

Milking robots, milk quality and other robots in the stables.

擠乳機器人與牛奶品質，其他 機器人的應用

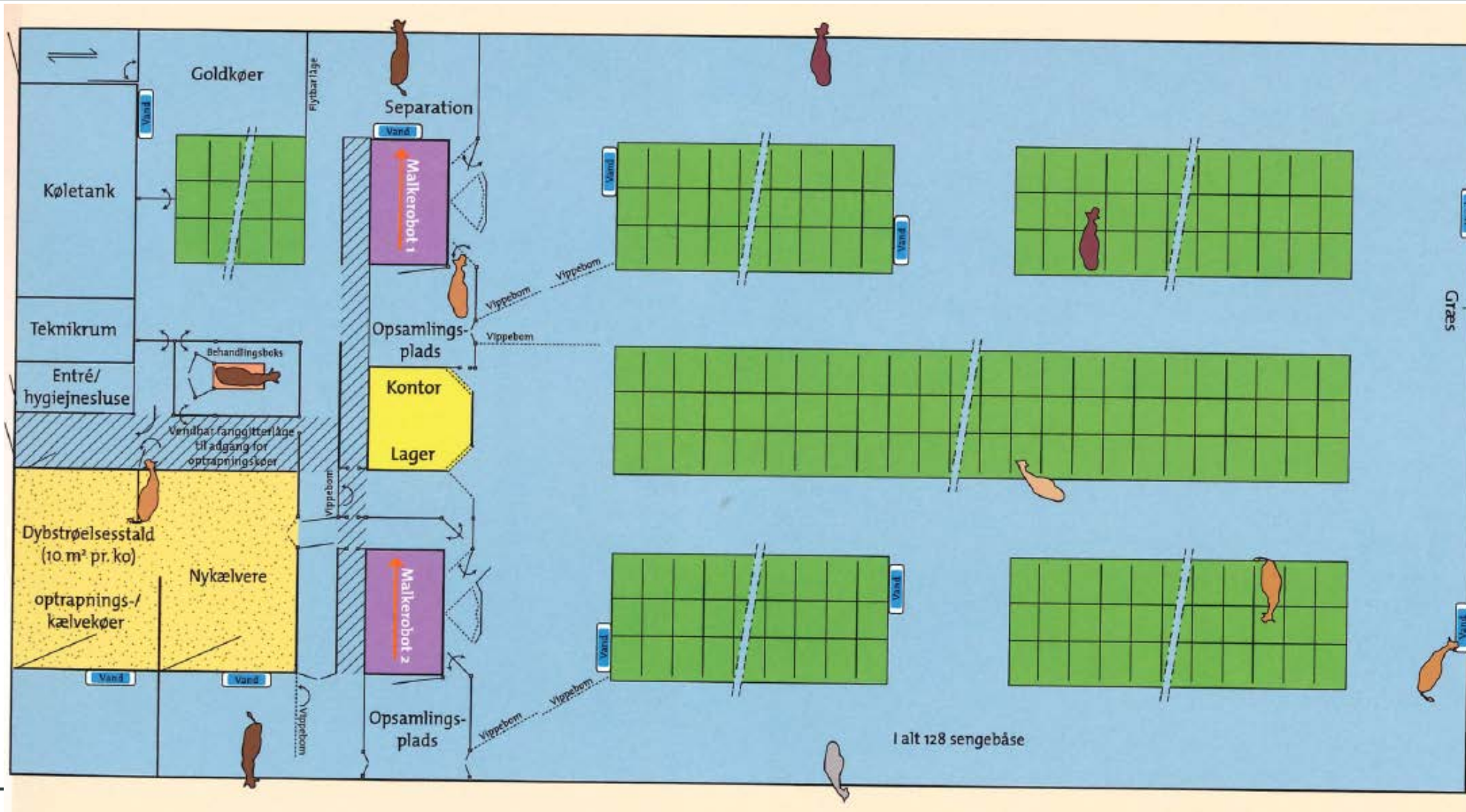
Companies with robots in the stables.



