

Herd expansion

Jehan Ettema, SimHerd 14-06-2021

How much Gross Margin (dækningsbidrag) can we generate when expanding our herd? How fast will we be able to increase in cow-number? Will we expand faster when using sexed semen?

1) You create your herd like you always do, but only when simulating a herd-expansion, you have to enter how many calves and heifers the herd has today. If you want to know how fast you can go from 134 to 180 cows, it is very important to know if you have 60 or 80 heifers today or if you have a very old (many third parity cows) or many young cows (many first parity cows).

Below: Enter how many calves, heifers, first parity, second parity and third parity cows you have today!

			Overview				
Overview Herds		11 📼	Γ¢.			ン	
Edit		Data Calibra	tion Scenario	Prices	Report		
		Standard	-	Scenarie			
Simulation :		Ru	n NTM H	lealth	Repro	Beef	? 1
	SN	Input parameter			Average	Input	Unit
Youngstock	33	Number of replicates		0	value	1.6	0 til 5
Disease	34	Initial herd present (0 = yes, 1=limited, 2=no=no	n Danish users)	0	1 (0, 1 eller 2
Reproduction and Culling Milk yield	35	- Number of calves in the initial herd	I-Danish asolsy	0	100	65	Antal
-Control and Settings	36	- Number of heifers in the initial herd		0	100	52	Antal
-Repro	37	- Number of first parity cows in the initial herd		0	80	45	Anial
-Feeding	38	- Number of second parity cows in the initial here	1	0	50	37	Antal
-Yield	39	- Number of third parity cows in the initial herd		0	90		Antal
-Youngstock -Milk fever	40	Proportion in lactation stage 100 - 200 days in in	itial herd	0	0.3 (0.28	proportion, melle 0 og 1
-Dystocia	41	Proportion in lactation stage 200-300 days in init		0	0.2	0.24	proportion, melle

Click on "Save"

2) Click on "Calibrate" and go into the category "Reproduction and culling (dotted arrow)"



Overview Herds Marian 42113 Edit		0 1 1 0 Data	Calibration		Prices	Report	2		
		Sta	indard		enarie				/
Calibrate 😨 Simulation : 1			Run	TM He	alth	Repro	Beef	?	
Youngstock	SN Input paramete	er				Average value	Input	Unit	
Disease	33 Number of rep	olicates			0	1	1.6	0 til 5	
Reproduction and Culling	34 Initial herd pres	esent (0 = yes, 1=limited	, 2=no=non-Danis	h users)	0	1	2	0, 1 eller 2	
Milk yield	35 - Number of ca	alves in the initial herd			0	100	65	Antal	
-Control and Settings	36 - Number of he	eifers in the initial herd			0	100	52	Antal	
-Repro	37 - Number of fir	rst parity cows in the init	ial herd		0	80	45	Antal	

Here you can see that this herd, in a situation with constant herd-size (Maximum number of cows is 134), can generate a surplus of 17 heifers every year. So there is "expansion capacity". In case the herd would have 2-3 sold heifers, you could already now see, that it wouldn't be interesting to study herd expansion with own youngstock.

3) Click on Scenario (dotted arrow) to create a scenario in which you are going to simulate herd expansion.

erview Herds									
erview Heras		01						Created b Date: 6/2	ID: SHI_29126 y: vdmes //2021 12:49:43 F
		Data	Calibration Scena	rio Prices	Report	-		Herd file: autoDCF2	9126.HSIKVDB
		Stan		Scenarie	***				
Simulation : 💞 status			Run NTM	Health	Repro	Beef	•	<u>Comments</u>	/
Youngstock	SN	Input parameter			Average value	Input	Unit	Simulated Results	Key figure
Disease	18	Start breeding, first parity cows		0	42	44	dage efter kælvning	141	Number of Calvings
Reproduction and Culling	19	Start breeding, other cows		0	42	44	dage efter kælvning	27	Replacement Rate
-Control and Settings	20	Heat observation rate		0	38	54	sandsynlighed	395	Calving Interval
-Repro	21	Conception rate		0	49	46	sandsynlighed		
-Feeding -Yield -Youngstock	22	Insemination period		0	11	[12]	antal cyklusser	18	Number of cullings due to failure to conceive
-Milk fever -Dystocia	23	Other culling		0	7.5	9.1	basis risiko	18	Number of other cullings incl. mortality
-Retained placenta -Metritis	24	Limit for buying heifers.		0	180	126	antal køer	+	Number of bought heifers
-Displaced abomesum	25	Strategy for heifer sale		0	0	0	0,1,2	17	Number of sold heifers
-Ketosis -Mastitis	26	Maximum number of cows		0	200	134	antal køer	133	Number of cow-years



