



Hochschule Neubrandenburg
University of Applied Sciences

STATUS AND ECONOMIC IMPLICATIONS OF ANIMAL WELFARE IN DAIRY FARMING

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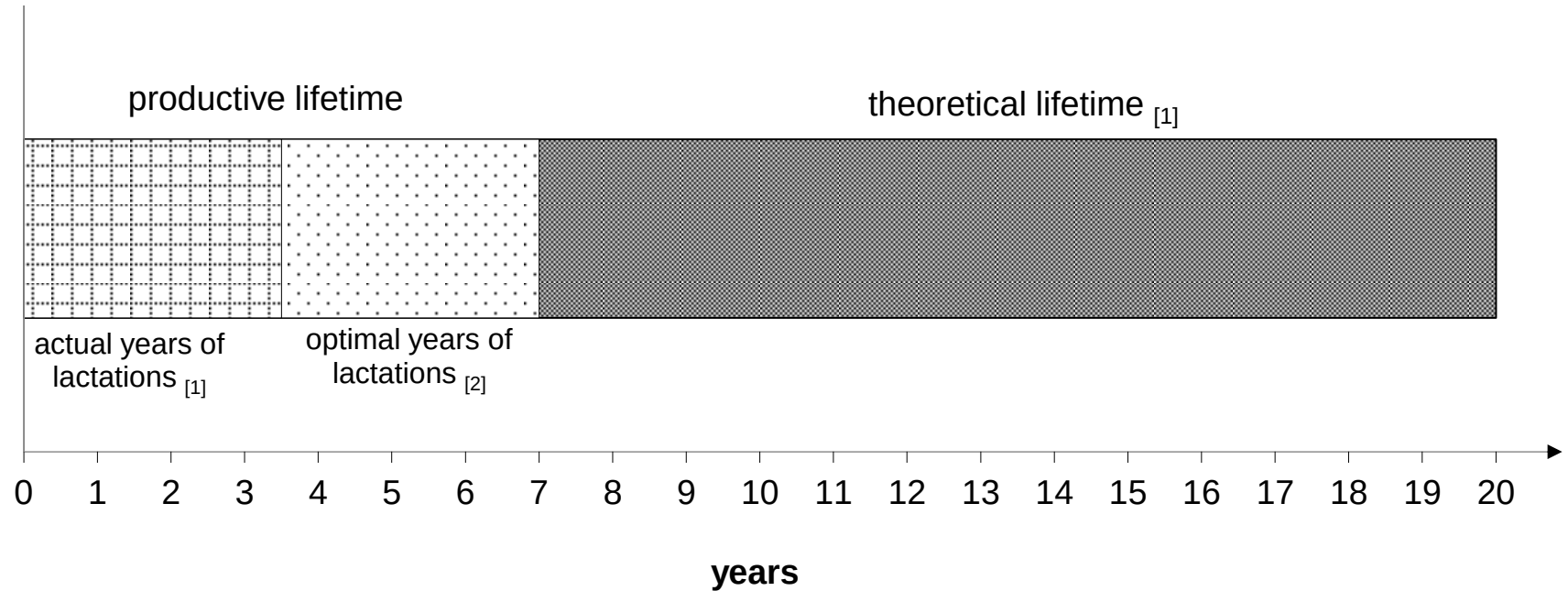
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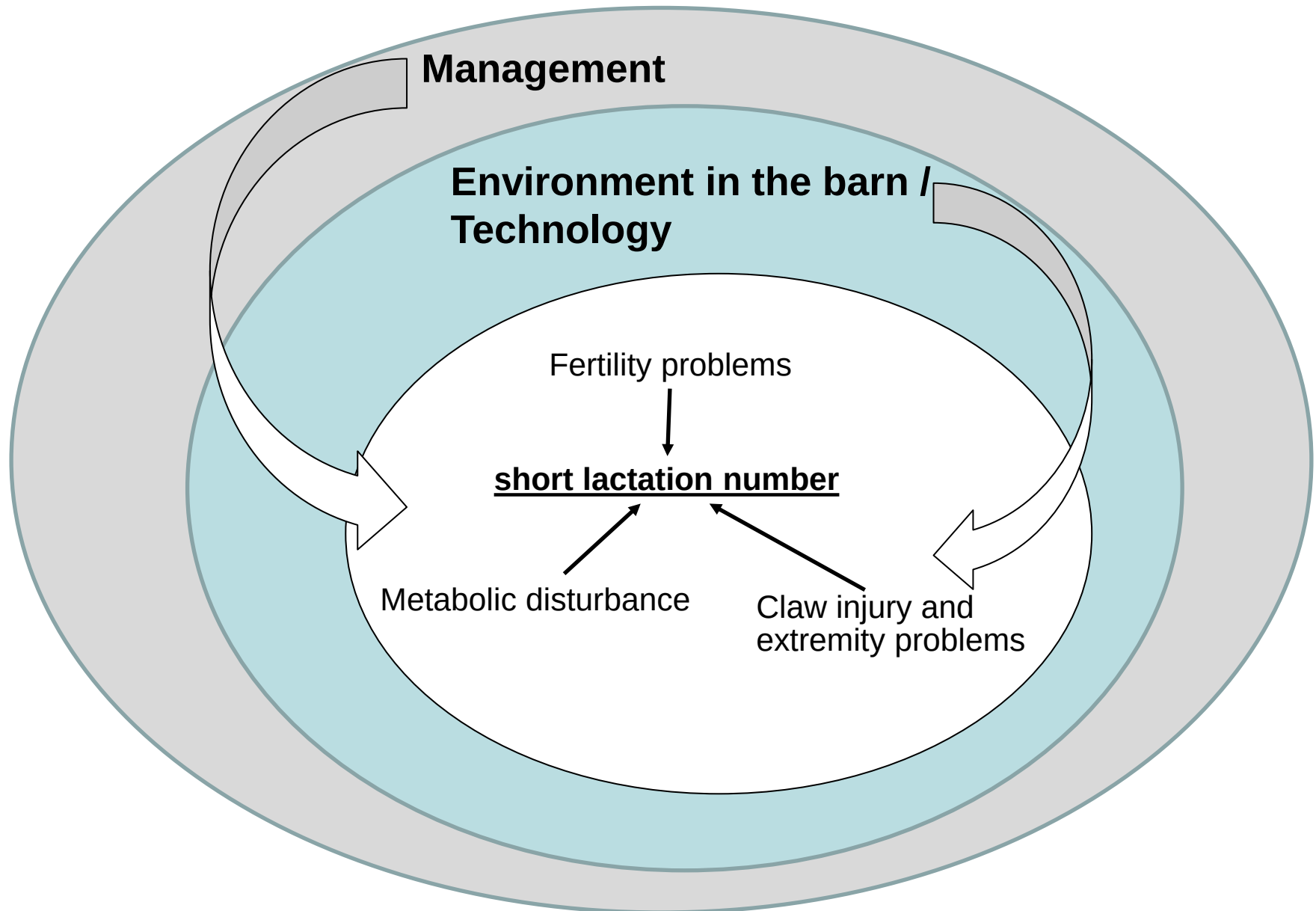
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Productive and theoretical lifetime of Holstein Friesian Cows