Milking robots. 擠乳機器人



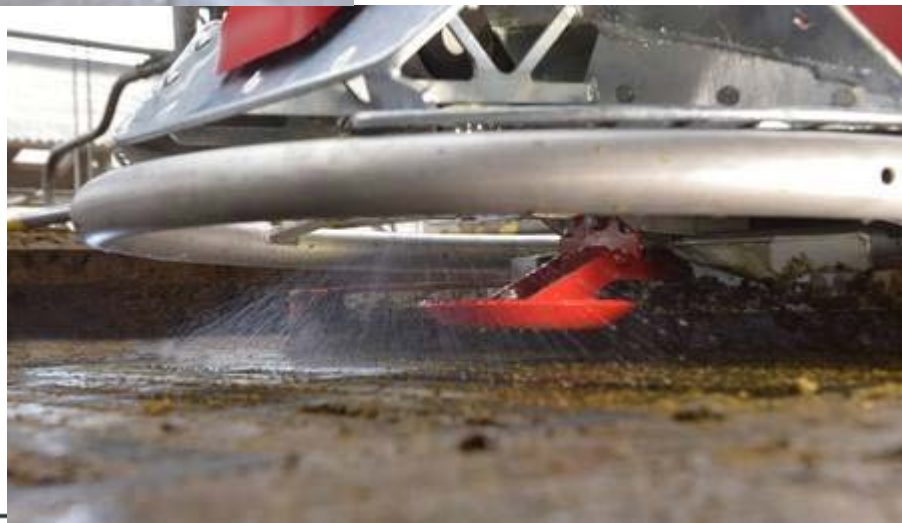
Stabel with milking robots. 有擠乳機器人的牛舍



Cleaning with the cow. 掃地機器人



- Helps with better hoof health. 有益於牛蹄健康
- Cleaner floors 乾淨的地板
- Cleaner beds 乾淨的牛床

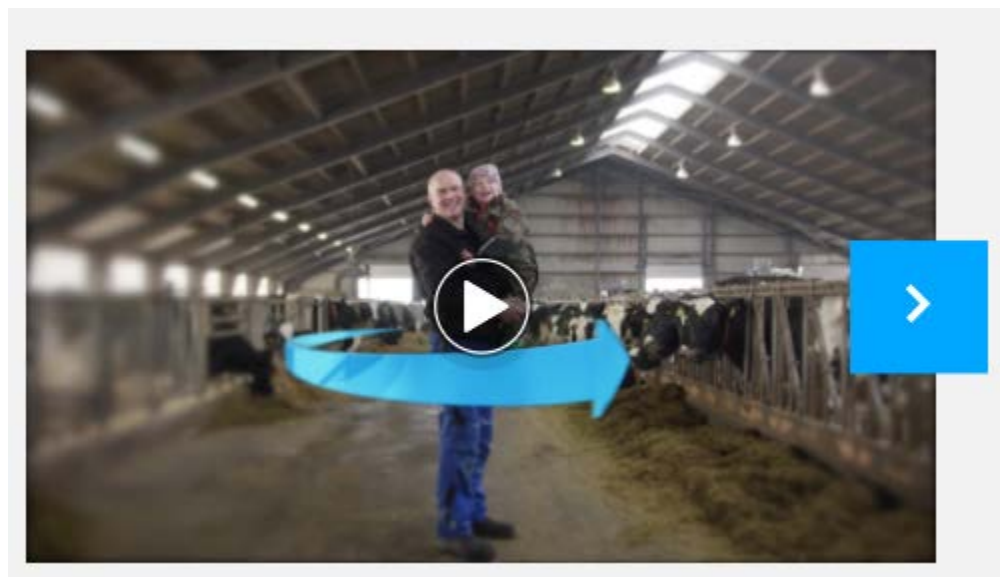


Cow comfort 牛的舒適度



Video about how the milking robots work

擠乳機器人運作影片



Good things with milking robots. 擠乳機器人的好處

- Higher milk yield. 較高產乳量
- The cow can get milked, when it wants. 牛想要的時候就可以擠乳
- You get data from the cow right away. 立即取得牛的數據
- Can milk separate milk in another tank. 牛奶可分開在不同的桶子
- It can tell you the Somatic cell count from day to day. 可得知每天體細胞數
 - You still need to go out and look at the cow with high Somatic cell count.
當體細胞數很高時，你仍然需要去看牛



Milk quality 牛奶品質



Danish milk producers are accounted for:

丹麥生乳生產者需要負責:

- Somatic cell count 體細胞數:
- Bacterial count 生菌數:
- Freezing Point - Reveals the presence of water, if any.
冰點 - 表示有水，如果有的話
- Visible changes in milk - e.g. Blood or Lumps. 目測牛奶的變化，例
如血或凝塊

-

Somatic cell count 體細胞數:

- Cells/ml milk (number of white blood cell and cell shed)
生奶每毫升細胞數 (白血球與cell shed)

- The number of cells is an indicator of udder health. 細胞數代表健康狀況不佳

- The older the cow, the more cells will be present in the milk.

