date. Days open for cows without
breeding dates and in milk longer than the VWP are computed as the greater of: a) days open as of test
day plus 10 days or b) average days to 1st service for total herd

Projected Minimum Days Open is the average days open based on days open calculations described
above.

Projected Minimum Calving Interval is calculated as: [(Av. Days Open + 280 days) /30.4] days
where 280 days is the average length of gestation and 30.4 is the average length of a month.
Current Actual Calving Interval includes cows with two reported calvings. The interval is calculated as \[\frac{(\text{Average number of days between calvings})}{30.4}\].

Service or Heat Intervals provides a summary of all service or heat intervals for cows currently in the herd. This summary is based on all intervals for each cow. For example, a cow with two reported heat dates and three breeding dates would have four intervals included in the summary. All breeding and heat dates must be reported for this section to be accurate.

Four service/heat interval length categories are listed: less than 18 days, 18-24 days, 36-48 days, and all other intervals. Most normal heat cycles will be from 18-24 days. Intervals less than 18 days can indicate reproductive problems such as cystic ovaries, inadequate heat detection or use of prostaglandin. Intervals of 36-48 days indicate that one heat was not observed. Service or heat intervals in the “other” category are likely to be associated with two or more missed heats, or with abnormal heat cycles, or with the use of prostaglandin. DHIA members who receive the DHI-210 (Monthly Report) can monitor the last service or heat interval length by referring to the Intvl. Days column on the DHI-210 form.

Services For Past 12 Months is a summary by 1st service, 2nd service, 3rd and later service and all services. The summary includes all breedings on cows left herd in the last 9 months and all breedings on cows coded as reproductive culls (C).

Number of Services is determined by adding all monthly services shown in the Yearly Reproductive Summary of the DHI-202 for months with % successful printed (usually all but last 2 test dates). The number of services listed for the month dropped this test period and the month dropped last test period (refer to last month’s DHI-202) are added to the total.

Example: 10+16+16+23+20+25+42+58 +45+28+14+11=308 where 14 equals the services from the month dropped and 11 equals the services from the month dropped on last month’s DHI-202.

% Successful is the number of successful services in each category divided by total services in that category multiplied by 100.

Service Sire Merit$ for each category is the average Merit$ for all services to proven sires.

Abortions

Actual - This Month includes all observed abortions (status code 8) reported this test period.

Apparent - This Month includes cows rebred or diagnosed open following a diagnosed pregnancy

Actual and Apparent Abortions -Past Year is the sum for the most recent 12 months.

NOTE: Herd must be on routine pregnancy checking for abortions to be summarized.
4c. Yearly Reproductive Summary

This section is designed to provide a current, up-to-date review of herd reproductive information for the past year. Services on cows that left the herd during the past year and services on cows coded as reproductive culls are included in this summary.

Month Dropped is labeled on the top line of this summary. Normally this is one test day. However, if the test schedule was irregular, Month Dropped could be blank or it could represent two test periods. Values in the Month Dropped line allow comparisons between current reproduction and reproduction a year ago.

% of Heats Observed for each test period is an indication of the success of heat detection in the herd. This percentage is calculated as follows:

\[
\text{% Heats Obs.} = \left( \frac{\text{number of services and heats in the test period for eligible cows}}{\text{estrous cycle days in test period for eligible cows} / 21} \right) \times 100.
\]

Eligible cows are defined as all cows past the VWP which are contributing to estrous cycle days in the test period.

Estrous cycle days for eligible cows are calculated as follows:

a) Cows with no service date or cows diagnosed open - eligible days are calculated as the number of days past the VWP in this test period.

b) Cows bred but not diagnosed pregnant or open - eligible days in the test period are determined as:

\[
\text{Eligible days} = \text{days in test period through the last service} + \left( \text{days in test period after the last service} \times \left(1 - \left( \frac{\text{yearly successful}}{100} \right) \right) \right)
\]

c) Pregnant cows - eligible days would be the days in the test period up to the successful breeding date. Pregnant cows would only contribute eligible days in cases of unusually long test intervals.

At best, approximately 80-85% of all heats will be detected visually. A recommended goal is to service greater than 70% of possible breedings.

% Successful is the number of successful services in each test period divided by the total number of services for that test period. Percent successful is not computed for the two most recent test periods since pregnancy status on most of these breedings has not been determined. For herds on routine pregnancy, a reported pregnancy diagnosis is used to determine percent successful. For herds not reporting pregnancy diagnosis, 65 day non-return is used.

Pregnancy Rate is the percentage of cows eligible to become pregnant that are reported pregnant in a specific period of time. It is a measure of how quickly cows have conceived and it accounts for both heat detection and conception rate. The assessment begins at the end of the VWP after calving and evaluates each 21-day period for eligible cows to determine the percent of cows that became pregnant. Every 21-day period for a cow that lapses without a pregnancy reduces the herd’s Pregnancy Rate. Thirteen to 14 percent is the national average Pregnancy Rate.

Number Services is the number of services reported during that test period.

Number Confirmed Pregnant represents the outcome of pregnancy exams conducted during that test period. Only cows with a “P” reported will be included in this number. Results of pregnancy diagnoses
must be accurately reported for this to be a valid summarization.

*Number calving* is the reported number of calvings during that test period.

