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Dairy Update

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DOCUMENTS

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USE YOUR MINNESOTA DHI RECORDS

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USE YOUR DHI RECORDS

- * Produce more milk from feed.
- * Select the right animals for breeding a better herd.
- * Make more precise management decisions.
- * Cull unprofitable cows.
- * Develop herd health programs.
- * Evaluate production cost and profits.
- * Sell dairy animals for more money.
- * Achieve good reproductive performance.
- * Improve milk quality.

Dairy cow profitability is affected by production level. Nearly all herds can achieve higher production. The genetic potential of all cows in the herd is seldom challenged.

Where do the problems exist and how can improvements be made? Amount and quality of feed provided, poor reproductive performance, too much mastitis, and poor growth of heifers are specific areas where improved management frequently results in more milk and improved profitability.

This publication is intended to help you locate and interpret information in your DHI records, information that will help answer the many questions frequently asked regarding management of the dairy herd.

The HERD SUMMARY and LACTATION REPORT forms are illustrated in condensed form on page 2. They have been divided into sections (A through Z). Refer to the section indicated to locate specific information in your DHI records.

- Q. What management factors are most likely to limit herd average production?
- A. Herd average is influenced by many factors. Production in many herds can be increased by:

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MINNESOTA
DAIRY HERD IMPROVEMENT
HERD SUMMARY

J. William Judge
WILLIAM JUDGE
EXTENSION DAIRYMAN

Summary table with columns: DATE, LAB, BREED, MILK, FAT, PRO, etc.

PRODUCTION, INCOME AND FEED COST SUMMARY. Table with columns: DESCRIPTION, SAMPLE DAY AVG PER COW, DHI ROLLING HEAD AVG PER COW.

SAMPLE DAY FEED. Table with columns: FEED TYPE, LBS, PERCENT, etc.

SUMMARY OF COWS NOW IN HERD. Table with columns: LACT NO, NUMBER COWS, MILK, \$ VALUE, INDEX, AVERAGE AGE, % IDENTIFIED.

CURRENT SCC EVALUATION. Table with columns: LACT NO, NUMBER COWS, PERCENT COWS BY LINEAR SCORE.

COWS MILKING ON SAMPLE DAY. Table with columns: LACT NO, NO COWS, PEAK MILK.

YEARLY SUMMARY. Table with columns: LACT NO, NUMBER, MILK, FAT, PRO.

AVERAGE SIRE PREDICTED DIFFERENCE. Table with columns: SIRE, NUMBER, MILK, DOLLAR.

REPRODUCTIVE SUMMARY. Table with columns: PREGNANT COWS, POSSIBLY PREGNANT, PROBLEM COWS.

DAILY HERD TOTALS. Table with columns: DHI MILK, MILK SOLD, % SOLD.

SAMPLE DAY PRODUCTION. Table with columns: SAMPLE DATE, TOTAL COWS, % IN MILK, MILKING COWS ONLY.

MINNESOTA DAIRY HERD IMPROVEMENT DHI 206 12/83

LACTATION

LACTATION table with columns: PERMANENT IDENTIFICATION OF COW, COW'S SIRE, LAST MILK LBS, SAMPLE DAY DATA, BIRTH NAME, AGE AT CALVING, DAYS DRY, DATE CALVED, DUE DATE, LACTATION TO DATE.

- Shortening the calving interval. Improve heat detection and conception rate; both should be 60% or higher. Reduce average days to first breeding to 50 to 75 days.
- Reducing mastitis losses. Improved milking management, equipment and sanitation can result in 90% or more of cows in the negative groups (linear scores of less than 5).
- Providing enough energy and protein for the milking herd. Energy and protein indexes should be in the 100 to 120 range. Be sure your forage feeding is accurately reported.
- Reducing dry days. With calving intervals below 13.0 months and good feeding cows should milk high enough in late lactation to keep dry day averages below 60 days.

Q. Why did my daily production drop so much this month?

A. How many fresh cows were there? Check the average days in milk (Sec. R) this month (top line) with the previous month (second line). Average daily production is expected to drop considerably if the average stage of lactation (DIM) advances by 15 days or more.

What percentage of cows is in milk this month compared to last month (see Sec. R)? Are the milking cows only maintaining their expected level of production?

Check the energy and protein indexes (Sec. B-daily average column) this month and compare them with the month previous. If either value is lower, this could explain a drop in production.