Factors causing short lactation numbers in dairy herds



1. Research Program

"Animal welfare and economic efficiency in future-oriented dairy farming - evaluation of various measures and their economic impact".

3-year research program; funded by the Federal Ministry of Education and Research



GUT WAMCKOW



Lehr- und Versuchsanstalt für Tierzucht und Tierhaltung e.V.
Ruhlsdorf/Groß Kreutz



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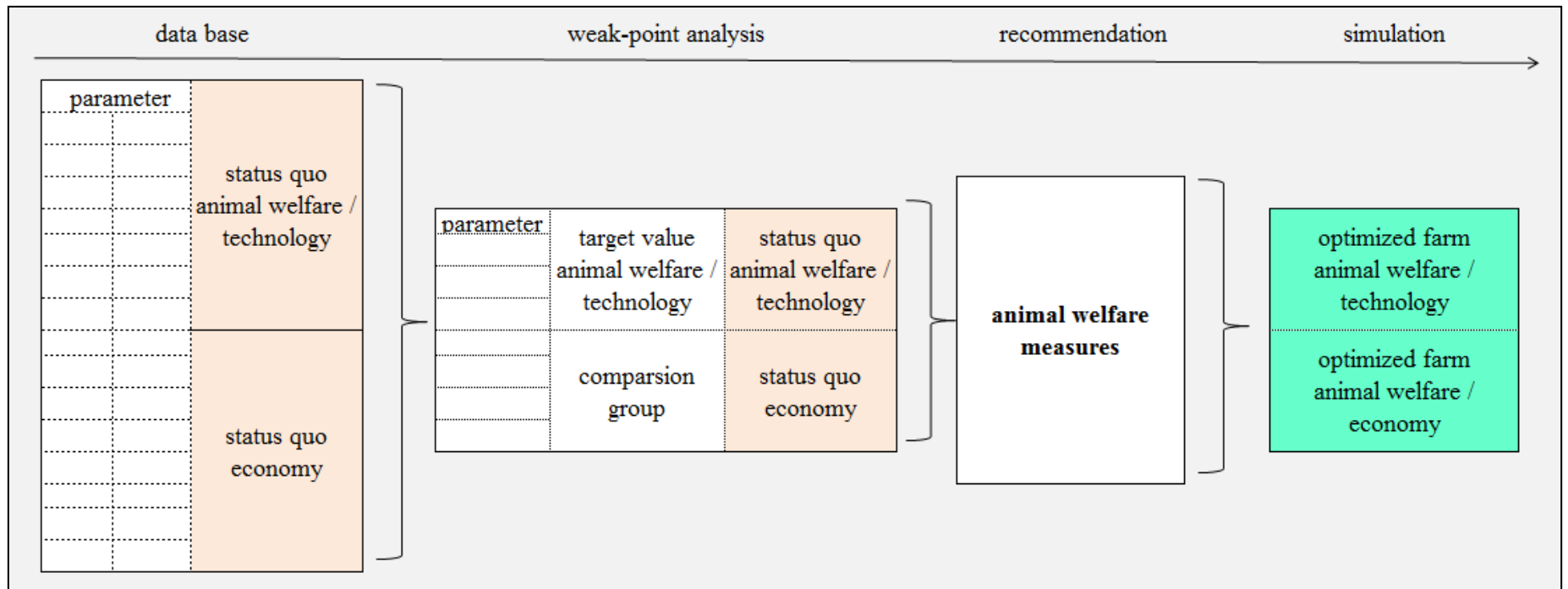
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Goals