*Total Pregnant Cows* is the total number of pregnant cows on that test day. In herds on routine pregnancy check, this is all cows in the herd with a “P” reported. In non-pregnancy check herds, this number represents cows with a “P” reported plus cows bred 65 days or more before test day.

**5. Birth Summary** summarizes the number, sex, and mortality of calves born in the last year by lactation 1st and 2nd and later lactations. The calving difficulty score, if reported, is also summarized for each group on a scale from 1 to 5: 1=No problems, 2=Slight problem, 3=Needed assistance, 4=Considerable force used, and 5=Extreme difficulty.

The percent of births with a difficulty score of 4 and 5 is also listed. Calving ease information may be used to evaluate the effectiveness of selecting the best calving ease sires for heifers and smaller cows.

With all types of dairy records, the output is useful only if the input is complete and accurate. For this section to provide information that will be most useful to the producer, technicians and producers must report breeding and calving information correctly and promptly. Getting more national information about the relationship between sires and calving ease is important and should provide useful information to individual dairy producers.

**6. Cows To Be Milking, Dry, Calving By Month** is an eight-month projection for all cows in the herd. Cows are included in this summary according to the following conditions:

1) Cows in milk on test day with no due date are assumed to be milking all eight months.
2) Cows dry on test day without a due date will be dry for the entire eight months.
3) Cows with due dates after the 15th of a month are assumed dry for that entire month and the previous month.
4) Cows with due dates on or before the 15th of a month are assumed milking that entire month and dry the previous two months.
5) Cows to Calve are cows with due dates that month. These cows are included in the number milking if they are due on or before the 15th of the month and in the number dry if they are due after the 15th of the month.
6) Heifers to Calve in the next eight months are summarized for herds enrolled in the Heifer Calf Management option (DHI-214). All heifers due to calve that month will be included in the number milking.

This summary estimates numbers of cows in milk after accounting for the % per month culling rate for the herd. This figure is calculated by dividing by 12 the annual % cows left herd figure. The example herd has an average yearly culling rate of 36% (3% per month). Therefore, the projected number of cows to be milking is reduced by 3% the first month, 6% the second month, etc. to reflect the expected effect of normal culling.
7. **Stage of Lactation Profile** divides the milking herd into five groups based on days in milk for the current lactation: 40 days or less, 41 to 100 days, 101 to 199 days, 200 to 305 days, and 306 days and greater. First lactation cows, second lactation cows and third and later lactation cows are summarized separately within each stage of lactation group. 

**Number of Milking cows, Average Daily Milk Production, % Fat, % Protein, Average SCC Score or Weighted Actual SCC and SCC Scores > 3.9 or 200,000** are listed for each group.

Milk production trends across stage of lactation can indicate if the herd is following a normal lactation curve. Milk production should peak in the second stage of lactation (41-100 days) with a gradual decline as days in milk increase.

Production by stage of lactation can be compared with similar values from previous DHI-202 Herd Summaries. The effects of changes in management conditions (such as change in the feeding program) can be determined from these comparisons. The number of cows in each stage of lactation group should be considered. A small number of cows may yield an unrepresentative average.

% Fat and % Prot are listed together to allow comparisons between the two components. Nutrition will have a high influence on these values, and an abnormal inversion may indicate a metabolic disorder. Producers should consult their veterinarian or nutritionist when a high degree of abnormal inversions exist or if any values are abnormally low.

**Average SCC Score or Weighted Actual SCC and SCCS > 3.9 or 200,000** by stage of lactation can help you monitor somatic cell count across stage of lactation. Increases in the somatic cell count are associated with decreases in milk production. For each 1 unit increase in SCC Score, daily production per cow is expected to decrease by 0.8 lb. for first lactation cows and 1.4 lb. for second and later lactation cows.

Mastitis control can be partially evaluated with the data in this section of the summary and this information should be used in conjunction with the monthly somatic cell count report for the herd. There are several trends to watch for such as the pattern of counts, are high counts found in early or late lactation, or whether there is no pattern at all. The number and percent of cows over 3.9 or 200,000 does not necessarily represent new infections in the herd.

First lactation cows should have lower SCC scores than older cows. Lowest SCC scores generally will be found early in lactation. High SCC scores after calving may be caused by ineffective dry cow therapy and/or poor environmental conditions in the maternity area. Increases in SCC score can be due to faulty milking equipment, improper milking techniques and/or poor environmental conditions.
8. Identification and Genetic Summary provides the dairy producer with a comprehensive summary of the completeness of identity of the replacement and milking herd as well as a genetic profile of the herd.

8a. Identification Summary gives an age and identity summary of all the recorded animals in the herd. This is an excellent way to verify replacement and producing animals' numbers on the farm with the numbers recorded.

For replacements, there are two Age Group categories plus a total number line. In addition, the milking animals are categorized by lactation number as well as total number for all lactations.

Average Age Yr-Mo indicates the average age in years and months for each age group category for replacements and is the average age at last freshening for cows.

The key figure to monitor in this section is average age of first lactation animals. The goal for this is 24 months. Numerous research trials have indicated that when heifers calve with adequate body size at 24 months of age, it increases lifetime productivity and there is more production per day of life and more replacements. Delaying calving beyond the 24 month age goal costs over $1/day or more than $30 per month in lost herd income for every unit beyond the goal. The tendency is for the high producing, well managed herds to have younger herds as older cows are being culled and replaced with genetically superior heifers.