4) Click on "Create new scenario"

	Overview		
Overview Herds			Standard ID: Created by: Date:
Edit			Herd file:
	Data Calibration Scenario Prices Standard Scenarie	Report	
			Create standard
SH_29126 6/22021 12:49:43 PM			E
Created by: vdmes Other information: Herd file: autoDCF29126.HSIKVDB	Create PDF (general)	Scenario Scanario no.: SHI 278214	
Create	Create PDF (breeding)	Created by: vdmeš Date: 6/16/2021 11:36:21 AM Comments: 160	ŭ
Calibration NEW scenario		Scenario Prices Report	
Download Report		Scenario Scanario no.: SHI_277466 Created by: vdmes Date: 6/1/2021 11:51:07 AM	

5) Increase the "Maximum number of cows" to (for example) 180. Click on "save and run"

				Overview				Standard ID: SH Created by: vdm
it			11 🗖	🔯 🖹	目.			Date: 6/2/2021 1 Herd file: autoDCF29126.HS Scanario no.: SI
<u></u>			Data Calibration	Scenario Prices	Report			Created by: vdn Date: 6/16/2021
			Standard	Scenarie				
Save Simulation :								/ <u>Comments</u>
Youngstock	10	Key figure			0	Standard	Scenario	Unit
Youngstock Disease		Start breeding, first parity			0	44	(44)	dage effer kælvning
	19	Start breeding, first parity Start breeding, other cows			0	44 44	(44) (44)	dage efter kælvning dage eller kælvning
Disease	19 20	Start breeding, first parity Start breeding, other cows Heat observation rate			0	44 44 54	(44) (44) (54)	dage ef ir kælvning dage ever kælvning sand ynlighed
Disease Reproduction and Culling	19 20 21	Start breeding, first parity Start breeding, other cows Heat observation rate Conception rate			0 0 0	44 44 54 46	44 44 54 46	dage effor kælvning dage eter kælvning sand ynlighed san synlighed
Disease Reproduction and Culling Milk yield	19 20 21 22	Start breeding, first parity Start breeding, other cows Heat observation rate Conception rate Insemination period			9 9 9	44 44 54 46 12	44) 44) 54) 46) 12)	dage et ir kælvning dage et er kælvning sand ynlighed san synlighed ar al cyklusser
Disease Reproduction and Culling Milk yield -Control and Settings	19 20 21 22 23	Start breeding, first parity Start breeding, other cows Heat observation rate Conception rate Insemination period Other culling			0 0 0 0	44 44 54 46 12 9.1	 44) 44) 54) 46) 12) 9.1) 	dage ef ir kælvning dage ef er kælvning sand vnlighed san synlighed ar al cyklusser bisis risiko
Disease Reproduction and Culling Milk yield -Control and Settings -Repro	19 20 21 22 23 24	Start breeding, first parity Start breeding, other cows Heat observation rate Conception rate Insemination period Other culling Limit for buying heifers.			0 0 0 0 0	44 44 54 46 12 9.1 126	44) 44) 54) 46) 12)	dage et ir kælvning dage et er kælvning sand inlighed an al cyklusser ti sis risiko intal køer
Disease Reproduction and Culling Milk yield -Control and Settings -Repro -Feeding	19 20 21 22 23 24	Start breeding, first parity Start breeding, other cows Heat observation rate Conception rate Insemination period Other culling			0 0 0 0	44 44 54 46 12 9.1	 44) 44) 54) 46) 12) 9.1) 	dage et ir kælvning dage e er kælvning sand vnlighed san synlighed ar al cyklusser bisis risiko



6) In the Report you see that the Gross Margin per year of the farm is much higher (solid arrow), because you have more cows.

