

Sand bedding

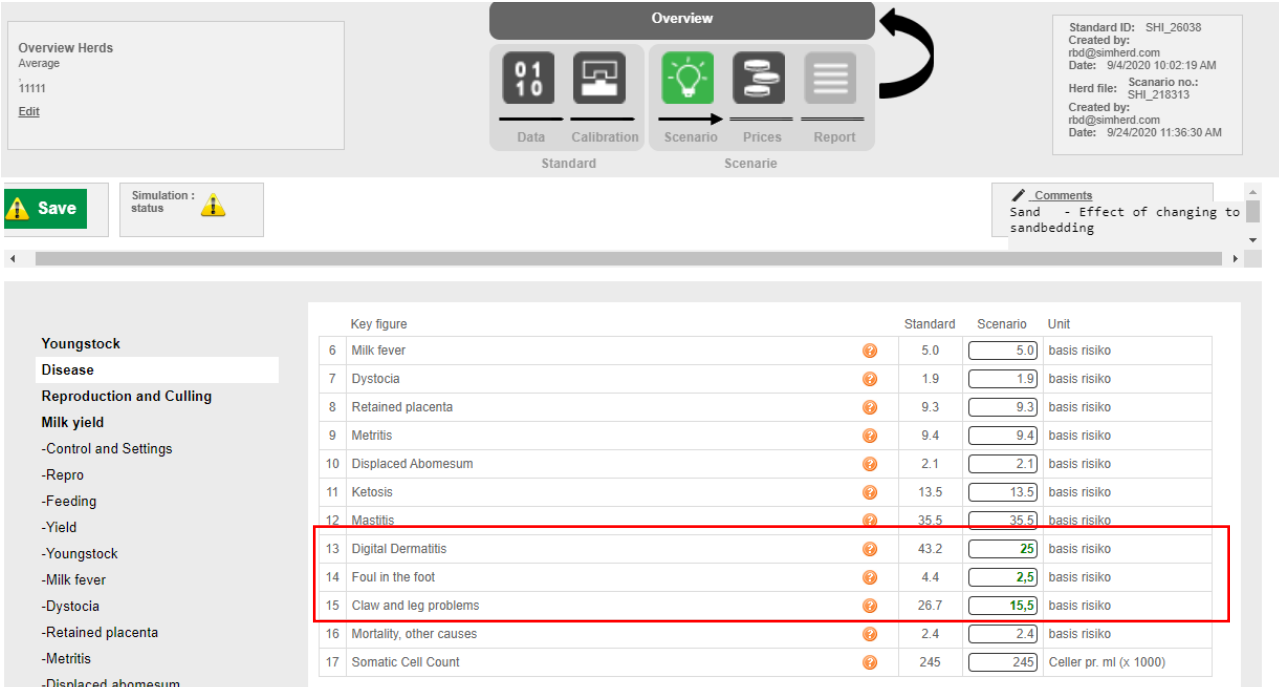
Ruth Davis, SimHerd
01-06-2021

Changing from mattress to sand bedding can improve cow welfare and milk production. The largest effects can be seen on claw and leg health in combination with an improved udder health. Due to the sand bedding the amount of time lying is often increased substantially which results in an increased milk yield. All these effects need to be captured, to simulate the effect of sand bedding.

When you have created your herd and calibrated the data, you can create a scenario.

(NB: It is very important that the correct amount of diseases is entered in the herd data. If no or a low level of diseases is entered the effect of sand bedding will be underestimated)

- 1) Reduce the risk of "claw and leg problems, Digital Dermatitis and foul in the foot" (category -> diseases) with **42%** (multiply the key figures with 0,58).



The screenshot shows the SimHerd software interface. At the top, there is an 'Overview' navigation bar with icons for Data, Calibration, Scenario, Prices, and Report. A 'Save' button and a 'Simulation status' warning icon are visible on the left. On the right, there is a box with metadata: Standard ID: SHI_26038, Created by: rbd@simherd.com, Date: 9/4/2020 10:02:19 AM, Herd file: Scenario no.: SHI_216313, Created by: rbd@simherd.com, Date: 9/24/2020 11:36:30 AM. Below this is a comment box with the text 'Sand - Effect of changing to sandbedding'. The main part of the screenshot is a table of key figures.

