

Veepro dairy management



The crucial importance of strong legs

To the modern dairy cow strong legs are of vital importance. They are one of the factors that determine whether the cow has a long productive life or not. Inferior quality of legs, including the claws, is one of the main reasons why cows are culled at an early age. Better breeding, housing, rearing and management are effective ways to decrease leg and foot problems.

To dairy farmers throughout the world legs and feet are a primary concern. Classifiers and judges consider their quality to be one of the most relevant traits. Cows that receive low scores on legs do not take any prizes. The various (international) breeding programs recognize the importance of strong legs

and feet as a significant part of the conformation score. And they belong to the main supports of the 'durability index'. Dairy farmers prefer herds that require little attention. That is why the bulls they use are heavily selected for durability. This trait is an indicator for easy, trouble-free cows.

Intensive farming

Modern intensive dairy farms use large herds in which genetic progress has led to a continuously increasing milk production. Intensive dairy farming also requires modern methods of housing. Concrete floors or similar surfaces put a strain on legs and feet and may cause problems. These

disorders are the main reason why dairy cows are culled at an early age. Even though this aspect gets a lot of attention, it is a fact that legs and feet will always remain a substantial ground for cows not 'growing old'. Management, however, has definitely some facilities to minimize leg problems. Breeding and upgrading offer

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many opportunities to improve the herd level on the quality of legs and claws. A vital activity is the selection of better bulls. Breeding values show that different bulls can achieve much progress in the quality of legs and in durability. But on two aspects a comment

must be given. Firstly, the results indicated are expected average results for the bull's daughters. Unfortunately breeding knows one problem: average daughters do not exist! Progress achieved in some cows is not as much as in other cows. Secondly, the bull transmits only fifty percent of the final result. The other fifty

percent is passed on by the mother. Classification reports, breeding information and the farmer's own observations of the cow can be as important as or more important than the breeding values of the bull selected.

Complexity

In breeding, the improvement of legs and feet

provides a rather complex matter.

There are many more conformation traits that affect the strength of legs. It is of great importance for the dairy farmer to be able to make a correct translation of the breeding values and indexes of sires.

Scores for quality of legs

When looking at the breeding values of the sire to be used, we first check all the information available on the legs. Figure 1 shows an overview based on the ranking by a classifier. How are the various scores recorded?

Hock to hock position



Total score

When a classifier has scored the cows they receive a total judgment. These scores vary between 71 and 100, a score of 80 being the average. The score is then translated into a bull's breeding value for quality of legs. A breeding

value of 100 indicates that the bull's leg traits have an average breeding value, resulting in daughters with average quality of legs, i.e. an average of 80. If the breeding value is higher, the daughters will have a score over 80. This total score does not tell us anything about the legs of the daughters. They may be straight and steep, but chances are even that they are bent. Conclusion: always check the underlying breeding values.

Leg set – rear view

When judging the leg set – rear view the classifier examines the ability of the cow to bear her weight evenly on all four 'sound' claws. If this trait shows any deviations (hock to hock position), these might be due



The position of the thurl is important

to reduced solidity (health) of the claws. A leg set showing hock-in may be related to painful claws. Also the cow's build and the position of the

A look behind the figures

A bull with a high score in the top bar is not by definition able to genetically improve the legs in daughters of cows with moderate legs. Here is an example from the breeding values of a bull.

	quality of legs total	leg set rear view	leg set side view	foot angle	locomotion
Bull	114	110	94	106	108

At first sight this bull has a high breeding value of quality of legs. And of course this is true. But when a dairy farmer decides to mate this bull to a cow with a rather steep set and moderate legs, the result may be very disappointing, because the bull too transmits steep legs (the score of the bull for Leg Set – Side View is only 94).

In other words, we must interpret all information available in the correct manner. Only then will a dairy farmer's selective breeding program upgrade the quality of legs of his cows.



An optimal set for the ideal distribution of weight on the feet

thurl may be the cause of a deviation.

Leg set – side view

The trait leg set – side view has an optimum feature: when viewed from the side the optimal set for the ideal distribution of weight on the feet. With this set there is much chance of the claws being used fully and proportionally, so that there is less wear. Foot angles that are too steep will expose problems when cows grow older and heavier. Those problems become visible in swollen tarsal joints and

claw disorders. The locomotion of the cow decreases. Legs that are not straight may lead to an increase particularly in the number of pressure points in the weakest part of the claw. This of course does not stimulate the cow's locomotion.

Foot angle

The desirable foot angle at a normal set is 45°. It is mainly the leg set that determines this angle. A cow with moderate locomotion and steep legs usually has a steep short foot that hardly grows