The Gross Margin per cow and also the milk yield per cow is the same (dotted arrow) because we didn't change milk yield or disease risk.

In this situation the Gross Margin on cow-level is a tiny bit lower, but that is not significant. Sometimes the results an cow-level can be a lot lower when we simulate a very big increase in cownumber; during and also after the expansion, the herd doesn't have enough heifers for culling which reduces milk yield per cow-year.

							Overview		
r view Herds In 3					01 10		ČÓ.		
					Data	Calibration	Scenario	Prices	Report
					Stan	dard	1	Scenarie	
Gross margin (GM)	<mark>after 5 years (av</mark> Standard	verage of simula Scenario	ation years Differen	a far a state of the Second					
Gross margin (GM)			and the second second	ce	/				
	Standard	Scenario	Differen	ce 74			,		
GM per year	Standard Kr 2.144.954	Scenario Kr 2.883.028	Differen Kr 738.0	ce 74 -5					
GM per year GM per cow-year	Standard Kr 2.144.954 Kr 16.133 Kr 1,314	Scenario Kr 2.883.028 Kr 16.128 Kr 1,314	Differen Kr 738.0 Kr Kr 0,0	ce 74 -5	Difference	20			
GM per year GM per cow-year GM per kg ECM	Standard Kr 2.144.954 Kr 16.133 Kr 1,314 ng (average of s	Scenario Kr 2.883.028 Kr 16.128 Kr 1,314	Differen Kr 738.0 Kr Kr 0,0 6 to 10)	ce 74 -5 00	Difference -6		•		
GM per year GM per cow-year GM per kg ECM Milk yield and feed	Standard Kr 2.144.954 Kr 16.133 Kr 1,314 ng (average of s ar, kg ECM	Scenario Kr 2.883.028 Kr 16.128 Kr 1,314 imulation years	Differen Kr 738.0 Kr Kr 0,0 s 6 to 10) Standard	ce 74 -5 00 Scenario	-	50	•		
GM per year GM per cow-year GM per kg ECM Milk yield and feedi Milk yield per cow-ye	Standard Kr 2.144.954 Kr 16.133 Kr 1,314 ng (average of s ar, kg ECM ar (only milking days)	Scenario Kr 2.883.028 Kr 16.128 Kr 1,314 imulation years	Differen Kr 738.0 Kr Kr 0,0 Standard 12282	ce 74 -5 00 Scenario 12275	-6	.e			
GM per year GM per cow-year GM per kg ECM Milk yield and feedi Milk yield per cow-ye Milk yield per cow-ye	Standard Kr 2.144.954 Kr 16.133 Kr 1,314 ng (average of s ar, kg ECM ar (only milking days)	Scenario Kr 2.883.028 Kr 16.128 Kr 1,314 imulation years	Differen Kr 738.0 Kr Kr 0,0 s 6 to 10) Standard 12282 13765	ce 74 -5 00 Scenario 12275 13762	-6 -2	50 			

Scroll down in the report. This table shows that there is more of everything: more cows, calvings and sold heifers. But this is the long term situation; years 6 to 10.

	Standard	Scenario	Difference
Number of cow-years	133	179	46
Number of calvings	141	191	49
Replacement rate	26,9	27,0	0,1
-Number of Involuntary Cullings incl. mortality	18	24	6
-Number of Voluntary Cullings	18	24	6
Number of productive years per cow	3,7	3,7	0,0
Lifetime production, kg ECM	45649	45510	-139
Stillbirth, %	2,0	2,1	0,1
Calf mortality, after birth, %	1,7	1,8	0,0
Number of alive born bull calves	65	87	22
Number of alive born crossbred-calves	14	19	5
Number of bought heifers	0	0	0
Number of sold heifers	17	23	6



Scroll down in the report. See below: it takes 2 years for the herd to expand to 180 cows.



Scroll more down: you can see that the milk production is lower while the herd expands (circle below); more young cows and less culling of older cows, until the new cow-number is reached.

What if we also use sexed semen? Will that go faster?

- Overview **Overview Herds** 0 <u>Edit</u> Calibration Data Scenario Prices Re Standard Scenarie Simulation : Print report status 14000 Standard Scenario 12000 kg ECM per cow-year 10000 8000 6000 4000 2000 0-0 2 4 6 8 10 Year
- 7) Click on Overview in the top (red arrow).



