A pilot study on tail and ear lesions in suckling piglets

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Lesions in suckling piglets

- most lesions in face: struggles for access to udder
  (Zoric et al. 2004; Lewis et al., 2006)

- also studies about lesions on tails, ears, claws or joints
  (Mouttotou et al., 1999; Van Nieuwamerongen et al., 2015)

- no studies about risk factors for tail and ear lesions considering many possible factors

➢ aim: determination of risk factors for tail and ear lesions in suckling piglets with a focus on management and housing of piglets and sows

Data collection

- overall 85 litters on 8 farms throughout Germany

parameter	median	minimum	maximum
assessed litters per farm	10	9	16
piglets per litter	13	10	14
age of piglets (d)	15	2	23

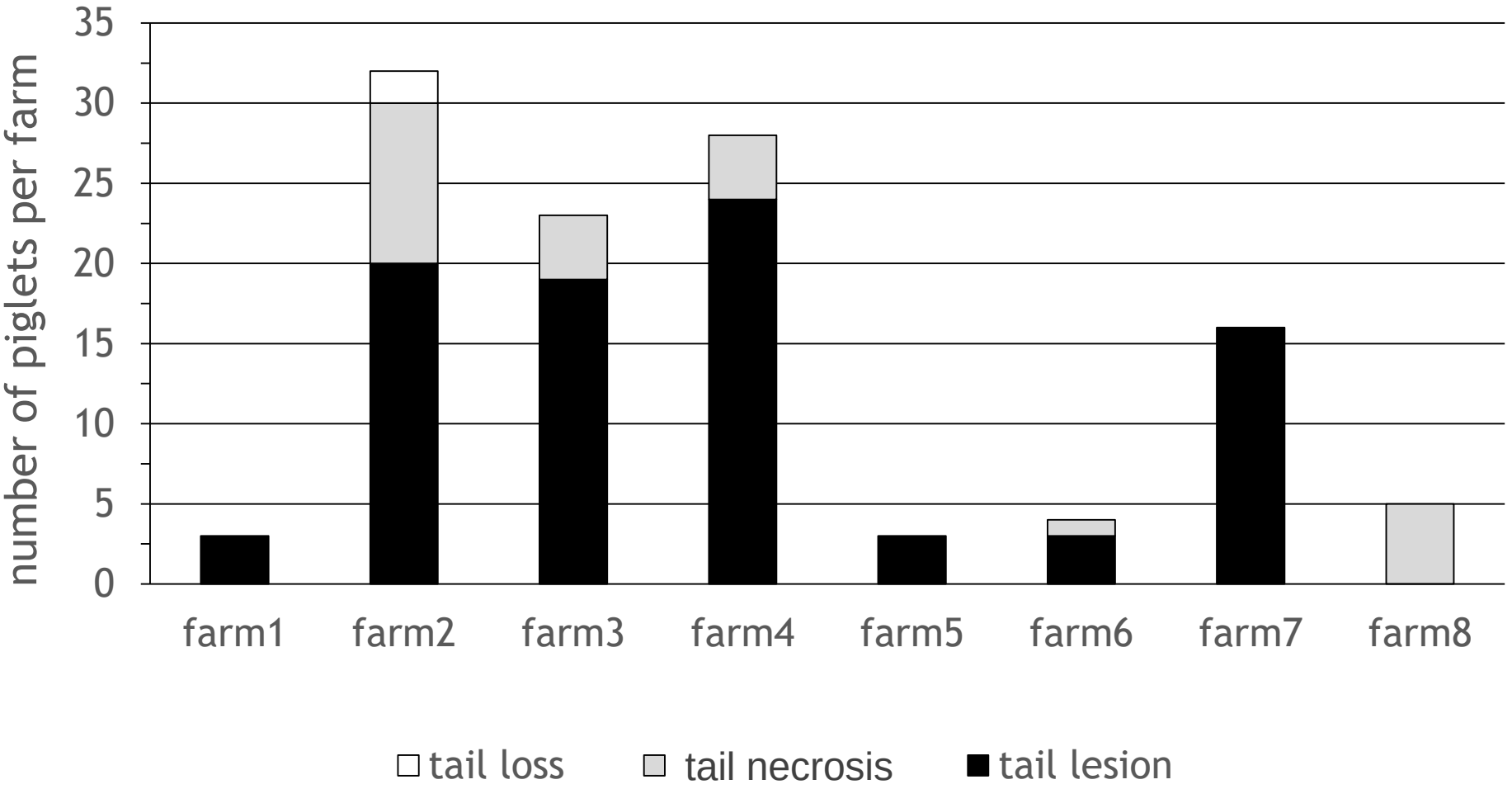
- assessment of
  - housing and management data of sows and piglets
  - tail and ear alterations (lesion, necrosis, loss) in piglets