Key figure	Standard	Scenario	Unit
6 Milk fever	5.0	5.0	basis risiko
7 Dystocia	1.9	1.9	basis risiko
8 Retained placenta	9.3	9.3	basis risiko
9 Metritis	9.4	9.4	basis risiko
10 Displaced Abomesum	2.1	2.1	basis risiko
11 Ketosis	13.5	13.5	basis risiko
12 Mastitis	35.5	35.5	basis risiko
13 Digital Dermatitis	43.2	25	basis risiko
14 Foul in the foot	4.4	2.5	basis risiko
15 Claw and leg problems	26.7	15.5	basis risiko
16 Mortality, other causes	2.4	2.4	basis risiko
17 Somatic Cell Count	245	245	Celler pr. ml (x 1000)

2) Reduce the risk of mastitis with 27 % (multiply with 0,73)

Overview Herds

Average

11111

[Edit](#)

Overview

01
10

Data

Calibration

Scenario

Prices

Report

Standard Scenarie

Standard ID: SHI_26038

Created by: rbd@simherd.com

Date: 9/4/2020 10:02:19 AM

Herd file: Scenario no.: SHI_218313

Created by: rbd@simherd.com

Date: 9/24/2020 11:36:30 AM

Save

Simulation : status

Comments

Sand - Effect of changing to sandbedding

Youngstock

Disease

Reproduction and Culling

Milk yield

-Control and Settings

-Repro

-Feeding

-Yield

-Youngstock

-Milk fever

-Dystocia

-Retained placenta

-Metritis

-Displaced abomesum

Key figure		Standard	Scenario	Unit
6	Milk fever	5.0	5.0	basis risiko
7	Dystocia	1.9	1.9	basis risiko
8	Retained placenta	9.3	9.3	basis risiko
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16	Mortality, other causes	2.4	2.4	basis risiko
17	Somatic Cell Count	245	245	Celler pr. ml (x 1000)

3) Increase the peak yield of all parities with 4 % (multiply 1,04)

Overview Herds

Average

11111

[Edit](#)

Overview

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Sand - Effect of changing to sandbedding