8) Copy this scenario (red arrow): we want to <u>add on</u> to this scenario.

	Overview	
Overview Herds Warian 42113 Edit	01 Image: Calibration Data Calibration Scenario Prices Report	Standard ID: Created by: Date: Herd file:
	Standard Scenarie	
		Create standard
Standard SH_29126 6/2/2021 12:49:43 PM		Ε
Created by: vdmes Other information: Herd file: autoDCF29126.HSIKVDB	Create PDF (general) Scenario Scanario no.: SHL_278215	¤
Calibration Create Scenario	Create PDF (breeding)	1

9) We don't need to specify the "maximum number of cows" again (see circle below, it's still there, because we copied the first scenario). Enter the category "-Repro" (Red arrow)

erview Herds		01 10 Data Calibration	Overview	Report			Standard ID: SHI_29126 Created by: vdmes Date: 6/2/2021 12:49:43 PM Herd file: autoDCF29126.HSIKVDB Scanario no: SHI_278239 Created by: vdmes Date: 6/16/2021 12:49:51 PM
		Standard	Scenarie	Report			
Simulation : 🥪							✓ <u>Comments</u> Kopi af scenarie: 180
	Key figure				Observations	Scenario	1.1-18
					Standard	Scenario	Unit
-	18 Start breeding, first par	ity cows		0	44	(44)	dage efter kælvning
Disease				0 0			
Disease Reproduction and Culling	18 Start breeding, first par			-	44	(44)	dage efter kælvning
Disease Reproduction and Culling Milk yield	18 Start breeding, first par 19 Start breeding, other co			0	44 44	(44) (44)	dage efter kælvning dage efter kælvning
Disease Reproduction and Culling Milk yield	18 Start breeding, first par 19 Start breeding, other co 20 Heat observation rate 21 Conception rate			0 0 0	44 44 54	(44) (44) (54) (46)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighed
Disease Reproduction and Culling Milk yield -Control and Settings	18 Start breeding, first part 19 Start breeding, other or 20 Heat observation rate 21 Conception rate 22 Insemination period			0 0 0 0	44 44 54 46 12	(44) (54) (6) (12)	dage efter kælvning dage efter kælvning sandsynlighed antal cyklusser
Disease Reproduction and Culling Milk yield -Control and Settings -Repro	18 Start breeding, first par 19 Start breeding, other co 20 Heat observation rate 21 Conception rate 22 Insemination period 23 Other culling	WS		0 0 0 0	44 44 54 46 12 9.1	(44) (44) (54) (12) (9.1)	dage efter kælvning dage efter kælvning sandsynlighed antal cyklusser basis risiko
Disease Reproduction and Culling Milk yield -Control and Settings -Repro -Feeding	18 Start breeding, first par 19 Start breeding, other cc 20 Heat observation rate 21 Conception rate 22 Insemination period 23 Other culling 24 Limit for buying heifers.	WS		0 0 0 0 0	44 44 54 46 12 9.1 126	(44) (44) (54) (46) (12) (9.1) (126)	dage efter kælvning dage efter kælvning sandsynlighed antal cyklusser basis risiko antal køer
Youngstock Disease Reproduction and Culling Milk yield -Control and Settings -Repro -Feeding -Yield -Youngstock	18 Start breeding, first par 19 Start breeding, other co 20 Heat observation rate 21 Conception rate 22 Insemination period 23 Other culling	WS		0 0 0 0	44 44 54 46 12 9.1	(44) (44) (54) (12) (9.1)	dage efter kælvning dage efter kælvning sandsynlighed antal cyklusser basis risiko antal køer 0.1.2