Data collection

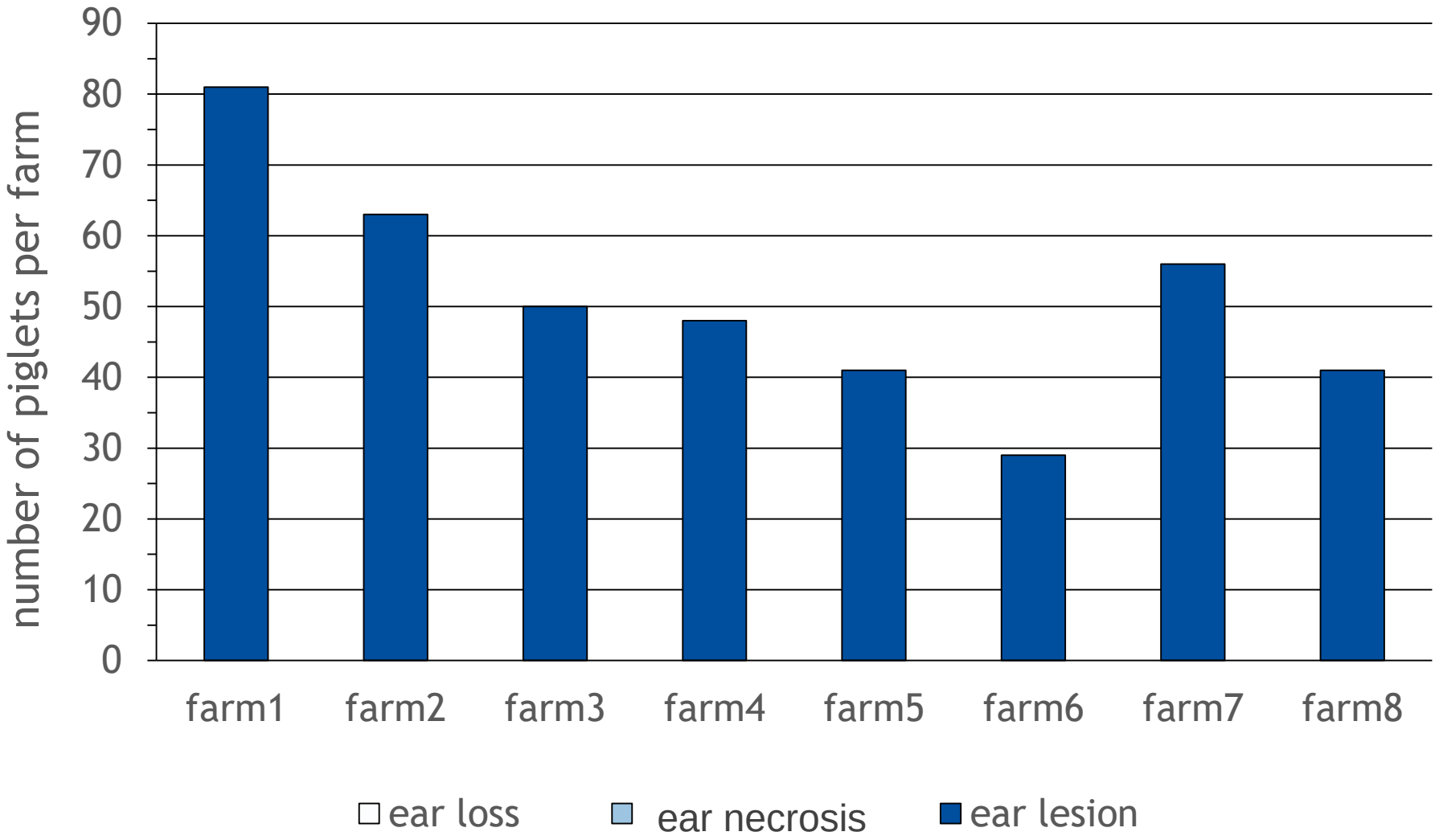
➢ similar management and housing conditions of sows and piglets:

