

Healthy Cow Guideline

Probably the best standards for keeping cows happy and healthy

For: All persons worldwide involved in keeping dairy cows.

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INTRODUCTION

In this document you can read how to manage and house dairy cows.

The Healthy Cow Guideline lists the basic needs of a dairy cow based on best management practices that have been established over time by the best dairy farmers in more than 50 countries, backed up by scientific research and economic results.

If you let cows happily produce 4 or 5 lactations instead of 2.5, you and the world gain the following:

- the cows generate much more revenues. In most systems, cows need their first lactation to pay for their costs of raising or buying.
- a lot less energy and assets are being put into raising young stock. This reduces the carbon footprint and the release of greenhouse gasses.
- milk including animal protein is produced in a highly efficient manner. This again reduces both costs and the carbon footprint.

GUIDELINE FOR KEEPING COWS HEALTHY

To keep cows healthy, you have to do the right things right, at the right moments. Everything you do is aimed at ensuring that the basic needs for every cow are fulfilled at every moment of the day. Your focus is on today and on tomorrow, what happened yesterday enables you to learn.

The basic needs for every cow are: feed, water, light, air, rest, space and health. Health is the result of the other needs. But absence of infections, wounds and bruises is also a need on itself.

The basic needs are visualized in the CowSignals Diamond:



How you as a dairy farmer can organize and manage these aspects is described in the text on the following pages.



FEED

- Every cow should have easy access to quality feed for 24 hours per day. Quality feeds means that it should have good taste, the right nutritional values and no mould or heating.
- All cows should be able to eat at the same time. The feeding space for every cow should be the width of their abdomen. An adult lactating Holstein-Friesian cow is 75 cm/30" wide. During dry cow period, this cow needs 85 cm/34" feeding space.
- Deliver fresh feed to all animals at least 1x per day. For lactating cows it is even better to provide fresh feed during every milking time.
When you feed lactating cows once a day, do this at the evening milking time. That way, the cows can eat directly after milking and have plenty of feed available at night and in the early morning.
- Push up feed at least 5x per day and spread it out over all the places where the cows eat.

WATER

- Every cow should have easy access to clean, fresh water. Drinking points should be well dispersed over the barn. Per 20 cows you need 1 drinking trough that is 1.5 m/60" wide, or 2 small high pressure drinkers that deliver 20 l/21 quarts per minute.
- At least 10% of the cows should be able to drink at the same time.
When the ambient temperature is higher than 30° C/86° F: 20% of the cows should be able to drink at the same time.
- Drinkers should be placed as low as possible and not higher than 70 cm. The water level in a drinker has to be more than 8 cm deep for easy and quick drinking.
- Clean drinkers 3 x per week with a brush. Clean all corners, and open the area around the swimmer to clean in there too.
- Make 4 m/13 ft. or wider passages around the drinkers, so that when a cow is drinking, another cow can easily pass.



LIGHT

- For optimal milk production and fertility, cows like to have 16-18 hours of light per day and 6-8 hours of darkness. For dry cows it is the other way around.
- Light means: 200 lux on cow level everywhere in the barn. Dark means: 50 lux or less, everywhere in the barn. You can measure this with a lux meter.
- For proper working comfort, the milkers need 500 lux everywhere in the milking parlour.



AIR

- You want maximum (natural) [ventilation](#), as moisture, exhaled air and gasses need to be removed continuously. On top of this, continuous airflow stimulates drying of the beds and the floors, which reduces [mastitis](#) and claw infections.
- The optimal temperature for lactating cows is 5° to 15° C/40° to 60° F. Below 5° C/40° F cows need extra energy to stay warm. Over 21° C/70° F cows can start showing the first signs of heat stress, depending on the humidity of the air. The higher the humidity, the earlier cows get heat stress.
- If lactating cows have a dry bed and enough feed, -40° C/-40° F is not causing problems for them. Cows that eat less feed, like young stock and dry cows, are more vulnerable to cold temperatures. Freezing can be a problem for water supply and manure handling.
- Keep barns narrow: no wider than 6 rows of beds. And put 2 feeding lanes one on each side so the cows eat in fresh air.
- Keep the sides of barns 4-6 m/13-20 ft. open. Use curtains or windbreak nets as flexible sides, if protection is needed for wind or cold. Keep the sides open as many days as possible.

Put fans on in the collecting yard, milk parlour or milk robot when outside temperature is 18° C/64° F or more. Put fans on in the barn from 21° C/70° F, also at the dry cows and fresh cows! Use water cooling (sprinklers) when temperature goes over 28° C/82° F.

REST

- Provide every cow with at least one soft deep bed, using sand or other soft material as bedding. Clean them at least 3x daily and fill them weekly. This ensures maximum lying time for every cow (14 h per day) and the lowest risk for environmental udder infections.



- Stall design: an adult HF cow is 260 cm/102" long and needs 75 cm/30" head-swing-space to stand up. So in total she needs 335 cm/132" free space without barriers.

As laying place for her body, use a surface of 190 x 125 cm/75" x 49". As neck stop, use a chain with a spring, covered with rubber or a plastic tube. The spring should give the chain 20 cm/8" moving space. As a head stop use a band 1 m/39" above the ground, as far forward as possible.

