



Notat: *Beskrivelse af udvalgte bedrifter til test af bioforsuring*

Projekt: *Reduceret kvælstoffordampning ved hjælp af bio-forsuring af gylle.*

Følgende notat indeholder en beskrivelse (på engelsk) af de to bedrifter, der er udvalgt til test af Bioforsuringsteknologien efter VERA-protokollen.

Det specielle ved de to besætninger er, at der på hver besætning er to staldenheder af samme type, der er stor set lige store og med plads til lige mange dyr i hver. Dette muliggør at teste teknologien efter case/control princippet, hvor teknologien afprøves i én staldenhed og sammenlignes med en reference-enhed på samme besætning. Halvvejs i testperioden ombyttes test- og reference-enheden, så eventuelle forskelle udjævnes.



### **Characterization of the test site**

The test sites consist of two commercial dairy farms. Each farm has two separate barns (compartments), with separated pits and individual inlet and outlet for ventilation. The capacity of the housing systems is between 245 – 307 animals. The barns are designed as so called cubicle housing systems with cubicle bedding. The two compartments on each farm are nearly identical regarding build design. At farm 1 both compartments have partly slatted floor cleaned with cleaning robots. In farm 2 there are partly slatted floors in both compartments which is cleaned daily with a staldkat machine. The cows are evenly distributed in farm 2, (+2 %) and in farm 1 the number of heads very 7 %, and 19 % in one compartment is heifers.

The flooring systems are partly slatted floor. The manure from the cattle is collected in a circular pit under the slats. The bedding material is chopped straw. The cows are all fed with a mix of corn silage and grass silage balanced with soybean meal and wheat.

The ventilation systems are natural ventilation with regulated curtains and open kip. At farm 1 all cows are Holstein-Friesian with an average weight of 617 kg. The cows are milked automatically by milking robots. The average milk production per cow is 11,276 kg/year. At farm 2 all cows are Jersey with an average weight of 423. The cows are milked twice per day (7:00 and 19:00). The average milk production per cow is 11,000 kg/year.

Table 1-2 gives an overview of key characteristics of the dairy farms used in this test.

*Table 1. Key characteristics of the dairy farm no. 1 used for test.*

<b>Parameter</b>	<b>Test site characteristics</b>
	<b>Section 1+2</b>
Farm owners	Depersonalized
Address	Depersonalized, 6230 Rødekro
CHR no.	Depersonalized
Grazing cows in summer	No. Heifers yes
Animal places N+S	245+267
Animal race	Holstein-Friesian
Weight range (kg)	617
Milk production l/year/cow	11,276
Bedding material	Chopped straw 300-500 g/place/day, rubber mats, Ökosan approx. 10-12 kg./day
Straw-bedded area per cow	1.25 m wide 2.8 m long
Total accessible floor area per animal place	3035 m <sup>2</sup> /517 places =5,87 m <sup>2</sup> / place
Total accessible area per place	5076 m <sup>2</sup> /517 places = 9,8 m <sup>2</sup> / place



Number of cows	Compartment N + S: 184 + 245
Number of Heifers	44 in compartment N =19%
Number of calves	0
Bulls	0
Floor design	Slats
Manure removal system	Recirculated manure in circular pit
Scraper systems on top of slats	Scraper Robot
Cooling of slurry	No.
Feed composition	45% corn silage 45% grass silage, soybean meal, wheat
Feed analysis	3 x per year
Ventilation	Natural ventilation with automatically regulated curtains. Open kip
Agricultural advisor	Byggeri: Ole Ugelvig. Phone. 23256524 / 74365000. Mail: bmou@bygningkontoret.dk Feeding: Anne Mette Ugelvig
Feeding	07.00-8.30



Table 2. Key characteristics of the dairy farm no. 2 used for test.