- ✓ Analysis of the status quo of animal welfare in dairy herds
- ✓ Recommendations for animal welfare in dairy farming
- ✓ Illustration of the economic effects of increasing animal welfare requirements

2. Proceeding

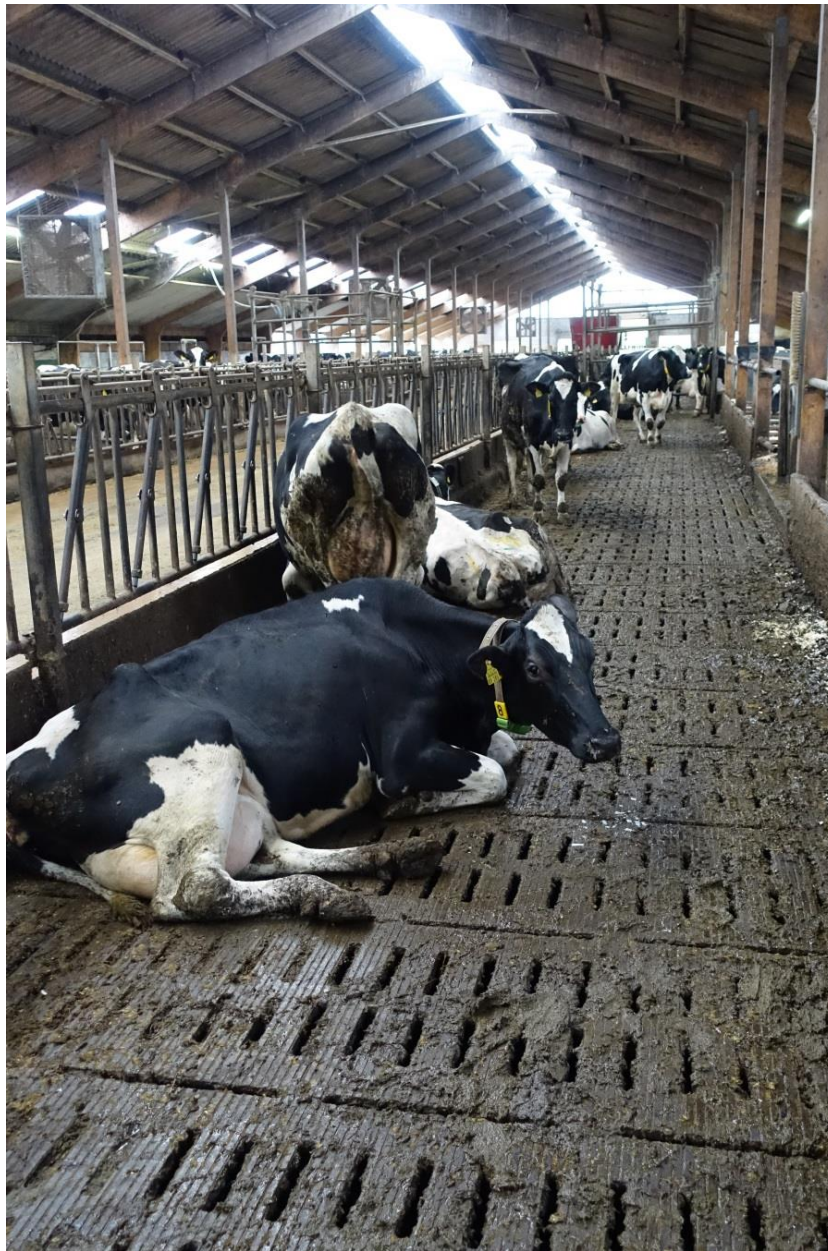
❖ Farm size: 32 farms, 100 – 2,600 milk cows