Number Identified indicate the number of replacement and producing females with identified sires and dams. These data are interpreted in a manner similar to that of the age and number data.

Number ID Changes is a tabulation of all identification changes which were reported after the second test date following a cow's entry into the herd including: cow, sire or dam identity; cow, sire or dam breed; or date of birth.

% Identified Producing Females is indicated at the bottom of the column. Valid identification for sires, such as registration number, NAAB code or ear tag, must be reported in order to be considered as identified. Sire name is not sufficient identification. A low percentage of identified animals indicates the need for improved animal identification to enhance the accuracy and usefulness of the DHI records.

8b. Genetic Summary

No. Animals with Merit $ indicates the number of animals in each age category that have a value calculated. At least 25% of the herd must have sires with Merit $ values reported for average Merit$ of sires to be calculated. Sires with no available Merit$ are not included in the average.

Average Merit $ for animals in the herd and their sires are reported. These estimates are calculated by AIPL (Animal Improvement Programs Laboratory at USDA, Beltsville, MD) using the Animal Model method. Genetic progress in a herd is evidenced by an increase in cow and sire Merit$ from younger to older cows. If genetic trend is progressing, the youngest cows in the herd should have the highest Merit$ values. The highest Merit$ for sires should be for current service sires.
Herd Merit $ Option indicates whether a herd chooses bulls based on MFP (milk, fat and protein), MF (milk and fat) or CY (cheese yield). The Herd Merit $ option is reported by your DHI Technician in your herd options (#74). Codes are FM (milk and fat), CM (cheese yield) or NM (milk, fat and protein).

Information reported in the Genetic Profile of Service Sires and in the average Merit $ values for cows and sires of cows will be consistent with the Herd Merit$ Option. PTA values and percentile rankings for bulls will differ depending on the option chosen.

PTA$ reflect the gross dollar income per lactation that future daughters of bulls will earn in excess of herdmates sired by bulls having a PTA$ equal to zero.

Genetic Profile of Service Sires summarizes information on Proven A.I. Sires, A.I. Young Sires and All Other Sires used in the herd. All Other Sires generally includes herd bulls and young sires in private sampling programs. The percent of the herd bred to proven sires, young sires or other sires is reported in addition to the number of bulls used in each category. Dairy farmers should maximize the use of proven and young sires and discontinue use of herd bulls in order to maximize genetic progress. The average Merit $ for proven sires and young sires is reported. If All Other Sires includes one or more proven sires, the average Merit $ of these proven sires will be printed. The number of proven sires will be indicated in parentheses in the margin.

The Avg. Percentile Rank Net Merit is also summarized for each group so that merit of service sires can be evaluated. Percentile ranking is based on net merit $. Generally, herds should use sires ranking in at least the 80th percentile.

DCR Mlk is the Data Collection Rating for milk and is an indication of the accuracy of lactation records from a wide variety of test plans. The squared correlation of estimated and true yields is multiplied by a factor to give monthly testing a rating of 100 and daily testing a rating of 104. DCR is computed as soon as 305 days have lapsed. The herd average DCR is the average of all cows that qualify for inclusion in genetic analysis. For more details, go to http://aipl.arsusda.gov/reference/datarating.htm

NOTE: For this summary to accurately reflect the A.I. breeding program in the herd, A.I. sires must be reported using their registration number or uniform NAAB code number. A.I. sires reported using their code name will be summarized under All Other Sires.

9. Production by Lactation Summary is listed for first lactation, second lactation, third and later lactation, and all lactations.
Number of Cows listed for all lactations will equal total cows in the herd on test day. Average Age is computed by including all cows with reported calving dates. An estimated birth date is used for new cows which entered without a birth date.

Avg Age Mon. gives the age in months for each lactation group and for all lactations.

Peak Milk is the highest test day milk production that has occurred in a cow’s lactation and is listed for each lactation group as well as for all animals. The peak is calculated after 50 days in milk and does not include any days after 305 days.

Summit Milk is the average of the two highest of the first three test days production and is listed for animals by lactation number and for all animals. Reviewing these values along with the information in the Stage of Lactation Profile (Section 7) can indicate the level of the nutrition program for dry cows and the lactating herd. Cows peaking low and/or early can be a sign of inadequate nutrition, whereas cows peaking later in lactation, but at high levels is seen in herds receiving BST or some form of added fat. An increase of one pound in summit performance usually will relate to 225-230 pounds of increase in Rolling Herd Average.

Projected ME 305 Day Milk, Fat and Protein for all cows with projected 305 day mature equivalent (ME) records printed on the DHI-200, 210, 211, 220 and 225 (Monthly Report) are added and averaged. Cows fresh less than 50 days, cows in milk more than 50 days and with only one valid test day milk weight for the current lactation, or cows with no reported calving date are excluded from this calculation.

Projected ME 305 Day averages allow comparisons of production of first lactation cows and older cows on an age-adjusted basis. Generally, average projected ME 305 day production of first lactation cows will be 400-600 lb. less than the average for second and later lactation cows. Although the average PTA of sires of first lactation cows may be higher, second and later lactation cows have been culled more heavily. Relatively large differences in average projected ME production may be due to significant differences in genetic and/or management factors.

