

# COW SIGNALS<sup>®</sup>

TRAINING COMPANY

Case study: Free ranging barn  
(VRIJLOOPSTAL)  
3½ year experience

by Marc Havermans,  
Moerdijk in The Netherlands

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**FEEDING TABLE WITH FLEX CABLE AND AUTOMATIC FEEDING**



# Marc's philosophy in 12 facts:

**GIVE THE COWS MAXIMAL FREEDOM AND KEEP IT SIMPLE.**

**THEN YOU CAN HAVE A GOOD INCOME AND A GOOD LIFE!!**

1. 3,5 years of experience with just compost 75 cm deep. Just started with straw bedding 6 weeks ago, because of legislation. Still daily cultivating. (Compost is labelled by the government as manure, and therefore it is impossible to stay within the limits of kg Nitrate per hectare. 15% N<sub>2</sub> evaporates from the pack, rest is slow release on the land with about 15% in the first year)
2. 210 cows, 30m<sup>2</sup> space in straw/compost bed per cow. Barn is 49,5 x 140 m. 4 Lely a4 robots. Separate pack for cows calving and nursing baby's for the first 3 weeks. Selection area and treatment box behind the 4 robots, with automatic selection from all 4 robots. Calf corner were they hide from the fresh cow herd.
3. Cows are 3 way cross with Danish Red, Holstein and Montbeliarde. 8000 litre per cow per year. 15-20% replacement.
4. 21 days dry period and no antibiotic treatment. Dry cows are in the main herd. Before calving till 3 weeks after calving they are in the fresh cow herd. Weak cows also stay in this herd. In this group there is a woodchips bedding that does not need filling very often. This is safer for the baby calves. When filling they need to be with 2 people to not run over de baby's with the lorry...
5. Feeding: unlimited silage (mix of 6 cuts of grass silage only) and up to 8 kg concentrate in the robots. Dry cows eat grass silage and 2 kg in the robot and last 10 days before calving they get a kg extra. There are 5 feed troughs with 22 cow places, so 110 places for 190 cows.  
Feed troughs are filled every morning and places in the a new location. This is a weak spot: very wet manure around the through. Front feed sink in, and rim of feeder is too high.
6. Plans are to grow to 300 cows, 5 robots, feed lane (concrete) and alley with Lely vector (automatic mixing, feeding and pushing machine) on one site of the barn (140 meter). New situation will have 16 m per cow in the straw pack. Roof is greenhouse system that provides a lot of sunlight for drying and many ventilation options for max air flow.

7. Pack: Plastic under layer, Sand layer of 20 cm (to see difference when emptying compost). Emptying dry compost (70% dry matter) only in Summer: July 20 cm top layer out and September 30 cm. Then start adding compost in October November, depends on the humidity, until April. Cows are in all year round because of heavy clay and small house field. Cultivating the pack daily. Adding dry compost weekly. Total pack is 6000 m<sup>2</sup> (49.5 x 120)
8. Barn is 6 meter till the gutter and 7,5 meter till the roof. Half of the roof can be opened. Side panels can open only 2,5 meter. In winter the low part is closed, but there is a half meter opening at 3 meter high. Free span width is 16.5 meters. 6000 meter pack and 1000 meter with machinery, office and selection area. In front of robots there is a manure storage tank with slatted floor.
9. Temperature at cow level: Max 1 degree difference with outside. Due to open sides and open roof. Winter : when -7 degrees outside, they can keep it -2 degrees Celsius inside, by closing side walls and roof completely. Shade nets are automatically coming out when sunny and above 22 degrees Celsius. Cows only use the shade area when temperature exceeds 27 degrees. Computer control on light intensity, wind, temperature and humidity.
10. Health: healthy and shiny and clean cows. Lower 20 cm of legs are dirty because of feeding system in the pack. This will be changed now. No mortelaro, laminitis or other hoof diseases. Hoof trimming once per year in January. Almost all cows calf naturally. 3% are born dead. Half per cent caesareans. No abomasal displacements. No dirty uterus or afterbirth problems. Around 10% mastitis cases. Sometimes we start milking only 2-3 days after calving. 5% cows have milk fever mainly on the second day after calving. 10% of the calves have diarrhoea. Mainly rota-corona virus and cryptosporidia. 5% of the calves is not nursed by the mother. They drink 10-15liters per day on day 21. That is the raise in milk that we see on day 22 of the mothers. After 3 weeks calves go to an automatic calf feeder machine in a small group of 3-4. When they drink ok, they go to a group of max 20 calves in tube ventilated barn.
11. Labour: 7 days from 9-5 staff. Main work is feeding (0,5-1 hour), Straw adding (0,5 hour) and cultivating the pack (1 hour)
12. New system with straw: 2 truckloads of straw per week of 90 euros per 1000 kg straw. Estimation is to use only 5 kg straw per cow per day in future because of separate feeding lane which is capturing almost half of the 60 kg slurry per cow per day, and the excellent ventilation and drying (open and solar transparent roof), and the fact that I will still have 15 m<sup>2</sup> per cow resting area.

**MORE INFO:**

Marc Havermans, e-mail: [marc@idv-advies.nl](mailto:marc@idv-advies.nl)

website: [www.klaverhof.com](http://www.klaverhof.com) and [www.idv-advies.nl](http://www.idv-advies.nl)

# Comment by Joep Driessen:

Free ranging barns: a very interesting cow friendly system. Key success factors are feed water light air rest and space... ! Spacey deep sand / straw cubicles are probably almost as good as this free ranging pack... It is your choice!

Big success factor is the freedom to eat. We recommend 70 cm feed space per cow, and a concrete lane where the cows can stand, always on the same level. You can put rubber here for the cows to stand on during the 6 hours eating. Scraping of this area every 2 hours is a must. Free access from resting to feeding is another big thing. So do not create barriers!!

First step for many dairymen and women in the world is to start experimenting with deep beds!! Start with your dry cow cubicles. Make them deep, large and soft! With free head swing space. They will love it... and you will love it...!

Good luck!

Kind regards Joep Driessen

*" Let your cows do the talking. Read their body language  
and let them live happily and twice as long".*

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phone : [+31 6-54267353](tel:+31654267353)  
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