- Cows should spend no more than 2 hour per day with waiting or milking, also with 3x milking.
- Handle cows quietly by using your body position to move cows. No chasing, shouting or hitting, but walking, talking and touching. Start practising with your young calves.

SPACE

- Cows need enough of good space to rest, eat, drink, walk, milk, show heat, brush and socialize.
- All floors should provide good grip. Use bedding, soft rubber or grooved concrete.
- Ensure cows always have a flight route. In pens with rows of stalls there should be at least 2 cross alleys, even in small groups of 8 cows. Per 20 cows, there should be a cross alley. A cow should never need to walk more than 10 stalls to a cross alley.
- The feed fence must provide all cows maximal access to feed. For an adult HF dairy cow the following dimensions count; max. height of lower bar 53 cm/21"; min. height for upper bar is 160 cm/63"; min. width for the neck in head gates (self-lockers) 22 cm/8.7". In a plank-and-rail system: neck rail position 125 cm/49" high and 30 cm/12" forward from a vertical perpendicular line touching the point of the front claws. The wall or plank against the feed manger should be no thicker than 8 cm/3.2".

HEALTH

- Train your staff in cow observations. Have all your cows carefully observed 2x per day, and checked for signs of good health, good feed intake and no distress. Implement immediate effective reactions when there are signs of disease, poor feed intake and distress.
- Observe cows walking to the parlour 2x per week and give all cows that show a disturbed gait a hoof check. Clean the hooves with water and implement an effective disinfective [foot bathing](#) programme.
- Implement effective bio-security measurements. Eradicate infectious diseases when possible. Use [vaccinations](#) to prevent disease.
- Install and manage a stress free calving line, 3 weeks before until 3 weeks after calving. This consists of 9 m²/100 sq. ft. of straw pen and 85 cm/33" of feed space per cow, and as little social stress, heat stress, feed stress, resting stress, insect stress, etc. as possible. Ensure that all dry cows, calving cows and fresh cows eat enough of the correct ration every day.
- Give every new-born calf 2 litres of fresh colostrum within 2 hours after birth and 10% of its body weight in [colostrum](#) within 12 hours. Implement excellent housing, biosecurity routines and feeding protocols to rear calves with maximal health.
- Use the "power of nature" and milk your cow while licking her calf. Put calf outside calving pen in front of cows head in a box, on top of tasty hay. This will give mother and child the best possible start.
- Train your staff on stress-free stockmanship and quiet cow handling.



Thanks for reading this and good luck with improving your cow barn and/or your management,

**Joep Driessen, DVM,
Founder of CowSignals**

When you are interested in more information and more practical help:

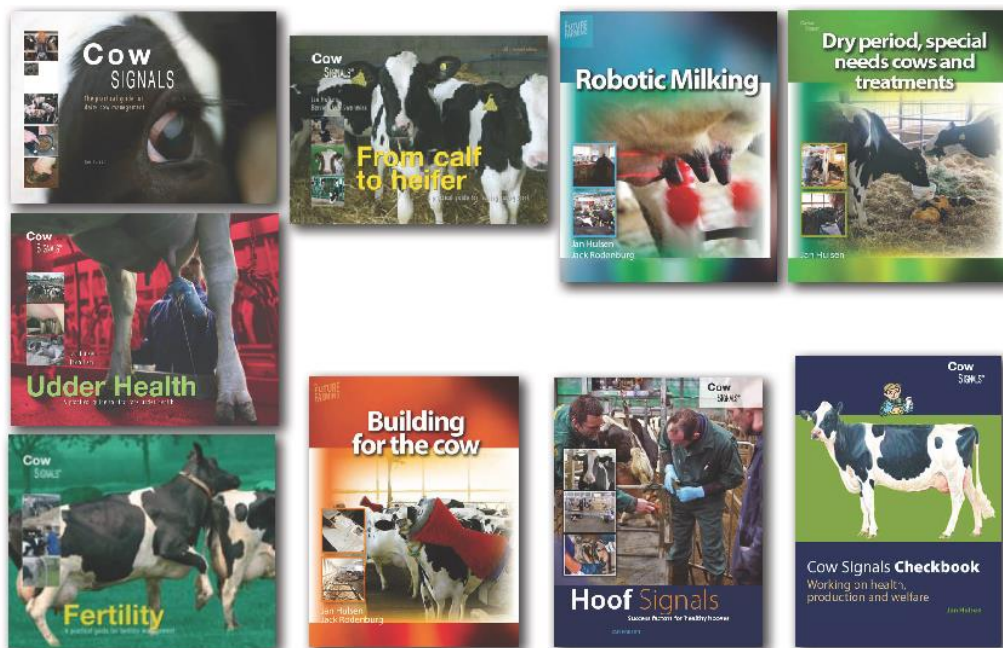
→ Attend one of the trainings or presentations offered by **The CowSignals Training Company**. See: www.cowsignals.com.

At this moment there are 9 subjects:

- CowSignals
- Hoof Signals
- From calf to heifer
- Dry cows and special needs
- Udder health
- Fertility
- Robot milking
- Building for the cow
- Stress free stockman ship

→ Read the books in the **Vetvice CowSignals book series**.

See www.cowsignals.com , www.vetvice.com or www.roodbont.com.



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