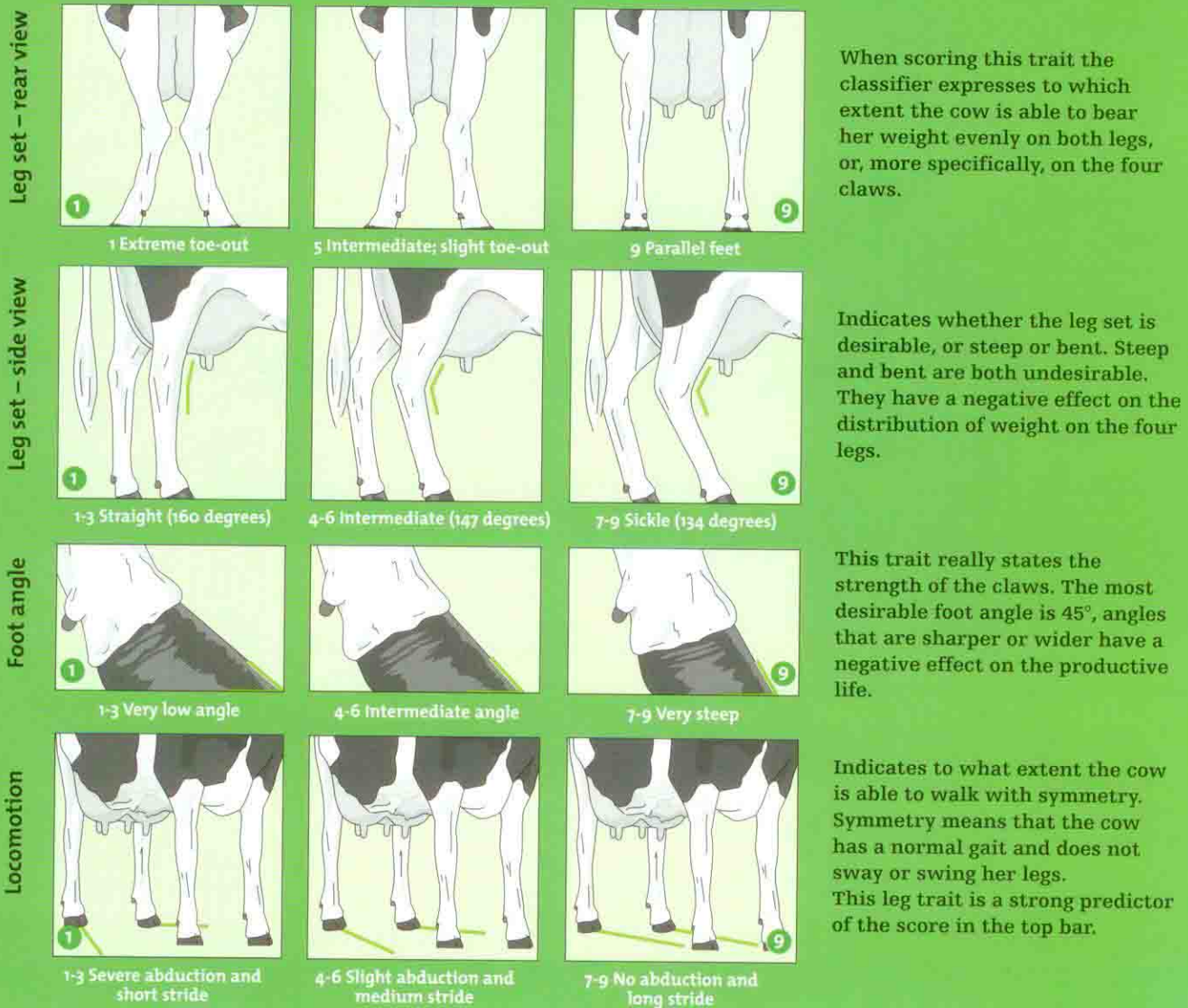
or does not grow at all. As these cows grow older and gain weight the problems are likely to increase. Cows with bent legs often have a long flat foot.

Locomotion

Quality of legs is about locomotion really. No dairy farmer will complain as long as cows move easily. To get a good idea if cows will be able to move well in future it is important to include the other leg traits such as Leg Set – Rear View and Leg Set – Side View and the final score for locomotion.

Figure 1 Total score quality of legs (appreciation)

Here the classifier makes a score on the legs of the bull's daughters (score 1-9)



Housing and feeding from puberty till calving down

If dairy cattle were housed on a more natural surface all year round, leg disorders would be at a minimum. Also cattle feed of the year 2006 is of such quality that leg problems are almost bound to occur. Now, if the housing on the farm is not optimal and the ration is not sufficiently balanced it is obvious that leg problems will increase.

The housing of dairy cattle will have to be high-quality in order to keep leg problems down to a minimum. Cows need ample room to lie down, a comfortable place to rest and sufficient space to

get up smoothly.

It will be clear that the good care must continue after the milking period. Farmers can also do a lot in the period when the animal is growing to maturity. Apart from sufficient energy and rough proteins, minerals and vitamins are essential for fast-growing young stock to build up strong joints, particularly the leg joints.

Complex

Is improvement complex? Yes, but that's no reason to do nothing! It will be obvious that improving the legs of dairy cows is not a



A comfortable cowbox is important

Free calves makes muscles and tendons stronger



matter easily accomplished. As for housing, the farmer will have to be prepared to make investments. During the rearing period it is important that calves are trained for developing and building up their joints and muscles.

Select bulls

From the breeding point of view the farmer has to be aware that he must look at each cow individually in order to select the right bull. But he must also realize that every bull transmits 'quality of legs' in different ways. So, there are certainly opportunities to find satisfactory solutions.

Playing ball in the calf pen

Paying attention to the legs of adolescent calves and yearlings is a matter of major concern for a dairy farmer. Their frames develop terribly fast and proper training of muscles and joints is no luxury. Individual calf hutches are too small. A calf needs ample room to be able to move and jump freely. Farmers who put a playing ball in the group pen see their calves leaping happily and making funny caprioles. It makes the muscles and tendons stronger. Although no scientific research has proved this yet, these movements will almost certainly contribute to a high-quality and long lasting productive life of the cow when she is required to put up a good performance.



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Information centre for Dutch cattle

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