Difference from Herdmates Milk, Fat and Protein for all cows with a value printed on the DHI-200 and 220 are added and averaged. This is the number of pounds that the cow’s current 305-2X-ME record compared to the average of the herdmates adjusted for record in progress. Herdmates are those cows of the same breed and calving season. There are two calving seasons (November to May and June to October).

Body Weight is computed from individual cow body weights reported when the cow’s calving date is reported. Cows entering the herd without body weights are estimated using the following:

<table>
<thead>
<tr>
<th>Breed</th>
<th>1st Lact</th>
<th>2nd Lact</th>
<th>3rd or Later Lact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ayrshire</td>
<td>900</td>
<td>990</td>
<td>1100</td>
</tr>
<tr>
<td>Guernsey</td>
<td>850</td>
<td>930</td>
<td>1050</td>
</tr>
<tr>
<td>Holstein</td>
<td>1100</td>
<td>1210</td>
<td>1350</td>
</tr>
<tr>
<td>Jersey</td>
<td>800</td>
<td>880</td>
<td>1000</td>
</tr>
<tr>
<td>Brown Swiss</td>
<td>1100</td>
<td>1210</td>
<td>1350</td>
</tr>
<tr>
<td>All Others</td>
<td>1000</td>
<td>1100</td>
<td>1220</td>
</tr>
<tr>
<td>Dairy Goats</td>
<td>100</td>
<td>110</td>
<td>120</td>
</tr>
</tbody>
</table>
10. Current Somatic Cell Count Summary provides a herd analysis for milk quality and mastitis/udder health.

Herd Production Lost From SCC This Test Period indicates the expected loss of milk and income due to the somatic cell count for the entire herd. These dollar values are based on research relating to production losses due to subclinical mastitis in relation to the somatic cell count. They do not include any quality premiums lost by the herd as a result of high cell counts.

% Cows SCC Score - the % of first lactation, second lactation, third and greater lactation cows, and all cows in each of five somatic cell count score categories (0-3, 4, 5, 6, 7-9) are listed. At least 25% of the milking cows must have somatic cell counts reported for this section to print.

A large proportion of the herd should have SCC scores of 3 or less. A recommended goal is for 70% or more of first lactation cows to have scores 0 to 3 while 55-60% of the entire herd should be in this category. No more than 7-8% of the entire herd should have an SCC score of 6 or greater. Dairy producers need to evaluate milking equipment, milking procedures and/or environmental conditions when relatively high percentages of cows score at SCCS 6 or higher.

11. Dry Cow Profile includes the number of dry periods and average days dry for the last completed dry period for all cows in the herd. Information on second, third and later lactations is reported, as well as an average for all lactations. The dry periods are grouped by length: dry fewer than 40 days, dry 40-70 days, and dry over 70 days. The length of the dry period has a significant effect on the subsequent lactation. Cows dry fewer than 40 days or more than 70 days tend to produce less milk during the next lactation than herdmates that are dry an optimum of 50-60 days.

12. Yearly Summary of Cows Entered and Left the Herd is a measure of herd turnover and herd replacement. The yearly period is comprised of the test periods printed in the Yearly Production and Mastitis Summary of the DHI-202 (number of test periods closest to 365 days). Total cows in the herd on the current test day are used to calculate the % of cows entering and leaving the herd. “Voluntary” culling of low production cows and cows sold for dairy purposes (first two categories) are the most desirable reasons for culling. When large numbers of cows are culled for involuntary reasons (reproductive failure, mastitis, udder, poor feet and legs, injury, disease or death), “voluntary” culling is limited. Cow turnover for reasons other than low production or dairy purposes should be minimized.
13. Yearly Production and Mastitis Summary is designed to provide an up-to-date review of herd information for the past year. Comparison of all tests conducted during the year can be made and changes noted. Most items included in this section have been discussed previously. More detailed explanations are in Item 2a.

Date of Test - the top line of this column is labeled “Month Dropped”. Normally this is one test day. However, if the test schedule was irregular, Month Dropped could be blank or it could represent two test periods. Values in the “Month Dropped” allow comparisons between current production and production a year ago.

Averages are printed on the bottom line for most items (except Rolling Herd Averages). They are computed as unweighted averages for all items in the test period listed. No adjustments are made for the length of each test period.

Days in Test Period are determined as the period beginning on the day after the previous test and ending on the current test date.

Number of Cows in Herd on Test Day is the total number of cows on the DHI-201 (Barn Sheet) for each test day minus the number of cows that left the herd during the test period.

Test Day Averages (Milking Cows) includes a column for Days in Milk, which is the average days in the current lactation for each cow in milk on test day. This figure provides a measure of the average stage of lactation of the herd. Test Day Averages (Milking Cows) tend to decline as average days in milk increase. The average pounds of milk for milking cows is also listed.

Standardized 150 Day Milk is designed to provide a comparison of test day production of the milking cows from one month to the next after standardizing to a common days in milk (150 days). Regional lactation curves for breed, lactation number and season of calving are used to adjust each cow’s test day milk production to her expected production assuming she was 150 days in milk on test day. The standardized production values are computed and averaged for all cows in milk 330 days or less. Standardized 150 day milk is an excellent tool for monitoring the effect of feeding and management changes.