隨著牛年紀越大，所產生乳裡的細胞數會增加

- A couple of times a year the farmer should do some samples, which tells the yielding and cell count of the cows. The farmer can then determine if the cow should continue the milking or the milk should be excluded from the tank.

酪農一年必須做幾次產乳量與體細胞數的檢測，依據這個數據決定是否讓牛繼續產乳，或是將這頭牛的生乳與其他生乳分開

Somatic cell count 體細胞數計算:

- Cell count calculations in 1000:
- 0-200 cells/ml = +2%
- 201-300 cells/ml = +2 - 0%
- 301-400 cells/ml = 0 - minus 5%
- 401 or more, cells/ml = minus 10%

Bacterial Count 生菌數計算

- Germs/ml milk (bacterial colonies per ml of milk) - The bacterial count indicates the number of bacteria present in milk 每毫升生乳的生菌數

- 1000 bacterier/ml
-

0-60	+2 %
61-120	+1 %
121-240	0
241-480	- 5 %
481-	- 10 %

CMT - California Mastitis Test

- Farmers should take a CMT Test to find out how many cells are in the milk, pr. cow.

酪農須採CMT檢測以了解每頭牛的生乳的細胞數

- The CMT is a scale from 1 to 5.

CMT檢測分為五級，1-5

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- 1 - ~0 to 150.000 cells
- 2 - ~150.001 to 400.000 cells
- 3 - ~400.001 to 1.200.000 cells
- 4 - ~1.200.001 to 5.000.000 cells
- 5 - More than 5.000.001 cells

CMT

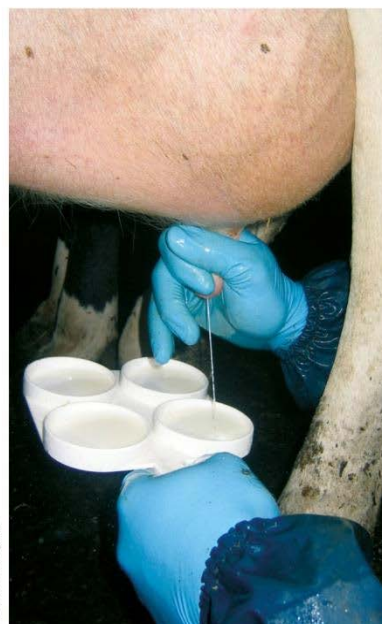


Foto: Sine Lallegaard



CMT scale

CMT 1 – 2



CMT 3

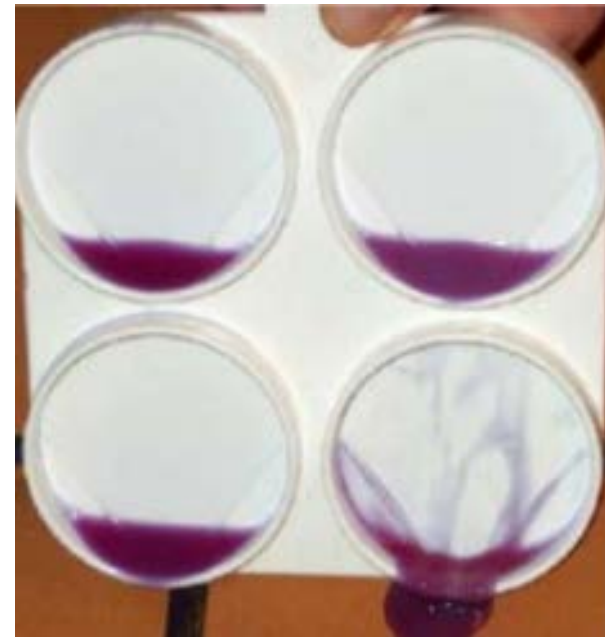


CMT scale

CMT 4



CMT 5



Still need to clean the beds and floor.





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