Parameters	Test site characteristics
	Section 1+2
Farm owner	Depersonalized
Address	Depersonalized, 9700 Brønderslev
CHR no.	Depersonalized
Grazing cows in summer	Non
Animal places, north+south compartment	<b>307+294 =601</b>
Animal race	Jersey
Weight range (kg)	423
Milk production l/year/cow (km)	<b>11,000</b>
Bedding material	Straw 300-500 g/place/day
Straw-bedded area per cow	1.1 m wide 2.2 m long
Total accessible floor area per place	2,362 m <sup>2</sup> floor/601 places =3.94 m <sup>2</sup> / place
Total accessible area per place	3790 m <sup>2</sup> /601 places = 6,3 m <sup>2</sup> / place
Number of cows	<b>601</b>
Number of Heifers	<b>0</b>
Number of calves	<b>0</b>
Bulls	<b>0</b>
Floor design	Slats
Manure removal system	Circular recirculation manure pit
Scraper systems on top of slats	mini truck (staldkat)
Cooling of slurry	No.
Feed composition	corn silage and grass silage
Feed analysis	Once per month
Ventilation	Natural ventilation. Open Kip. Regulated curtains. Can be supplemented with opening of windows
Agricultural advisor	Jens Melgaard, LandboNord
Milking	07.00 and 19.00



Overview of farm 1.

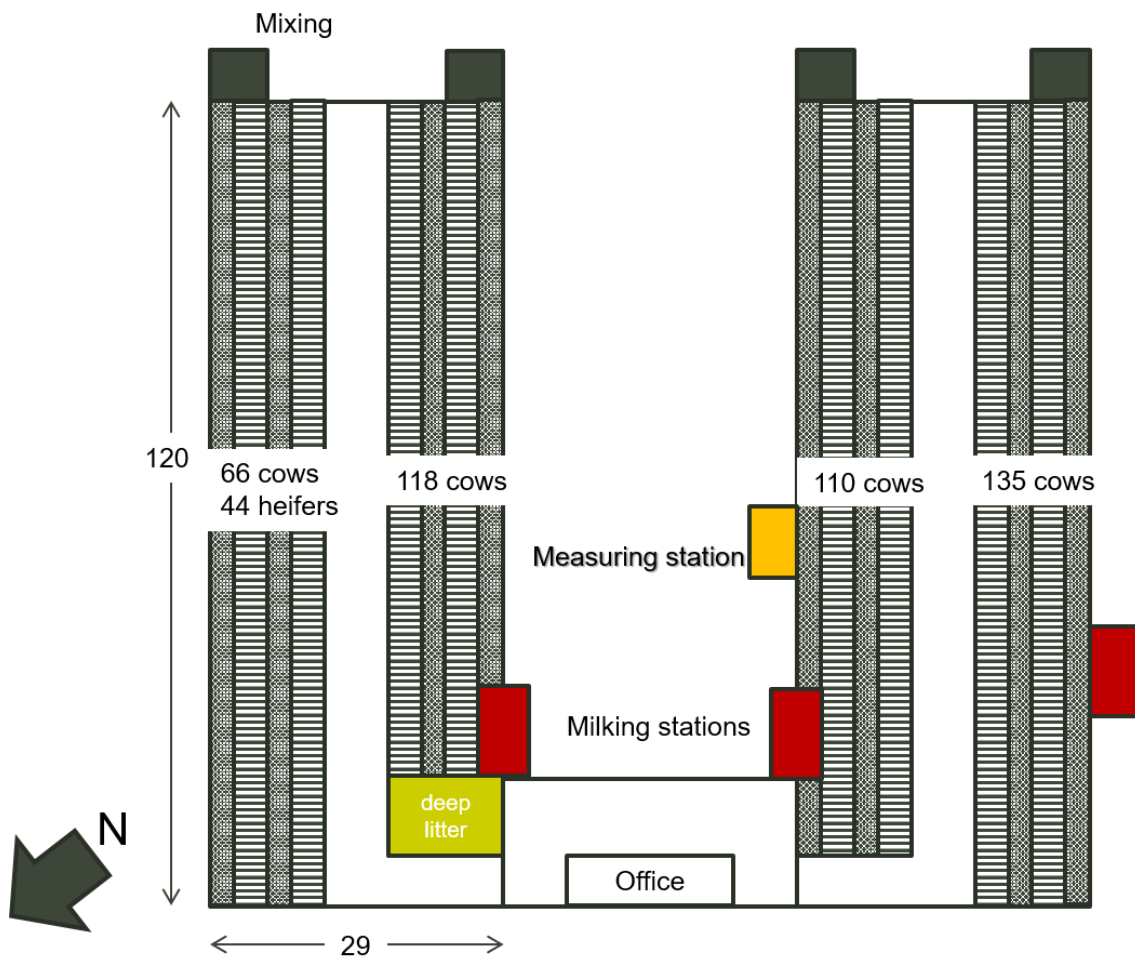


Figure 1 shows a diagram of the dairy farm house 1.