Test Period Persistency Index provides a means to determine if the herd produced as expected during the current month based on the previous month’s production.

Each cow’s expected % change in production from last month to this month is computed as the ratio of each cow’s standardized 150 day milk for the last two test days. An average ratio is computed to determine the test period persistency for the herd. A Test Period Persistency Index of less than 90 may indicate that changes in management practices had a negative effect on herd production. Index values over 110 may be due to favorable management or feeding changes during the past month causing herd
production to be above the normal “expected” level.

**Test Day Averages (All Cows)** report average milk production, fat % and protein % for all cows in the herd, including dry cows. The % of cows in the herd in milk on test day is also reported.

**Rolling Yearly Herd Average** for milk, fat and protein for each test period in the past year are listed. A detailed description of the Rolling Herd Average calculation is in section 2b.

**Somatic Cell Count Summary** includes the % of cows in each of the five SCCS categories (see item 10). The Average SCC Score is calculated as an unweighted average of SCC scores of milking cows on test day. The Actual SCC reported is a weighted average actual somatic cell count to the nearest 1000. This information is a valuable tool for dairy farmers in monitoring the udder health of the herd. The trend in Average Somatic Cell Counts should be observed each month. Large increases may indicate faulty milking equipment, improper milk practices and/or poor environmental conditions. These items should be examined as possible reasons for an increasing SCC Score.

**Number Left Herd** includes the number of cows died or sold during each test period.

**Test Period Average Milk Lbs. Added** and **Test Period Average Milk Lbs. Dropped** should be used to evaluate changes in the Rolling Herd Average for milk. An explanation of the use of test period averages in calculating the Rolling Herd Average is given in section 2b.
### Appendix Table 1: Description of DHI Record Plans

<table>
<thead>
<tr>
<th>Code</th>
<th>Plan</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>00</td>
<td>DHI</td>
<td>The DHI technician visits the farm for each milking in a 24 hour period. Milk weights and samples are obtained at each milking.</td>
</tr>
<tr>
<td>01</td>
<td>DHI-AP-T</td>
<td>(AM-PM with Time Monitor). For herds milked twice daily, milk weights and samples are obtained at the AM or PM milking, alternating each test period. For herds milking all cows three times daily, two consecutive milkings are weighed, one or two (optional) sampled. Weighed and sampled milkings are rotated among the milkings on subsequent test days. Appropriate adjustment factors are applied to each cow’s production to determine the 24 hour total. Herd must have a time monitor installed.</td>
</tr>
<tr>
<td>02</td>
<td>DHI-APCS</td>
<td>For herds milked twice daily, milk weights are obtained at both AM and PM milkings but samples are taken at the AM or PM milking alternating on consecutive test days. For herds in which all cows are milked three times daily, milk weights are obtained from all three milkings, but samples are taken from one or two (optional) milkings that are rotated among all three milkings on consecutive test days. Appropriate adjustments factors are applied to determine the component percentage. <strong>NOTE:</strong> Herds in which some cows are milked 2X and some 3X cannot enroll on AP or APCS testing plans until you contact your DHI Manager for appropriate testing procedures.</td>
</tr>
<tr>
<td>20</td>
<td>DHIR</td>
<td>(Dairy Herd Improvement Registry). Application for DHIR testing must be made by the dairyman to the national breed registry organization, and the herd cannot be enrolled on DHIR until the breed organization issues a permit for the herd. Additional DHIR requirements apply.</td>
</tr>
<tr>
<td>21</td>
<td>DHIR-AP-T</td>
<td>(Dairy Herd Improvement Registry AM-PM with Time Monitor). This test is the same as Code 01 except the herd must be enrolled in DHIR with the national breed registry organization as in test code 20.</td>
</tr>
<tr>
<td>22</td>
<td>DHIR-APCS</td>
<td>(Dairy Herd Improvement Registry with Alternate AM-PM Component Sampling). This test is the same as Code 02 except the herd is enrolled in DHIR with the national breed registry organization as in test code 20.</td>
</tr>
<tr>
<td>23</td>
<td>DHIR-AP</td>
<td>(Dairy Herd Improvement Registry AM-PM without Time Monitor). This test is the same as Code 01 except a time monitor is not required and the herd must be enrolled in DHIR with the national breed registry organization as in test code 20.</td>
</tr>
<tr>
<td>31</td>
<td>DHI-AP</td>
<td>(AM-PM without Time Monitor). This test is the same as Code 01 except a time monitor is not required.</td>
</tr>
<tr>
<td>33</td>
<td>DHI-MO</td>
<td>(Milk Only). This test is the same as Code 00 without component sampling.</td>
</tr>
<tr>
<td>34</td>
<td>DHI-MO-AP</td>
<td>(Milk Only AM-PM). This test is the same as Code 01 without component sampling.</td>
</tr>
<tr>
<td>40</td>
<td>OS</td>
<td>(Owner Sampler). Milk weights and samples are obtained from each milking in a 24 hour period. The dairy farmer or someone other than the technician is responsible for taking the milk weights and samples.</td>
</tr>
</tbody>
</table>