- fixation crates for sows
- plastic slatted floors (except of piglet creep area)
- good quality of flooring (no sharp edges)

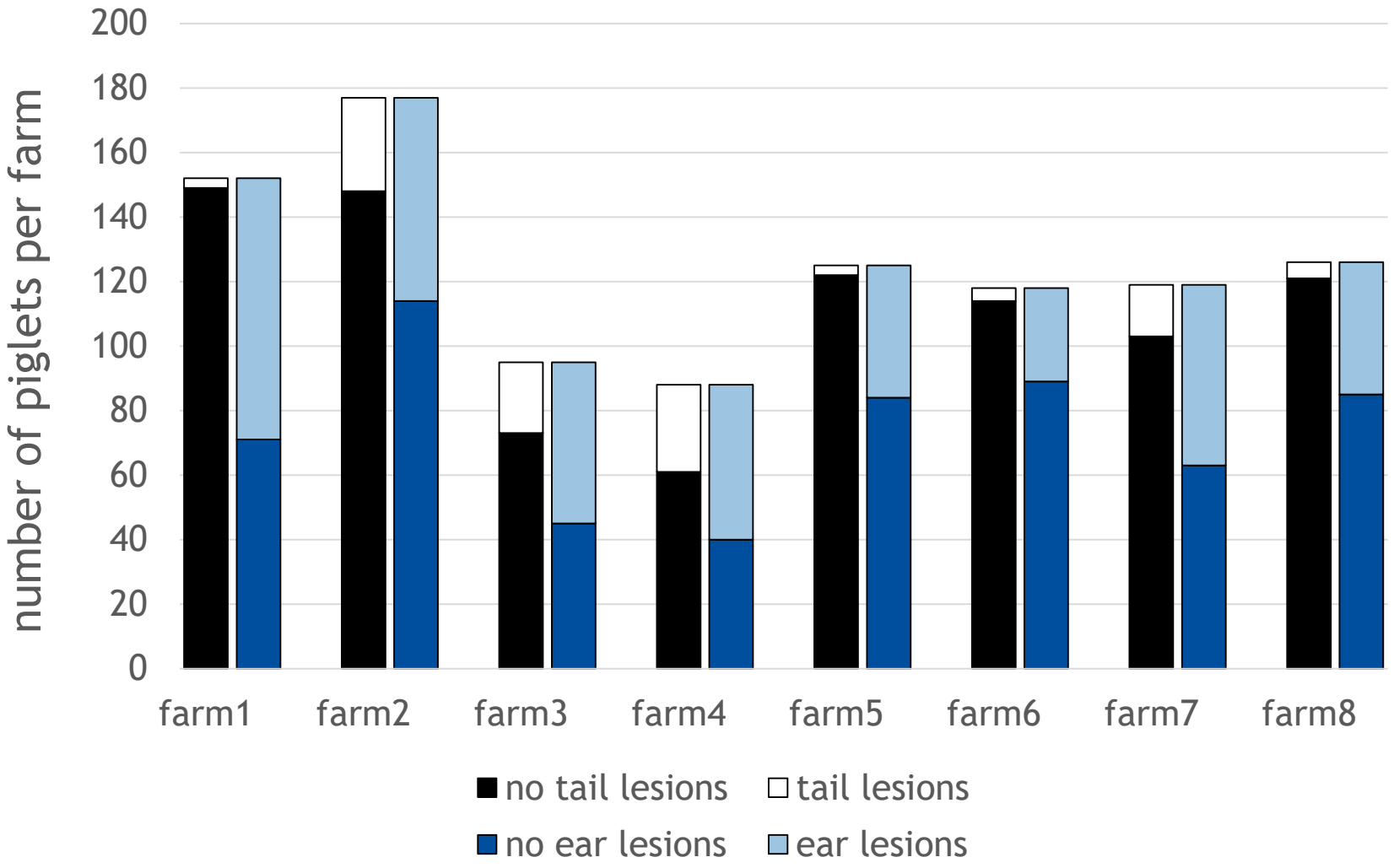
Tail alterations

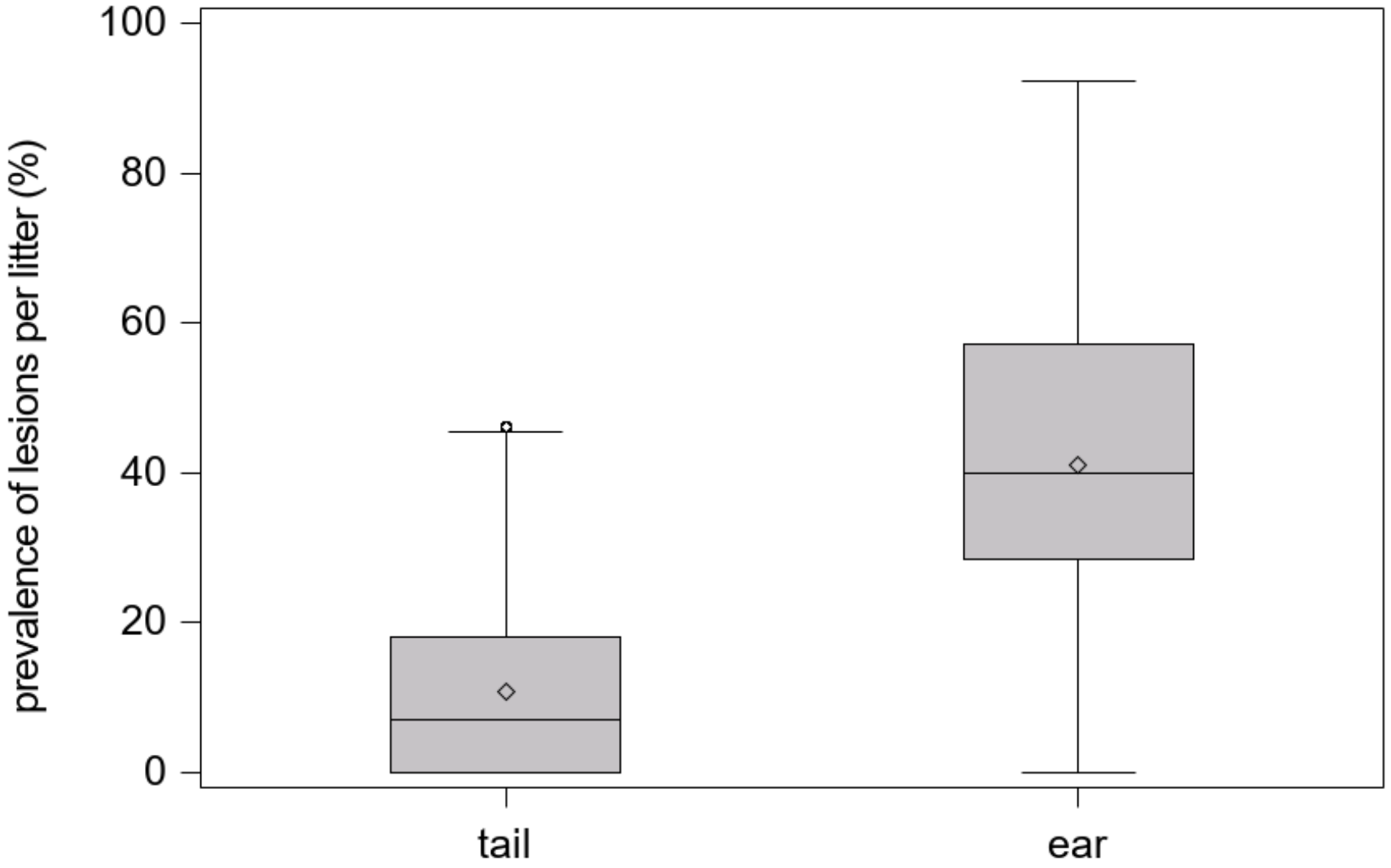