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-Feeding

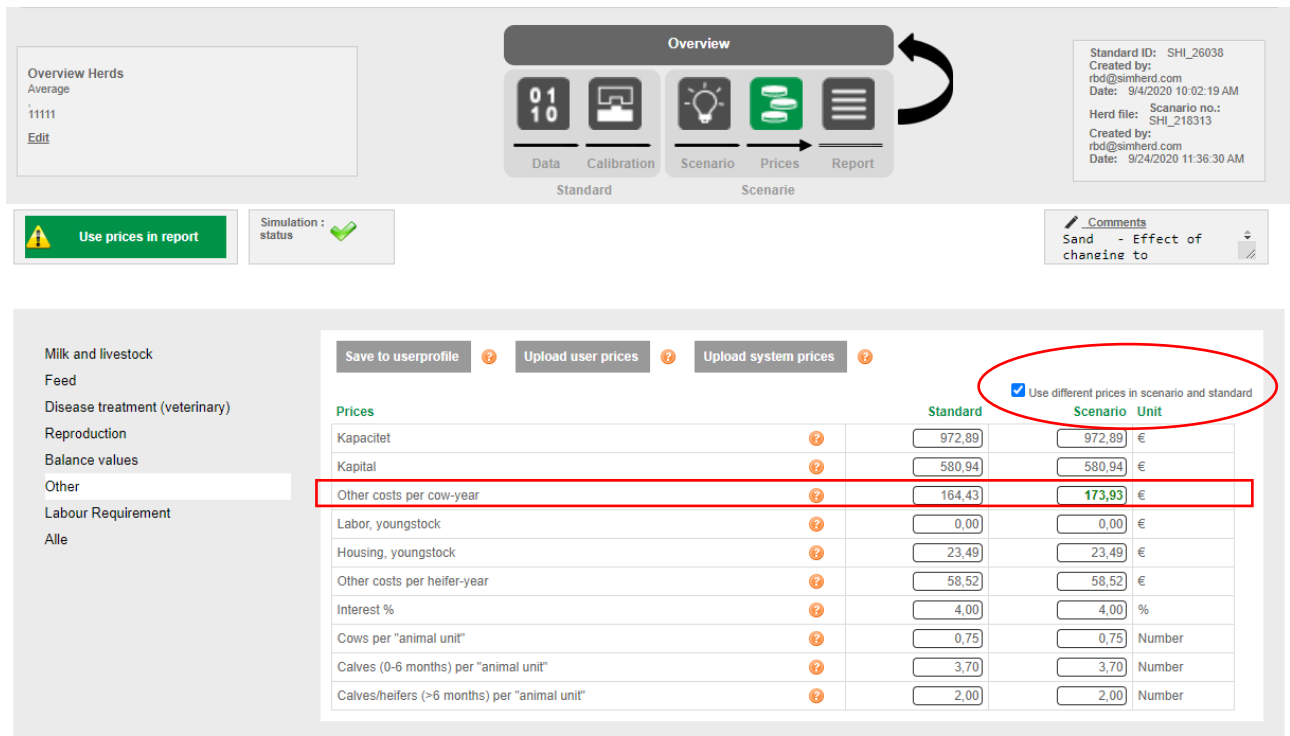
-Yield

-Youngstock

Key figure		Standard	Scenario	Unit
27	Peak yield of healthy parity 1 cows	32.8	33.1	kg EKM per dag
28	Peak yield of healthy parity 2 cows	42.5	44.2	kg EKM per dag
29	Peak yield of healthy parity 3+ cows	44.8	46.6	kg EKM per dag
30	Persistency, parity 1	13	13	% fald fra dag 60 til 305
31	Persistency, parity 2	30	30	% fald fra dag 60 til 305
32	Persistency, parity 3+	36	36	% fald fra dag 60 til 305

- Press save and run

- 4) Go to prices -> press use different prices in scenario and standard -> increase "other cost per cow-year" with 9,5 euros (70 DKK)




Overview

Standard Scenario

Standard ID: SHI_26038
Created by: rbd@simherd.com
Date: 9/4/2020 10:02:19 AM
Herd file: Scenario no.: SHI_218313
Created by: rbd@simherd.com
Date: 9/24/2020 11:36:30 AM

Use prices in report

Simulation status: 

Comments: Sand - Effect of change in to

Save to userprofile Upload user prices Upload system prices

Use different prices in scenario and standard

Prices	Standard	Scenario	Unit
Kapacitet	972,89	972,89	€
Kapital	580,94	580,94	€
Other costs per cow-year	164,43	173,93	€
Labor, youngstock	0,00	0,00	€
Housing, youngstock	23,49	23,49	€
Other costs per heifer-year	58,52	58,52	€
Interest %	4,00	4,00	%
Cows per "animal unit"	0,75	0,75	Number
Calves (0-6 months) per "animal unit"	3,70	3,70	Number
Calves/heifers (>6 months) per "animal unit"	2,00	2,00	Number

- Press use prices in report

All estimates are based on the following literature:

<https://sp.landbrugsinfo.dk/Tvaerfaglige-emner/FarmTest/Sider/FarmTest-93-Sand-i-sengebaase.pdf>

Cook, N. B. 2003. Prevalence of lameness among dairy cattle in Wisconsin as a function of housing type and stall surface. Journal of American Veterinary Medical Association 223: 1324 – 1328.

Cook, N. B. 2011. Cow comfort and health. (Online). Milkproduction.com. (Date for citing: 7.12.2012). Date for revision 18.04.2011. <http://www.milkproduction.com/Library/Scientific-articles/Housing/Cow-comfort-and-health/>.

Cook, N. B., T. B. Bennet & K. V. Norlund. 2004. Effect of free stall surface on daily activity patterns in dairy cows, with relevance to lameness prevalence. J. Dairy Sci. 87:2912-2922.