10) Specify that you will inseminate ALL heifers (1) with sexed semen at a maximum of 2 insemination (read the question marks behind the parameters) and click on "Save". Make sure you change the name of the scenario (Red arrow)

erview Herds		81 🖻			2		Standard ID: SHI_29126 Created by: vdmes Date: 6/2/2021 12:49:43 F Herd file: autoDCF29126.HSIKVDB
1		Data Calibration	Scenario Prices	Report			Scanario no.: SHI_27823 Created by: vdmes Date: 6/16/2021 12:48:51
		Standard	Scenarie				
Save status 💙							Kopi af scenarie: 180
Manager 1	Key figure				Standard	Scenario	Unit
Contraction of the second s		rs that never get in heat		0	Standard 0.05	Scenario	Unit proportion, mellem 0 og 1
Disease		eren andere eren eren eren eren eren eren eren		0			
Disease Reproduction and Culling	43 Proportion of heifer 44 Sexed semen use,	eren andere eren eren eren eren eren eren eren	s		0.05	0.05	proportion, mellem 0 og 1
Youngstock Disease Reproduction and Culling Milk yield	43 Proportion of heifer44 Sexed semen use,45 Number of insemina	heifers	S	0	0.05	0.05	proportion, mellem 0 og 1 proportion, mellem 0 og 1
Disease Reproduction and Culling	43 Proportion of heifen44 Sexed semen use,45 Number of insemina46 Relative conception	heifers ations with sexed semen on heifers	S	0	0.05	0.05 1 2	proportion, mellem 0 og 1 proportion, mellem 0 og 1 antal
Disease Reproduction and Culling Milk yield	 43 Proportion of helfer 44 Sexed semen use, 45 Number of insemina 46 Relative conception 47 Chance of female conception 	helfers ations with sexed semen on helfers in chance of sexed dairy semen calf, sexed dairy semen	S	0 0 0	0.05	0.05 1 2 0.9	proportion, mellem 0 og 1 proportion, mellem 0 og 1 antal relativ risiko sandsynlighed
Disease Reproduction and Culling Milk yield -Control and Settings	43 Proportion of heifen44 Sexed semen use,45 Number of insemina46 Relative conception	helfers ations with sexed semen on helfers in chance of sexed dairy semen calf, sexed dairy semen parity 1 cows	S	0 0	0.05 0 0 0.9 0.92	0.05 1 2 0.9	proportion, mellem 0 og 1 proportion, mellem 0 og 1 antal relativ risiko

...and call it something like "sexed semen 180"

erview Herds			Overview)		Standard ID: SHI_29126 Created by: vdmes Date: 6/2/2021 12:49:43 Herd file:	
			Data Calibration Scenario Prices Report			autoDCF29126.HSIKVDB Scanario no.: SHI_2782 Created by: vdmes Date: 6/16/2021 12:48:5	
Simulation :			Comments × Give your scenario a (short) description Sexed semen 180			✓ Comments Kopi af scenarie: 186	11
		Key fig		Standard	Scenario	Unit	
Youngstock Disease		Propor		0.05	0.05	proportion, mellem 0 og 1	
Reproduction and Culling	44	Sexed		0	(1)	proportion, mellem 0 og 1	
Milk vield	45	Numb		0	2	antal	
-Control and Settings	46	Relativ		0.9	0.9	relativ risiko	
	47	Chanc		0.92	0.92	sandsynlighed	
	48	Sexed		0	0	proportion, mellem 0 og 1	
-Repro -Feeding	40					increased and the second se	
-Repro -Feeding -Yield	49	Sexed	Save Cancel	0		proportion, mellem 0 og 1	
-Feeding -Yield		Sexed Sexed	Save	0		proportion, mellem 0 og 1 proportion, mellem 0 og 1	
-Feeding	49	Sexed	of inseminations with sexed semen on parity 1 cows	-		8. (2	
-Feeding -Yield -Youngstock	49 50	Sexed		0		proportion, mellem 0 og 1	



11) The number of cows also increased after 6 to 10 years with 46, but the number of sold heifers is a lot higher now (the difference is 20, instead of 6 (see page 4)), because of the sexed semen.

	Standard	Scenario	Difference
Number of cow-years	133	179	46
Number of calvings	141	192	51
Replacement rate	26,9	27,7	0,8
-Number of Involuntary Cullings incl. mortality	18	24	6
-Number of Voluntary Cullings	18	26	8
Number of productive years per cow	3,7	3,6	-0,1
Lifetime production, kg ECM	45649	44327	-1323
Stillbirth, %	2,0	2,0	-0,1
Calf mortality, after birth, %	1,7	1,8	0,0
Number of alive born bull calves	65	72	7
Number of alive born crossbred-calves	14	19	5
Number of bought heifers	0	0	0
Number of sold heifers	17	37	20

12) Scroll down to the timeline for "cow-years. What do you see? Any difference compared to the first scenario? No! in case you can expand the herd in 2 years, using sexed semen doesn't make herd expansion go faster: it takes 9 months plus 2 years before the use of sexed semen results in more heifers.





