Alberta Dairy Management
PREPARED FOR AND DISTRIBUTED BY THE DAIRY EXTENSION ADVISORY GROUP

Culling Records

Culling involves an ongoing process of gathering facts and making decisions about the present and future profitability of each cow in the herd. Records are essential in this process and can help in identifying cows that are unprofitable.

Factors to be considered in culling include:

- cow factors;
  - · age of the cow,
  - · stage of lactation,
  - · health status and history,
  - · level of milk production,
  - · current reproductive status,
  - · past reproductive performance;
- herd factors;
  - · quota production requirements,
  - · availability of replacements,
  - · slaughter price culled cows,
  - · value of the milk.

Involuntary and Voluntary Culling

Culling can be either involuntary or voluntary. Involuntary or *non-selective* culls are usually the result of management failure or disease. These are the cows that must be sold due to problems (e.g. infertility or mastitis). In contrast, voluntary or *selective* culls are those removed from the herd due to low production, or dairy sales. A high percentage of selectively culled cows is required to maximize profits. Regardless of the soundness of the breeding program, unprofitable cows will enter the herd. Long-range production goals and maximum herd profits can only be reached through well thought out breeding and culling programs.

Cow Disposal Reasons

A breakdown of the reasons for culling dairy cows in Alberta is shown in table 1. Herds enrolled on DHI receive an ANNUAL SUMMARY OF DISPOSAL REASONS report. Other herds will have to try to determine their culling reasons, relying on figures from records available on the farm. The goal would be to have high numbers in the low production, dairy and export categories, as these are the reasons for voluntary culling.

Culling Reason	%
Low Production	23.2
Infertility	17.9
Mastitis	12.0
Sold for Dairy	10.0
Udder Breakdown	6.8
Feet & Legs	5.0
Sickness & Disease	4.6
Old Age	3.1
Temperament	1.8
Slow Milker	1.7
Export	0.2

Table 1 : Disposal reasons for Alberta herds enrolled in DHI, 1992.

Most of the cows that are culled should be from the bottom half of the herd. However, as table 1 shows, 2 out of 3 cows culled in Alberta fall into the involuntary categories.

Culling Records

Making monthly lists of candidates for culling is very helpful in decision making. DHI provides its subscribers with data from which monthly lists of candidates may be compiled. These monthly lists would provide a regular and systematic means of evaluating and identifying potential culls. The following are nine list possibilities:

LIST 1 : Cows not pregnant after 120 days in the current lactation.

How many times should an apparently sound animal be bred, before she can be justifiably considered infertile? How many times should a cow be bred before she becomes unprofitable to keep? These are difficult questions to answer. Some producers will not breed any open cow after 150 days in milk, while other producers continue to breed cows well over 250 days after calving.

The highest economic return is achieved in herds that vary the allowable time of breeding according to the cow's production level. Table 2 shows some guidelines regarding the percentage increase in production necessary to economically justify another breeding.

if production exceeds herd average by: %	then breeding is justified beyond: DIM
7.5	120
14.0	150
19.0	180
24.0	210

Table 2 : Guidelines for delayed breeding of individual cows when production exceeds herd average.

LIST 2 : Cows that will be dry for more than 70 days (or produce very little for a extended period of time).

LIST 3 : Cows with serious health problems from which they are unlikely to recover.

LIST 4 : Cows with chronic infections that require constant treatment (such as clinical mastitis).

LIST 5 : Cows with high somatic cell counts.

LIST 6 : Cows that have serious permanent physical defects that affect production, or cows that require special care.

LIST 7 : Cows that are slow milkers, have poor dispositions or other characteristics that affect ease of care, time or milker safety.

LIST 8 : Cows with low production, including:

- Cows in the lowest 20 percent of the herd, based on the current lactation;
- early lactation cows not milking enough to pay fixed and variable costs;
- cows that have held the lowest ranking in the herd in the past.

LIST 9 : Cows that will not contribute to improving the future genetic level of the herd.

Appearing on one of these lists is not necessarily an indication that a cow should be culled immediately, or even in the near future. This is especially the case with cows on lists 1, 2, 8 and 9. These cows should be milked as long as they are profitable, or until they can be replaced by more profitable animals.

Using Breed Class Averages for culling

It is nearly impossible to make culling decisions based on individual milk yields and milk component levels. Consider the production information for the 5 cows shown in table 3. Different ages at calving and number of days in milk prevent accurate evaluation based on raw production data.

The Breed Class Average (BCA) index provided by the DHI Cow Production Monthly Report facilitates comparisons between individual cows in a herd. Adjustments are made according to the breed of the cow, her age at calving and her month of calving.

The best way to evaluate the performance of a cow, relative to herdmates, is the use of BCA deviations. A BCA deviation is the difference between a cow's projected or actual BCA and the herd average BCA. The difference is expressed as a positive (+) or a negative (-) deviation. High positive deviations identify genetically superior cows. Conversely, high negative deviations suggest candidates for culling.

For herds not enrolled on DHI, without access to this data, culling for production becomes a difficult process. Due to the complexity of culling decisions, informed producers have a definite advantage over those with no records.

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	Age at calving		--------- Milk ---------			---------- Fat ----------		
cow #	YRS-MOS	DIM	kg	BCA	dev	%	BCA	dev
1	3-03	214	20	170	- 1	3.9	174	+ 6
2	3-05	98	30	176	+ 5	2.8	157	- 11
3	2-11	124	17	141	- 30	3.6	136	- 32
4	5-07	98	37	209	+ 38	3.4	196	+ 28
5	4-01	234	16	158	- 13	4.3	179	+ 11
BCA Averages				171	.....		168	

Table 3 : Test day information for five selected cows.