Ear alterations



Combined lesion variables



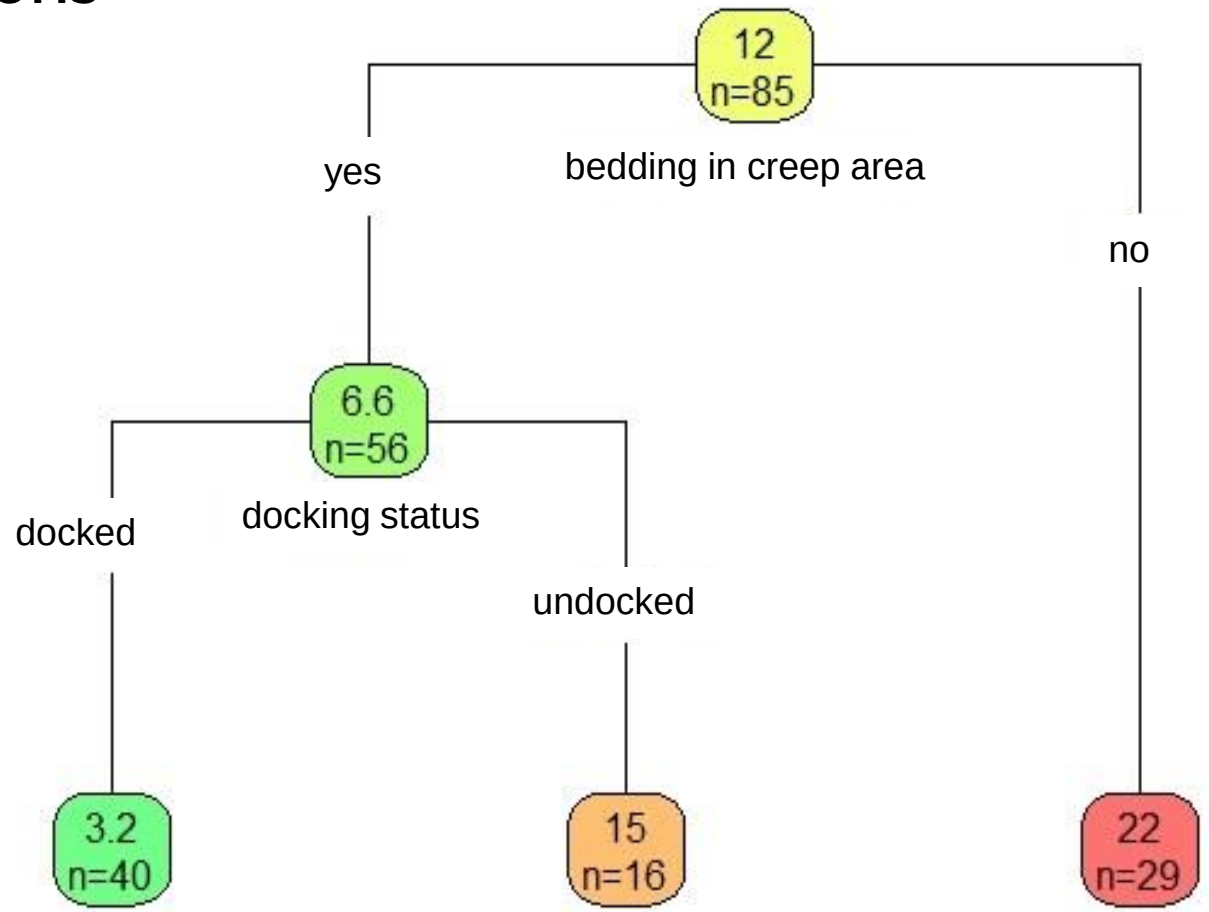


(n = 85 litters)

Data analysis

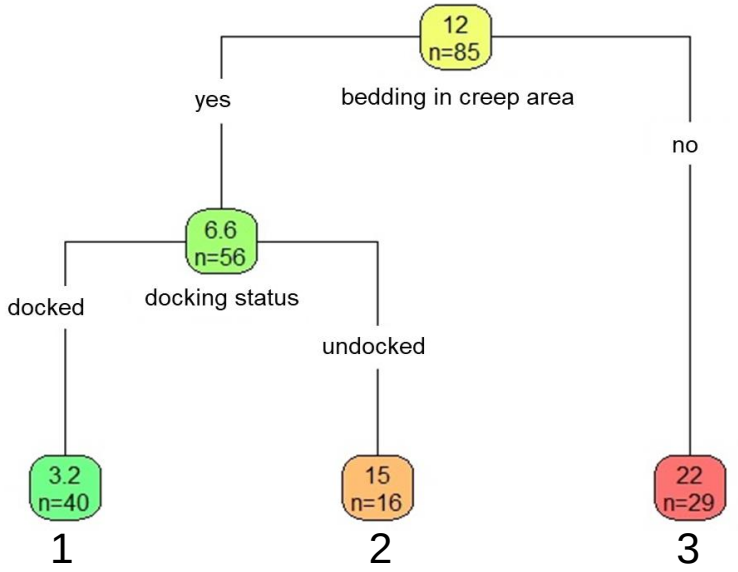
- regression tree analysis in R 3.4 (R Core Team, 2017)
- outcome variable: prevalence of tail or ear lesions at litter level
- 18 explanatory variables (continuous, categorical)
- three-fold cross validation
- at least 10 observations per final node