Be sure that your sample day results are representative of what the herd is actually producing by comparing the DHI milk production against milk sold (Sec. J). Wide discrepancies are infrequent, but occasionally milk meters, or other equipment, fail to function properly and the DHI estimates may be far above or below the actual milk produced. When making this comparison, be sure to account for milk used in the home, fed calves, or withheld from the tank because of treatment.

Temporary environmental factors can have a tremendous influence on production for a few days. Examples are: (a) extreme hot weather and high humidity, (b) extreme cold weather combined with high winds, (c) muddy lots, and (d) infestations of flies and other insects.

QUESTIONS RELATED TO FEEDING

Q. Are my cows receiving enough feed?

A. The amount of feed (as fed) the average cow consumed on sample day is listed by type of feed (Sec. D). The quality (energy and protein), dry matter, and price are also shown.

Forage dry matter per 100 lb of body weight (Sec. B) indicates the level of forage feeding. Values between 1.5 and 2.5 are normal. Lower values are associated with heavy grain feeding. When forages are in short supply

and/or high priced, forage intake may be limited intentionally. High values reflect a low level of grain feeding. Double check forage intake if your values fall outside the normal range of 1.5 to 2.5. Be sure that the average body weight estimate (Sec. T) reflects the size of the average cow in your herd.

The level of grain feeding is indicated by the pounds of milk per pound of grain dry matter (Sec. B). Values of 2.5 to 3.5 reflect normal grain feeding levels. Lower values occur when: (a) forage is limited, (b) your breed produces higher fat content milk (Guernsey and Jersey), (c) milk production per cow is low, and (d) there is an excess of grain fed. High values are associated with high quality forage feeding or a need for more grain. This does not indicate if distribution of grain is correct (Sec. V).

Q. Is adequate energy being provided?

A. An energy index (Sec. B) of 100 to 110 is recommended. Values over 130 indicate overfeeding or incorrect reporting of feed intake (Sec. D). When a high percentage of the herd is just fresh and producing at their peak, an energy index of less than 100 might occur since it is difficult to meet the demands (cows normally lose body weight during this period). A rolling yearly herd energy value below 100 suggests that cows are underfed and the feeding program should be adjusted.

Q. Are the protein needs being met?

A. A protein index (Sec. B) of 100 to 110 is recommended. Avoid values below 100 since a shortage of protein will limit production. If the protein index is above 120 (unless the forage ration is mostly legume) reduce protein in the grain mix (see recommended protein percent for grain mix, Sec. D) or reduce top feed protein supplement.

Check Section V (and the following question) to be sure top producing cows are not limited by a reduction of the protein supplement in the grain mixture.

Q. How do I determine the right amount of grain and protein needed by each cow?

A. The pounds of grain and protein recommended for each cow are listed on the Lactation Report (Sec. V). See the back of the Lactation Report to determine how each value is calculated. Compare the recommended grain and protein pounds to the amount being fed. If the protein is not toppedressed, add the pound(s) of protein supplement to the recommended amount of grain to meet the energy needs of the individual cow. NOTE: Cows with blank grain recommendations may need added energy, but insufficient information was available to make a recommendation (i.e., a cow too fresh to test).

Cows with a number in the pounds protein column are short of protein (sufficient protein is not being provided by the forage and grain mixture). This shortage can be corrected either by toppedressing that amount of protein to those specific cows or increasing the protein level in the total grain moisture. NOTE: The percent protein associated with the additional pounds recommended is indicated in the heading of the protein column (Sec. V).

For herds not topdressing protein, a statement is printed in the Sample Day Feed block (Sec. D) suggesting the level of grain feeding and percent crude protein necessary to meet the requirements of cows producing at the level indicated. Feeding at this level meets the nutrient requirements for 75% of the milking cows in your herd (average production of the top half).

Q. How are the feed prices calculated?

A. Feed prices for the forages, grain, and protein supplement should reflect current market prices adjusted for dry matter and quality. Feed prices are reported on a wet (as fed) basis (Sec. D). If prices are unknown or difficult to estimate, they need not be reported on the barn sheet. The computer will calculate a price, using a current statewide market value for shelled corn (energy) and soybean meal (protein), with each feed adjusted for dry matter content and quality.

Q. How efficient is my feeding program?

A. Income over feed cost and feed costs per 100 lb of milk values for the average cow are shown in the lower portion of the Production and Income Summary (Sec. C).