### Appendix Table 1: Description of DHI Record Plans

<table>
<thead>
<tr>
<th>Code</th>
<th>Plan</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>41</td>
<td>OS-AP</td>
<td>(Owner Sampler AM-PM). This test is the same as Code 31 except the dairy farmer or someone other than the technician is responsible for taking the milk weights and samples. The records are not used in USDA sire summaries.</td>
</tr>
<tr>
<td>42</td>
<td>OS-APCS</td>
<td>(Owner Sampler with alternate AM-PM Component Sampling). This test is the same as Code 02 except the dairy farmer or someone other than the technician is responsible for taking the milk weights and samples.</td>
</tr>
<tr>
<td>43</td>
<td>OS-MO</td>
<td>(Owner Sampler Milk Only). The dairy farmer or someone other than the technician is responsible for taking milk weights for all milkings in a 24 hour period. No samples are taken.</td>
</tr>
<tr>
<td>44</td>
<td>OS-MO-AP</td>
<td>(Owner Sampler Milk Only AM-PM). The dairy farmer or someone other than the technician takes milk weights for one milking in a 24 hour period. No samples are taken.</td>
</tr>
<tr>
<td>45</td>
<td>OS-BA</td>
<td>(Owner Sampler with Breed Average fat test). The dairy farmer or someone other than the technician takes milk weights for all milkings in a 24 hour period. No samples are taken and the breed average fat test is used for each individual cow.</td>
</tr>
<tr>
<td>46</td>
<td>OS-AP-PT</td>
<td>(Owner Sampler AM-PM with Plant fat test). This test is the same as Code 44 except the herd’s plant fat test is used for each milking cow in the herd.</td>
</tr>
<tr>
<td>49</td>
<td>OS-PT</td>
<td>(Owner Sampler with Plant Test). These records are the same as Code 45 except the herd’s plant fat test rather than the breed average is used for each milking cow in the herd.</td>
</tr>
<tr>
<td>50</td>
<td>OS-AP-BA</td>
<td>(Owner Sampler AM-PM with Breed Average fat test). This test is the same as Code 44 except the breed average fat test is used for each milking cow in the herd.</td>
</tr>
<tr>
<td>70</td>
<td>SS</td>
<td>(Supervisor Sampled). This test is the same as Code 40 except the DHIA technician takes the milk weights and samples.</td>
</tr>
<tr>
<td>71</td>
<td>SS-AP</td>
<td>(Supervisor Sampled AM-PM). The technician takes milk weights and samples from one milking only. The milking weighed and sampled is rotated each test period.</td>
</tr>
<tr>
<td>72</td>
<td>SS - APCS</td>
<td>(Supervisor Sampled with alternate AM-PM Component Sampling). The technician obtains milk weights from each milking in a 24 hour period but samples only one. The milking sampled is rotated each test period.</td>
</tr>
<tr>
<td>73</td>
<td>SS-MO</td>
<td>(Supervisor Sampled Milk Only). The technician obtains milk weights from each milking in a 24 hour period but takes no samples.</td>
</tr>
<tr>
<td>74</td>
<td>SS-MO-AP</td>
<td>(Supervisor Sampled Milk only AM-PM). The technician obtains milk weights from one milking only. No samples are taken.</td>
</tr>
</tbody>
</table>

NOTE: Check with your technician on availability of record plans from your DHIA Affiliate.
### Silage Values To Use
If Forage Test Is Not Available

<table>
<thead>
<tr>
<th>Item</th>
<th>%DM</th>
<th>CP%</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corn (Poor to Excellent)</td>
<td>29-33</td>
<td>8.4-8.1</td>
<td>.64-.73</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>27</td>
<td>6.2</td>
<td>.59</td>
</tr>
<tr>
<td>Millet</td>
<td>28</td>
<td>9.5</td>
<td>.65</td>
</tr>
<tr>
<td>Rye</td>
<td>32</td>
<td>12.8</td>
<td>.54</td>
</tr>
<tr>
<td>Small Grain (oats, wheat)</td>
<td>30</td>
<td>11.9</td>
<td>.58</td>
</tr>
<tr>
<td>Sorghum (Poor to Excellent)</td>
<td>28-30</td>
<td>6.0-7.5</td>
<td>.56-.61</td>
</tr>
<tr>
<td>Soybean</td>
<td>27</td>
<td>17.3</td>
<td>.56</td>
</tr>
</tbody>
</table>