Overview of farm 2.

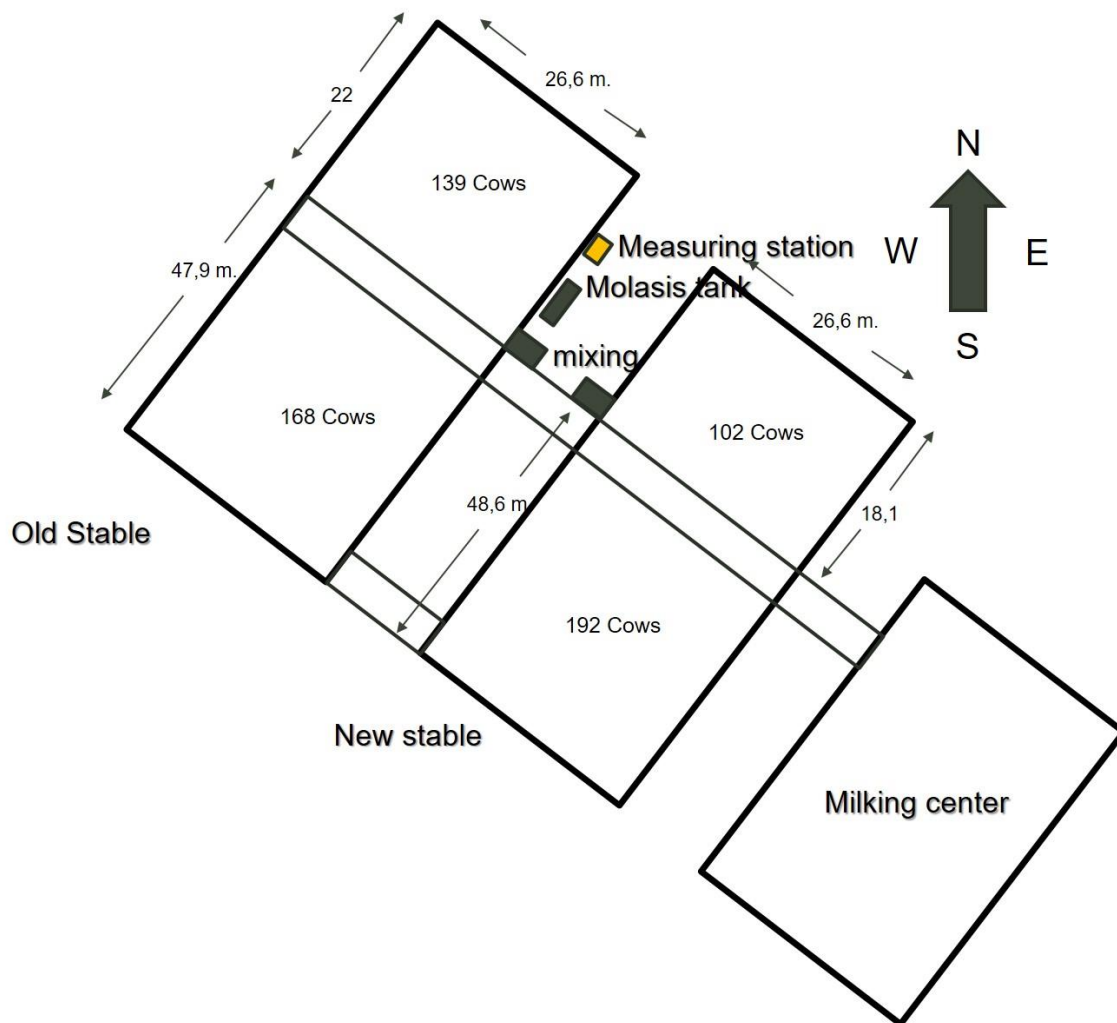


Figure 2 shows a diagram of the dairy farm house 2