Feed costs typically account for 50-55% of the gross value of milk. Non-feed cash expenditures (i.e., drugs for treatment, sanitizers, semen, milk hauling, etc.) account for another \$150 to \$200 per cow annually.

Be sure to consider the herd's stage of lactation (days in milk, Sec. R and X) as well as the current milk and feed prices because they have a marked influence on these economic values.

QUESTIONS RELATED TO REPRODUCTION

Q. How can reproduction records be used to improve herd average production?

A. Reporting all heat and breeding dates provides the necessary data for you to analyze strengths and problems in maintaining good reproduction.

Q. What's necessary to maintain a calving interval of less than 13 months?

A. Average day to first breeding should be in the 50-75 day range. Good heat detection (60% or better) and a high conception rate (60% or better) combine to keep calving intervals short.

Q. What are reminders for cows to watch for heat?

A. The pocket size action lists of cows to breed, pregnancy check, dry off and calve are available at a small additional investment of 1 cent per cow per sample day. The "Due Date" column on the Lactation Report has more reminders. Cows listed as "OPEN" are more than 60 days past calving with no breeding date reported. Cows marked "BRED" have been bred in the last 90 days but have not been pregnancy checked. They should be watched for heat. Cows checked pregnant or more than 90 days since last bred have their due date listed.

OTHER MANAGEMENT QUESTIONS

Q. What is the "average age" of the typical herd?

A. The "average age" at last freshening, in years and months, is shown for both first lactation cows and the entire herd (Sec. E). Typical age at freshening for all cows in DHIA herds varies from four years to four years and four months.

The average age of cattle in the herd is a function of: (a) age at first calving, (b) how much culling occurs, and (c) what animals are culled. Most dairymen find it economically advantageous to promote rapid growth and freshen heifers at 24 months of age; certainly no later than 26 months.

Q. I don't have much clinical mastitis. Why are so many cows in the positive (5 or higher) classification?

A. Subclinical mastitis (no swollen quarters or abnormal milk) causes production losses. A good goal is to have 90% or more of cows with linear SCC scores of less than 5. An increase of 1 in linear score (e.g., from 3 to 4, or 5 to 6) causes an average loss of 1.3 lbs of milk per day in second calf or older cows, half that much in first calf heifers.

Q. How important is "length of the dry period?"

A. See the "days dry" area (Sec. K). If cows are to milk for 10 months and freshen annually, the days dry should average 50 to 60 days.

Because some cows have a long calving interval, and others may freshen in less than a year (with a short dry period), average days dry can be misleading. All cows (except those that abort or calve early) should have a dry period of at least 40 days. The rest period is necessary to allow the milk secretion cells in the udder to prepare for the following lactation. A reasonable goal is to have 90% of the cows with a dry period from 40 to 70 days.

When too many cows have a dry period over 70 days long, look for poor reproductive performance (long calving intervals) or poor feeding programs (short lactations) as a possible cause of the problem.

The best date to turn cows dry is approximately 50 to 60 days prior to their "due date" (Sec. W). Cows producing at a low level (Holsteins below 20 lb or so daily), both this month and last month (Sec. U), should be considered for drying off. Continued milking of low-producing cows frequently results in poor milking procedures and increased mastitis.

Q. What is a normal change in "Sample Day Milk" from the "Last Milk Lbs" (Sec. U)?

A. Average drop in production after peak is about 10% per month. If the interval between consecutive sample days is either long or short, the expected drop will be increased or decreased proportionately. First lactation cows are usually more persistent and the average drop in production after peak is about 8% per month.