13) What if we reduce the culling risk of the cow's? Go back to the overview (see step 7, page 5) and copy the first scenario again (red arrow). The second scenario is now *above* the first scenario (circle).

	1		Overview			
Overview Herds Marian 42113 Edit		11 🔳				Standard ID: Created by: Date: Herd file:
		Data Calibration	Scenario I	Prices	Report	
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Standard SH_29126 6/2/2021 12:49:43 PM						E
Created by: vdmes Other information: Herd file: autoDCF29126.HSIKVDB Calibration Calibration Create NEW scenario		-	e PDF (gener e PDF (breed		Scenario Scanario no: SHI 278239 Grouedry: Vomes Mate: 01/02/11248.51 PM Comments: Sexed semen 100 Comments: Sexed semen 1	
Download Report					Scenario Scanario no.: SHL_278215. Created by: vidmes Date: Gri6/202112.06.27 PM. Comments: 180 For an and the second sec	

14) Create this scenario and change the name of the scenario to "cull-5"

S. 121 S.					Overview					Standard ID: SHI Created by: vdme
rerview Herds rian 113 it			01 10		Q.					Date: 6/2/2021 1 Herd file: autoDCF29126.HS Scanario no.: Sł
-			Data	Calibration	Scenario	Prices	Report			Created by: vdm Date: 6/16/2021
			Sta	ndard		Scenarie				
Save status		Key figure								CR+10
Youngstock	19	Start breeding first parity	COWS				0	Standard	Scenario	Unit
Disease	18						0	44	44	dage efter kælvning
	19	Start breeding, other cow					0	44 44	(44) (44)	dage efter kælvning dage efter kælvning
Disease	19 20	Start breeding, other cow Heat observation rate					0	44 44 54	(44) (44) (54)	dage efter kælvning dage efter kælvning sandsynlighed
Disease Reproduction and Culling	19 20 21	Start breeding, other cow Heat observation rate Conception rate					0 0 0	44 44 54 46	(44) (54) (46)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighed
Disease Reproduction and Culling Milk yield	19 20 21 22	Start breeding, other cow Heat observation rate Conception rate Insemination period					0 0 0	44 44 54 46 12	(44) (54) (46) (12)	dage efter kælvning dage efter kælvning sandsynlighed sand ynlighed tal cyklusser
Disease Reproduction and Culling Milk yield -Control and Settings	19 20 21 22 23	Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling					69 69 69 69 69	44 44 54 46 12 9.1	44) 44) 54) 46) 12) 4,1	dage efter kælvning dage efter kælvning sandsynlened sand snilghed hefal cyklusser basis risiko
Disease Reproduction and Culling Milk yield -Control and Settings -Repro	19 20 21 22 23 24	Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling Limit for buying helfers.					69 69 69 69 69 69	44 44 54 46 12 9.1 126	44) 44) 54) 12) 46) 12) 4,1) 126)	dage efter kælvning dage efter kælvning sandsynlighed sand vhlighed dal cyklusser basis risiko antal køer
Disease Reproduction and Culling Milk yield -Control and Settings -Repro -Feeding	19 20 21 22 23 24 25	Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling Limit for buying heifers.	/S				69 69 69 69 69	44 44 54 46 12 9.1	44) 44) 54) 46) 12) 4,1	dage efter kælvning dage efter kælvning sandsynlened sand sniighed heal cyklusser basis risiko





15) Now you can see that expansion goes faster.