3. First results

No	Weakness	Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Farm 7	Farm 8	Frequency of weak points
1	No / too small paddock	x	x	x	x		x	x	x	7
2	No / broken brushes	x	x	x	x		x	x	x	7
3	Floor of moving area dirty			x			x			2
4	Floor of moving area uneven	x							x	2
5	Floor of moving area slippery		x	x			x			3
6	Repair if loose and broken elements		x	x		x			x	4
7	Incorrect cubicle dimensions		x	x		x	x	x		5
8	Too few cows lying in the cubicles	x		x						2
9	Lying on the floor of the moving area			x					x	2
10	Cows are dirty	x	x	x		x	x	x		6
11	Cubicles are dirty	x		x		x				3
12	Insufficient bedding material in the cubicle	x		x		x	x	x		5
13	Hairless spot or increase in circumference of limbs	x	x	x		x	x	x		6
14	the cows show reluctance lay down		x			x	x	x		4
15	Lowering of the head during walking	x	x	x	x	x	x	x		7
16	Lameness		x	x			x	x		4
17	Poorly position of the drinking trough				x		x			2
18	Illumination	x			x		x	x	x	5
19	Barn climate	x			x	x	x	x		5
20	Extremity injury			x				x		2
21	Dead end						x			1
22	Hoof problems							x	x	2
23	Passes are dirty					x		x		2
24	Drinking troughs are dirty							x	x	2
	Total number of weak points per farm	11	10	15	6	10	15	15	8	







Short-term measures and their costs

Farm		Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Farm 7	Farm 8
Herd size, number of cows		220	1.200	800	253	99	444	810	395
Milk yield, kg per cow		9.816	9.887	9.500	9.913	7.728	9.711	8.969	8.500
Animal welfare measure	Yearly costs per unit, €	Type and number of recommended measures							
Brushes	227 €	4	22	15	5		8	15	7
Change of the position of the drinking trough	120 €				10		5		
Improvement of floor cleanliness	1.476 €			8			4		
Additional care of the cubicles	14 €	220		800		99			
Repair of loose and broken parts	60 €		1	1		1			1
Change of the position of the neck pipe	0,75 €		1.200	800		99	444	810	
Additional bedding material	46 €	220		800		99	123	506	
Optimization of illumination	17 €				253		444	506	395
Ventilation	120 €	3			3	1	4	10	
hoof bath	49 €							1	1
Hoof trimming	11 €							810	395
Cleaning of the drinking trough	5 €							32	1
Costs per kg milk, € p.a.		0,007 €	0,001 €	0,008 €	0,003 €	0,008 €	0,005 €	0,006 €	0,004 €

Long-term measures and their costs

Farm		Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Farm 7	Farm 8
Animal welfare measure	Yearly costs per unit, EUR	Type and number of recommended measures							
Floor replacement in the moving area	6 €	220	1.200	800					395
Open barn side for barn climate	480 €	1							
Paddock installation	384 €	220	500	800	253		123	810	395
Reconstruction of the cubicles	323 €		1.200	800		99		506	
Reconstruction of the barn	370 €						123		
Costs per kg milk, € p.a.		0,040 €	0,049 €	0,075 €	0,039 €	0,042 €	0,022 €	0,065 €	0,046 €

Annual costs for short- and long term measures per cow and per kg milk, in EUR

Farm		Farm 1	Farm 2	Farm 3	Farm 4	Farm 5	Farm 6	Farm 7	Farm 8
Sum	Costs per kg milk, € p.a.	0,05 €	0,05 €	0,08 €	0,04 €	0,05 €	0,03 €	0,07 €	0,05 €
	Costs in % of milk price	15,53	16,65	27,81	13,86	16,63	8,90	23,89	16,56

...in GBP:

Sum	Costs per kg milk, £ p.a.	£ 0,041	£ 0,044	£ 0,074	£ 0,037	£ 0,044	£ 0,024	£ 0,063	£ 0,044
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4. Conclusion

- ❖ The animal welfare status is not up to date in most farms
- ❖ Higher investments in management and technology are necessary and should be taken into consideration when building new barns
- ❖ Expected positive effects could be:
 - ❖ decreasing veterinary costs
 - ❖ increase of lactation number while increase of lifetime production
 - ❖ improvement in consumer acceptance

Find new ways. Let's go!



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- [2] Mißfeldt, F.; R. Mißfeldt, K. Kuwan (2015); Zur ökonomisch optimalen Nutzungsdauer von Milchkühen; In: Züchtungskunde 2/2015, 87: 120-143