- Q. How do "cows entering or leaving the herd" affect production (Sec. H)?
- A. Normal herd replacement is from 20-40% per year. If limited replacements are available, reduced culling of low producers or unsound cows lowers production. If the number of first calf heifers leaving the herd is large (greater than 20%), look for management problems (e.g., mastitis, injuries) or sire selection problems which cause higher culling of heifers.
- Q. The "Production Index" (Sec. Y) on many of my better cows drops throughout their lactation. What could cause this?
- A. High index in early lactation indicates good production potential. Insufficient feed (energy or protein), milking management problems, or inherited lack of persistency can cause cows to drop in milk production faster than normal.
- Q. How do I determine which cows to cull?
- A. Culling results from continuous management decisions on an animal's present and future profitability. Making a list of culling candidates is recommended. The production level, along with your knowledge of the physical condition (legs, udder, etc.) that may influence a cow's usefulness, must be considered. Consider these factors when making a culling list:
- (a) Involuntary (forced) culling of cows because of physical unsoundness or other functional problems must rank highest in the priority of choosing cows to be culled. This is unfortunate since this group often includes some of the high producing and very profitable cows. If fewer unsound cows must be culled, more unprofitable (or low income) cows can be culled.
 - (b) Cows in the lowest 20% of the herd based on current lactation performance (production index well below 100 - Sec. Y).
 - (c) Cows not pregnant after 120 days in milk (days in milk - Section X and due date - Sec. W). If the cow is producing 20% or more above the herd average (production index of 120 or more - Sec. Y), this time can be extended to 150 or 160 days. Consider length of dry period with due date to determine future profitability.
 - (d) Cows that have or have had mastitis (Sec. V) and require continuous treatment or are extremely slow milkers.
 - (e) Cows that have a negative or small positive income over feed cost (Sec. V) and aren't due to calve for 90 days or longer (Sec. W), especially when their production index is below average (Sec. Y).
- Cows on the culling list should be removed when they become unprofitable (low income over feed cost - Sec. V). If market prices are good, feed supply is short, and/or replacement heifers are ready to enter the herd and space is limited, moderately profitable cows on the culling list may be culled immediately.

MINNESOTA DHI SCORECARD

1984 MINNESOTA DHI SCORECARD

MGT. FACTOR	MINNESOTA HOLSTEIN HERD AVERAGES, LBS. MILK						YOUR HERD
	<10,000	12-13,000	14-15,000	16-17,000	18-19,000	>20,000	
MILK, LBS.	9,051	12,540	14,506	16,480	18,381	20,717	12,500
AVG. PEAK, LBS.							
1ST LACTATION	39	48	54	59	65	72	65
OTHER COWS	50	63	71	79	87	96	63
% COWS CULLED							
ALL COWS	31	33	34	36	39	44	15
GRAIN, LBS. (AVG MILK / MILK/LB GRAIN)	4,200	5,052	5,331	5,775	6,182	6,806	6,600
MASTITIS, % SCC POS.	51	37	31	25	22	19	65
REPRODUCTION							
HEAT DETECTION INDEX	34	42	45	50	52	55	43
AVG. DAYS, 1ST BREEDING	95	89	86	85	84	83	102
% DRY OVER 70 DAYS (NO. >70D/TOTAL)	47	35	30	24	19	17	6
GENETICS, PD\$							
SERVICE SIRE	60	70	75	77	84	87	71
1ST LACTATION	-4	6	11	17	29	37	32
SIRE IDENTIFICATION							
1ST LACTATION, %	40	46	66	81	91	92	96
REPRODUCTION CONCEPTION RATE	52	57	57	58	60	61	39

The scorecard shows management factors that are closely related to herd average milk production. It points out a herd's strong areas and shows those areas which need improvement to increase production. A blank scorecard is provided for your use.

The completed scorecard illustrates its use. The herd averages for each management item have been written in the right hand column. Then an X for

that average has been marked in the area on the line representing that management item. An X to the right of the middle shows better than average management, to the left indicates problems. For example, the illustrated herd: 1) had used very good bulls to sire the first lactation heifers, but is now using sires a little below average; 2) has first calf heifer milk peaks above average (those better sires) but below average for older cows; 3) has Somatic Cell Counts which are very high and causing significant milk losses; 4) has conception rate much below average and needs improvement; 5) has average days to first breeding much too long with heat detection a little below average; and 6) very few cows were culled. The sire identification at 96% and only 6% of cows dry over 70 days are excellent.

1984 MINNESOTA DHI SCORECARD

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OTHER COWS	50	63	71	79	87	96	_____
% COWS CULLED							_____
ALL COWS	31	33	34	36	39	44	_____
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MASTITIS, % SCC POS.	51	37	31	25	22	19	_____
REPRODUCTION							_____
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AVG. DAYS, 1ST BREEDING	95	89	86	85	84	83	_____
% DRY OVER 70 DAYS (NO. >70D/TOTAL)	47	35	30	24	19	17	_____
GENETICS, PD\$							_____
SERVICE SIRE	60	70	75	77	84	87	_____
1ST LACTATION	-4	6	11	17	29	37	_____
SIRE IDENTIFICATION							_____
1ST LACTATION, %	40	46	66	81	91	92	_____
REPRODUCTION CONCEPTION RATE	52	57	57	58	60	61	_____

← PROBLEM AREA ————— GOAL —————→