### Hay Values To Use
If Forage Test Is Not Available

<table>
<thead>
<tr>
<th>Item</th>
<th>%DM</th>
<th>CP%</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa-Bright and leafy</td>
<td>90</td>
<td>18-23</td>
<td>.61-.68</td>
</tr>
<tr>
<td>Alfalfa-Dark and stemmy</td>
<td>90</td>
<td>15-17</td>
<td>.56-.59</td>
</tr>
<tr>
<td>Coastal Bermuda-Bright Green</td>
<td>92</td>
<td>12-16</td>
<td>.50-.56</td>
</tr>
<tr>
<td>Coastal Bermuda-Brown/Bleached</td>
<td>93</td>
<td>8.0</td>
<td>.42</td>
</tr>
<tr>
<td>Fescue</td>
<td>89</td>
<td>8-10</td>
<td>.57-.59</td>
</tr>
<tr>
<td>Johnsongrass</td>
<td>89</td>
<td>9.5</td>
<td>.54</td>
</tr>
<tr>
<td>Millet Hay</td>
<td>87</td>
<td>8.6</td>
<td>.60</td>
</tr>
<tr>
<td>Oat-Dark green, immature heads</td>
<td>90</td>
<td>17.5</td>
<td>.75</td>
</tr>
<tr>
<td>Oat-Brown or bleached, ripe heads</td>
<td>90</td>
<td>11.5</td>
<td>.54</td>
</tr>
<tr>
<td>Orchardgrass (early bloom)</td>
<td>89</td>
<td>15.0</td>
<td>.67</td>
</tr>
<tr>
<td>Orchardgrass (late bloom)</td>
<td>91</td>
<td>8.4</td>
<td>.55</td>
</tr>
<tr>
<td>Ryegrass</td>
<td>86</td>
<td>8.6</td>
<td>.66</td>
</tr>
<tr>
<td>Sorghum Hybrids-Fine stem</td>
<td>91</td>
<td>8.0</td>
<td>.57</td>
</tr>
<tr>
<td>Wheat</td>
<td>86</td>
<td>9.0</td>
<td>.59</td>
</tr>
</tbody>
</table>

### Other Succulents Values To Use
If Forage Test Is Not Available

<table>
<thead>
<tr>
<th>Item</th>
<th>%DM</th>
<th>CP%</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alfalfa Haylage</td>
<td>50</td>
<td>17.0</td>
<td>.64</td>
</tr>
<tr>
<td>Beet Pulp, Dried</td>
<td>92</td>
<td>10.1</td>
<td>.81</td>
</tr>
<tr>
<td>Brewers Grain, Wet</td>
<td>20</td>
<td>25.4</td>
<td>.80</td>
</tr>
<tr>
<td>Corn Cobs</td>
<td>90</td>
<td>3.2</td>
<td>.50</td>
</tr>
<tr>
<td>Cotton Seed Hulls</td>
<td>91</td>
<td>4.1</td>
<td>.45</td>
</tr>
<tr>
<td>Crushed Ear Corn</td>
<td>88</td>
<td>10.0</td>
<td>.89</td>
</tr>
<tr>
<td>Citrus Pulp</td>
<td>91</td>
<td>6.7</td>
<td>.80</td>
</tr>
<tr>
<td>Distillers Grain, Dry</td>
<td>94</td>
<td>23.0</td>
<td>.90</td>
</tr>
<tr>
<td>Dried Cane Molasses</td>
<td>94</td>
<td>10.3</td>
<td>.73</td>
</tr>
<tr>
<td>Grass-Legume Haylage</td>
<td>55</td>
<td>12.4</td>
<td>.60</td>
</tr>
<tr>
<td>Maltlage</td>
<td>44</td>
<td>17-22</td>
<td>.81</td>
</tr>
<tr>
<td>Oat Straw</td>
<td>92</td>
<td>4.4</td>
<td>.50</td>
</tr>
<tr>
<td>Orange Pulp</td>
<td>88</td>
<td>8.5</td>
<td>.81</td>
</tr>
<tr>
<td>Peanut Hulls, Ground</td>
<td>94</td>
<td>6.6</td>
<td>.35</td>
</tr>
<tr>
<td>Potatoes, Fresh</td>
<td>23</td>
<td>9.5</td>
<td>.85</td>
</tr>
</tbody>
</table>

### Concentrates Values

<table>
<thead>
<tr>
<th>Item</th>
<th>%DM</th>
<th>CP%</th>
<th>NEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barley</td>
<td>88</td>
<td>13.5</td>
<td>.88</td>
</tr>
<tr>
<td>Corn and Cob Meal</td>
<td>87</td>
<td>9.0</td>
<td>.87</td>
</tr>
<tr>
<td>Corn Gluten Feed</td>
<td>90</td>
<td>25.6</td>
<td>.87</td>
</tr>
<tr>
<td>Corn Gluten Meal</td>
<td>91</td>
<td>65.9</td>
<td>.94</td>
</tr>
<tr>
<td>Corn Grain, Ground</td>
<td>89</td>
<td>9.7</td>
<td>.93</td>
</tr>
<tr>
<td>Cotton Seed Meal (41%)</td>
<td>91</td>
<td>45.6</td>
<td>.79</td>
</tr>
<tr>
<td>Cotton Seed, Whole</td>
<td>92</td>
<td>23.0</td>
<td>.99</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>87</td>
<td>9.7</td>
<td>.84</td>
</tr>
<tr>
<td>High Moisture Ear Corn</td>
<td>70</td>
<td>9.6</td>
<td>.78</td>
</tr>
<tr>
<td>High Moisture Shelled Corn</td>
<td>70</td>
<td>10.7</td>
<td>.93</td>
</tr>
<tr>
<td>Huminry Feed</td>
<td>90</td>
<td>11.5</td>
<td>.91</td>
</tr>
<tr>
<td>Milo, Rolled</td>
<td>89</td>
<td>11.9</td>
<td>.86</td>
</tr>
<tr>
<td>Oats</td>
<td>89</td>
<td>13.3</td>
<td>.80</td>
</tr>
<tr>
<td>Peanut Meal</td>
<td>92</td>
<td>52.0</td>
<td>.83</td>
</tr>
<tr>
<td>Shelled Corn</td>
<td>89</td>
<td>10.0</td>
<td>.93</td>
</tr>
<tr>
<td>Soybean Meal (44%)</td>
<td>89</td>
<td>49.6</td>
<td>.88</td>
</tr>
<tr>
<td>Soybeans, Whole</td>
<td>90</td>
<td>41.7</td>
<td>.99</td>
</tr>
<tr>
<td>Wheat</td>
<td>89</td>
<td>16.0</td>
<td>.93</td>
</tr>
<tr>
<td>Wheat Bran</td>
<td>89</td>
<td>17.1</td>
<td>.73</td>
</tr>
</tbody>
</table>