16) What if we buy heifers? Change the "Limit for buying heifers to 170". This means that the model will always make sure that the herd has at least 170 heifers. On the first day of simulation this results in the herd buying 37 heifers (because the herd has 133 cows today and heifers are bought until the herd has 170 cows (37+133=170)).

erview Herds an 13			01 10 Data	Calibration	Overview	Prices	Report)		Standard ID: SHI_29 Created by: vdmes Date: 6/2/2021 12:49: Herd file: autoDCF29126.HSIKVI Scanario no.: SHI_27 Created by: vdmes Date: 6/16/2021 1:06:
			Sta	indard		Scenarie				
Save Simulation :										<u>Comments</u> Kopi af scenarie: 1
Youngstock	10	Key figure	COME				0	Standard	Scenario	Unit
		Start breeding, first parity					0	44	(44)	dage efter kælvning
Youngstock Disease Reproduction and Culling	19	Start breeding, first parity Start breeding, other cow					0	44	44) 44)	dage efter kælvning dage efter kælvning
Disease	19 20	Start breeding, first parity Start breeding, other cow Heat observation rate					0	44 44 54	44) 44) 54)	dage efter kælvning dage efter kælvning sandsynlighed
Disease Reproduction and Culling Milk yield	19 20 21	Start breeding, first parity Start breeding, other cow Heat observation rate Conception rate					0 0 0	44 44 54 46	(44) (54) (46)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighea
Disease Reproduction and Culling	19 20 21 22	Start breeding, first parity Start breeding, other cow Heat observation rate Conception rate Insemination period					0 0 0	44 44 54 46 12	(44) (44) (54) (46) (12)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighed antal cydusser
Disease Reproduction and Culling Milk yield -Control and Settings	19 20 21 22 23	Start breeding, first parity Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling					9 9 9 9 9	44 44 54 46 12 9.1	 44 44 54 46 12 9.1 	dage efter kælvning dage efter kælvning sandsynlighed antal cydusser bæs risiko
Disease Reproduction and Culling Milk yield -Control and Settings -Repro	19 20 21 22 23 24	Start breeding, first parity Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling Limit for buying helfers.					9 9 9 9 9 9	44 44 54 46 12 9.1 126	(44) (44) (54) (12) (9.1) (170)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighed antal of susser brafs risiko antal køer
Disease Reproduction and Culling Milk yield -Control and Settings -Repro -Feeding	19 20 21 22 23 24 25	Start breeding, first parity Start breeding, other cow Heat observation rate Conception rate Insemination period Other culling	S.				9 9 9 9 9	44 44 54 46 12 9.1	(44) (44) (54) (12) (9.1) (170) (0)	dage efter kælvning dage efter kælvning sandsynlighed sandsynlighed antal conusser beats risiko



17) This goes a lot faster!



18) Make a summary of the 4 scenarios. See below. Put a tick mark in all the boxed next to the scenario and click on "Create PDF".

	Overview	
Overview Herds	11 P	
Edit	Data Calibration Scenario Prices Report	
	Standard Scenarie	
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SH_29126 6/2/2021 12:49:43 PM		
Created by: vdmes Other information: Herd file: autoDCF29126.HSIKVDB	Create PDF (general) Create PDF (breeding) Create PDF (breeding)	
Calibration Create NEW scenario	Scenario Prices Report	
Download Report	Scenario Scanario no.: SHI_278240 Created by: vdms Date: 6/16/2021.01:34 PM	
	Comments: cull-4	
	Scenario Prices Report	
	Scenario Scanario no.: SHI_278239 Created by: vdmes Date: 6/16/2021/124/651 PM Comments: Sexed semen 180	
	Scenario Prices Report	
	Scenario Scanario no.: SHI_278215 Created by: vdmes Date: 6/16/2021 12:06.27 PM	



19) The bar chart shows the result for years 6 to 10. The scenario for "buy170" is the same for year 6 to 10; the long-term situation is the same. The table shows the same results as the ones presented on the previous pages; this PDF is just a summary of the same scenario.



16th June 2021

Economics of management changes Herd ID: 42113

The bar chart shows changes in Gross Margin (GM) per year for up to 7 scenarios compared to the Standard (status quo).



Technical results from the simulation

	Standard	1)180	2)Sexed	3)cull-4	4)buy170	5)	6)	7)
Cow-years	133	46	46	46	46	0	0	0
Calvings	141	49	51	44	50	0	0	0
Replacement rate	27	0	1	-4	0	0	0	0
ECM/cow-year	12282	-6	8	90	-1	0	0	0
Sold heifers	17	6	20	11	6	0	0	0
Youngstock Need for labor*	128	45 27.9	81 33.2	38 27.0	45 27.9	0	0	0.0

* Hours per week. Estimated time use, based on a Danish project on time-registration on dairy farms (www.seges.dk).

