

Selecting and Culling Dairy Cattle

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Selecting standards

Selecting good dairy animals is easier today, thanks to U.S. Department of Agriculture Sire Summaries and Dairy Herd Improvement (DHI) production records.

We now have a uniform sire summary for the entire dairy industry. All sire records are produced by the regular DHI testing programs. The careful sire selections through the DHI program gives the dairy industry the most accurate production predictions ever available.

Computers permit record refinements that consider these factors: number of daughters, number of herdmates, distribution of daughters among herds, the number of records per daughter, days in milk for cows with incomplete lactations, the herd genetic level, regional differences in age, and regional and seasonal differences in breed averages.

Here's an explanation of some of the most important data in a sire summary that you might receive from your semen supplier or see in dairy magazine bull proofs:

Daughter average is the average production of the sire's daughters on a 305-day, mature-equivalent basis, and milked twice daily (305 2X ME).

Predicted difference (PD) is the best available estimate of milk production, fat production, type conformation, and profit from daughters of the bull. It is expressed in pounds or an index number above or below the breed average for each trait.

PD\$, a special predicted difference value, uses data on milk, fat, and the price of milk to estimate the overall

value of the bull's offspring. It is the most useful value in selecting herd sires for commercial herds.

Repeatability measures the degree (0 to 100) of confidence that we have in the predicted difference. The repeatability increases as more daughters and more herds are represented.

A high repeatability means the predicted difference is a good indication of the value of the bull's offspring in most herds. A repeatability value of 60% is three times as reliable as one of 20%.

You can use sire summaries in planning matings for maximum genetic improvement by following these guidelines:

1. Establish realistic goals for your breeding program—for example, "I want new heifers to produce 200 pounds more milk than my second lactation cows."
2. Rank all available bulls on PD\$ for income, from high to low.
3. Consider the price of each bull's semen.
4. Rate bulls on their transmitting ability or PD for other economically important traits, such as type in purebred animals.
5. Select a small group of bulls (considering steps 1 through 4) with repeatabilities of at least 70% for use on most of the herd.
6. Use unproven young sires cautiously, on less than one-third of the herd.

By using artificial insemination, one bull can sire several thousand daughters. This permits using the very best sires. Every dairy operator should use DHI testing to provide more data for

earlier, more accurate sire proving.

A long, productive life is important for dairy cows. When you work for this longevity, it's important to avoid selecting animals too heavily on their conformation or type. Selecting for most type traits actually selects *against* milk production.

High production as a 2-year-old is the best indicator of the female's longevity. Udder support, udder depth, and feet and leg characteristics may contribute to longer herd life.

Cow index. Like the PD on a bull, this is an estimate of a cow's genetic merit. The cow index compares production of the cow against production of her half sisters (cows sired by the same bull). As the cow completes more lactations and as more half sisters are born, a cow's index becomes more accurate.

Mating a cow with a high cow index to a bull with a high predicted difference should produce superior offspring. Because there is some variation in the genes of the offspring, there will be some below-average animals born, but most will be above-average.

Culling standards

Some cows in the herd may not be "carrying their weight" in paying the bills. It takes too long to improve their offspring through outstanding bulls, so we must cull them.

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The following is a 16-point guide for culling cows. *Give this test to every cow in your herd.* If you have several cows with low scores, they're the ones to cull first.

Check these 16 statements "Yes" or "No" for the cows under consideration. If you check "Yes" to all questions, this indicates culling. "Yes" answers to questions in **bold type** are strong indications that the cows should be culled.

Yes No

1. **If she is a first-calf heifer, is her projected actual production less than 70% of my herd average?**
2. **Has she produced less than 130 pounds of butterfat in the first 4 months of her lactation?**

3. **Is her 305-day actual production below her dam's actual production for any respective identical lactation?**
4. **Will she be dry 6 months or more?**
5. Is there a replacement cow available?
6. Is she an old cow?
7. **Does she have a record of mastitis?**
8. **Does she have a record of breeding troubles?**
9. **Did she have complications after last calving?**
10. Does she have a record of milk fever or ketosis?
11. Is space needed for fresh heifers?

12. Is she below the average conformation type of my herd?
13. Is she a slow milker?
14. Will she calve when I need the milk?
15. **Will it pay me to replace this cow with a higher producer?**
16. **Will it pay me to remove this cow without replacing her?**

Don't take question 16 too lightly. Many farmers can ship exactly the same amount of milk after selling the worst 10% of their cows without replacing them. They can feed and house the remaining cows better, and they have more time to manage a better herd.

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