### Concentrates TDN Values

<table>
<thead>
<tr>
<th>Feed Ingredient</th>
<th>TDN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Animal Fat (Hydrolyzed)</td>
<td>233</td>
</tr>
<tr>
<td>Shelled Corn</td>
<td>78</td>
</tr>
<tr>
<td>Corn and Cob Meal</td>
<td>72</td>
</tr>
<tr>
<td>Snapped Corn</td>
<td>68</td>
</tr>
<tr>
<td>Grain Sorghum</td>
<td>76</td>
</tr>
<tr>
<td>Barley</td>
<td>74</td>
</tr>
<tr>
<td>Oats</td>
<td>68</td>
</tr>
<tr>
<td>Wheat Bran</td>
<td>69</td>
</tr>
<tr>
<td>Whole Cotton Seed</td>
<td>88</td>
</tr>
<tr>
<td>Cotton Seed Meal (41%)</td>
<td>62</td>
</tr>
<tr>
<td>Soybean Meal</td>
<td>80</td>
</tr>
<tr>
<td>Peanut Meal</td>
<td>75</td>
</tr>
<tr>
<td>Corn Gluten Feed - Wet, 40% DM</td>
<td>33</td>
</tr>
<tr>
<td>Whole Soybeans</td>
<td>83</td>
</tr>
<tr>
<td>Huminry Feed</td>
<td>85</td>
</tr>
<tr>
<td>Milo</td>
<td>75</td>
</tr>
<tr>
<td>Wheat</td>
<td>78</td>
</tr>
</tbody>
</table>
Dairy Records Management Services works with 22 DHIA Service Affiliates that are cooperative members or that contract services. Each affiliate is responsible for the administration and service of DHIA programs to dairy farmers within their service area. For more information, please write or call the appropriate office. If you are not sure who to contact, call DRMS at 919-661-3100 (Raleigh) or 515-294-2526 (Ames).

**DHIA Service Affiliates Serviced by DRMS**

- **Arizona DHIA, Inc.** (480) 894-0156
  2465 W 12th Street #1
  Tempe, AZ  85281

- **California DHIA** (877) 225-3442
  150 Clovis Ave., Ste 102
  Clovis, CA  93612

- **Dairy Herd Analysts** (702) 257-3442
  P.O. Box 204
  La Salle, CO  80645

- **Dairy Lab Services, Inc.** (800) 747-7421
  5105 Wolff Rd.
  Dubuque, IA  52002-2564

- **Dairy One** (800) 344-2697
  730 Warren Road
  Ithaca, NY  14850-1293

- **DHI Cooperative, Inc.** (614) 545-0460
  1224 Alton-Darby Rd., Ste A
  P.O. Box 28168
  Columbus, OH  43228

- **Heart of America DHIA** (800) 698-2634
  628 Pottawatomie
  Box 3700
  Manhattan, KS  66502

- **Idaho DHIA** (208)733-6372, ext 104
  1182 Eastland Drive North, Ste A
  Twin Falls, ID  83303

- **Indiana State Dairy Assoc., Inc.** (800) 973-5753
  Poultry Science Bldg., Rm 120
  125 S. Russell Street
  West Lafayette, IN  47907-2042

- **Lancaster DHIA** (717) 665-5960
  1592 Old Line Road
  Manheim, PA  17545

- **Louisiana DHIA** (225) 578-2214
  2288 Gourrier Drive
  Baton Rouge, LA  70820

- **Mid-South Dairy Records** (417) 831-6931
  1551 N. National
  Springfield, MO 65803

- **Minnesota DHIA** (763) 682-1091
  307 Brighton Ave. S.
  Buffalo, MN  55313

- **North East Texas DHIA** (903) 725-7043
  6784 Magnolia Road
  Gilmer, TX  75644

- **NorthStar DHI Services** (800) 631-3510
  Box 23158
  Lansing, MI  48909

- **Puerto Rico DHIA** (787) 796-4500
  P.O. Box 430
  Dorado, PR  00646-0430

- **Southeast DHIA** (352) 392-5592
  P.O. Box 142460
  Gainesville, FL  32614-2460

- **Tennessee DHIA** (865) 974-7289
  University of Tennessee
  114 McCord Hall, P.O. Box 1071
  Knoxville, TN  37901-1071

- **Texas DHIA, Inc.** (254) 968-6529
  2274 North US 281
  Stephenville, TX  76401

- **Tulare DHIA** (559) 686-6173
  800 Commercial Ave.
  Tulare, CA  93274

- **United DHIA** (540) 552-2541
  2300 Litton-Reaves Hall
  Blacksburg, VA  24061

- **Vermont DHIA** (800) 639-8067
  226 Holiday Drive, Ste 3
  White River Junction, VT  05001