But the development of Margin per year is quite different. In the "buy170" scenario the increase in Gross margin (TB) is a lot faster. This is important since the farmer already has invested in the stable-capacity.

Utveckling av förändringen i TB per år

Nivån i åren 6 till 10 i figuren nedan överensstämmer med stapeldiagrammet.



We do NOT include that there is a risk of introducing disease into the herd, when buying heifers from another farm! That is a risk you have to assess in discussion with the farmer.



20) If you want to know precisely how much the margin is different in the first years, you have to go back in the single reports. See below:

	Overview	
Overview Herds Marian 42113 Edit	1 Image: Standard ID: Created by: Date: 1 Image: Standard ID: Created by: Date: Herd file:	
	Data Calibration Scenario Prices Report Standard Scenarie	
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Download Report	Scenario Scanario no: SHI_276240 Created by: volmes Date: 676/2021 1:01:34 PM Comments: cull-4 Figure Prices Report	

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verview Herds Irian 113					01 10		Overview			Standard II Created by Date: 6/2/ Herd file: autoDCF29 Scanario n
it					Data	Calibration	Scenario	Prices	Report	Created by Date: 6/10
					Sta	andard		Scenarie		
Gross M Year	Margin per yea Standard	ar Scenario	Difference	Difference, net present	value					
	10 12 10 10 10 EA		Difference € 35.251	Difference, net present €33.	2010/02/02					
Year	Standard € 296.575 € 279.531	Scenario € 331.826 € 386.313	€ 35.251 € 106.782	€ 33.	396 726					
Year 1 2 3	Standard € 296.575 € 279.531 € 289.294	Scenario € 331.826 € 386.313 € 389.599	€ 35.251 € 106.782 € 100.305	€ 33. € 98. € 89.	396 726 171					
Year 1 2 3 4	Standard € 296.575 € 279.531 € 289.294 € 288.357	Scenario € 331.826 € 386.313 € 389.599 € 388.079	€ 35.251 € 106.782 € 100.305 € 99.723	€33. €98. €89. €85.	896 726 171 243					
Year 1 2 3 4 5	Standard € 296.575 € 279.531 € 289.294 € 288.357 € 288.058	Scenario € 331.826 € 386.313 € 389.599 € 388.079 € 388.452	€ 35.251 € 106.782 € 100.305 € 99.723 € 100.394	€ 33. € 98. € 89. € 85. € 82.	896 726 171 243 516					
Year 1 2 3 4 5 6	Standard € 296.575 € 279.531 € 289.294 € 288.357 € 288.058 € 288.299	Scenario € 331.826 € 386.313 € 389.599 € 388.079 € 388.452 € 387.865	€ 35.251 € 106.782 € 100.305 € 99.723 € 100.394 € 99.567	€ 33. € 98. € 89. € 85. € 82. € 78.	396 726 171 243 516 589					
Year 1 2 3 4 5 6 7	Standard € 296.575 € 279.531 € 289.294 € 288.357 € 288.058 € 288.299 € 288.299 € 287.839	Scenario € 331.826 € 386.313 € 389.599 € 388.079 € 388.452 € 387.865 € 387.347	€ 35.251 € 106.782 € 100.305 € 99.723 € 100.394 € 99.567 € 99.508	€ 33. € 98. € 89. € 85. € 82. € 78. € 78. € 75.	396 726 171 243 516 589 518					
Year 1 2 3 4 5 6	Standard € 296.575 € 279.531 € 289.294 € 288.357 € 288.058 € 288.299	Scenario € 331.826 € 386.313 € 389.599 € 388.079 € 388.452 € 387.865	€ 35.251 € 106.782 € 100.305 € 99.723 € 100.394 € 99.567	€ 33. € 98. € 89. € 85. € 82. € 78.	396 726 171 243 516 589 518 379					

"Net present value" is today's value of a future stream of payments (Wikipedia): today's value of money that you receive in the future.