Tail lesions



Tail lesions

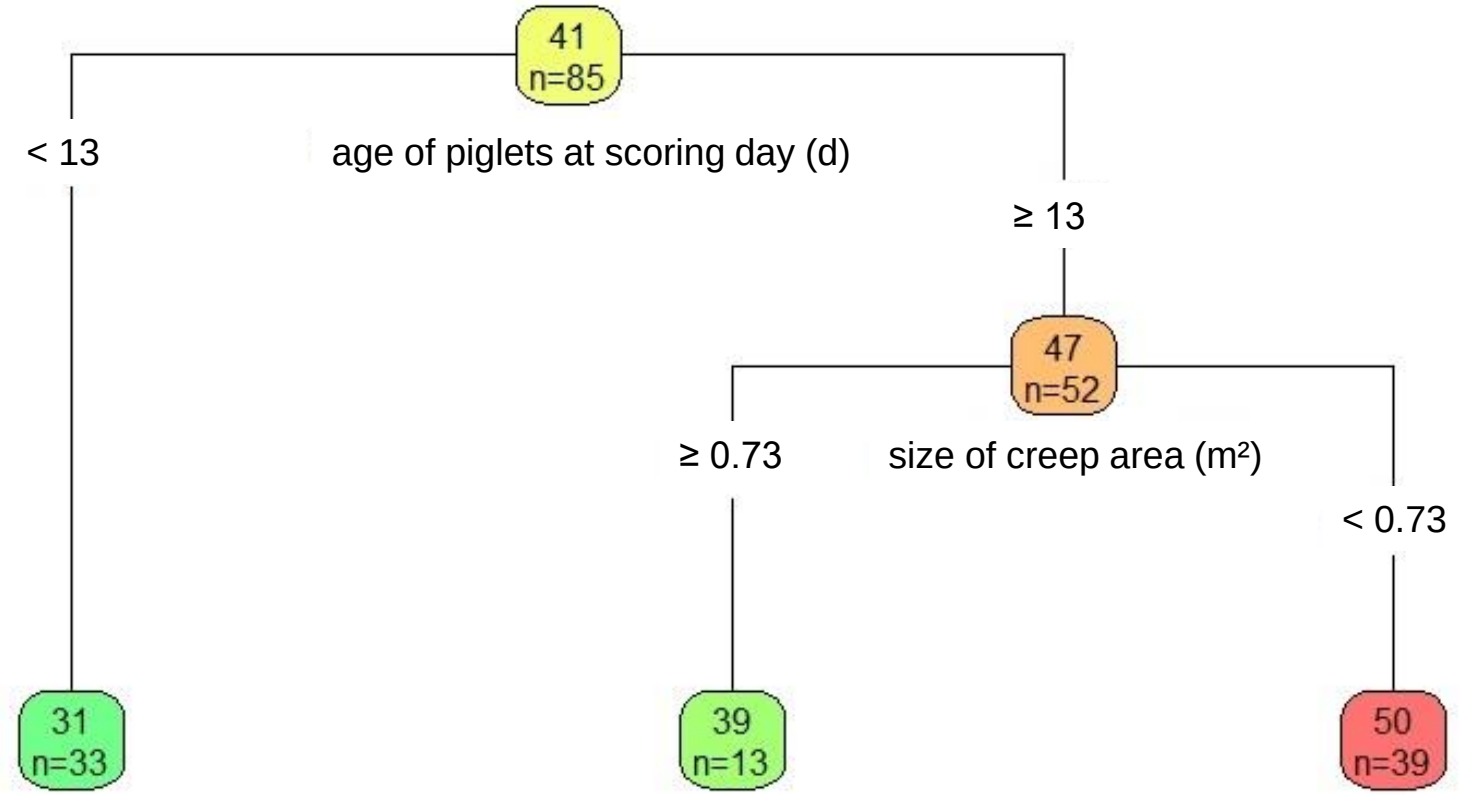
number of farms per node
1: four farms
2: one farm
3: three farms



Spearman correlation coefficient between predicted and observed prevalence

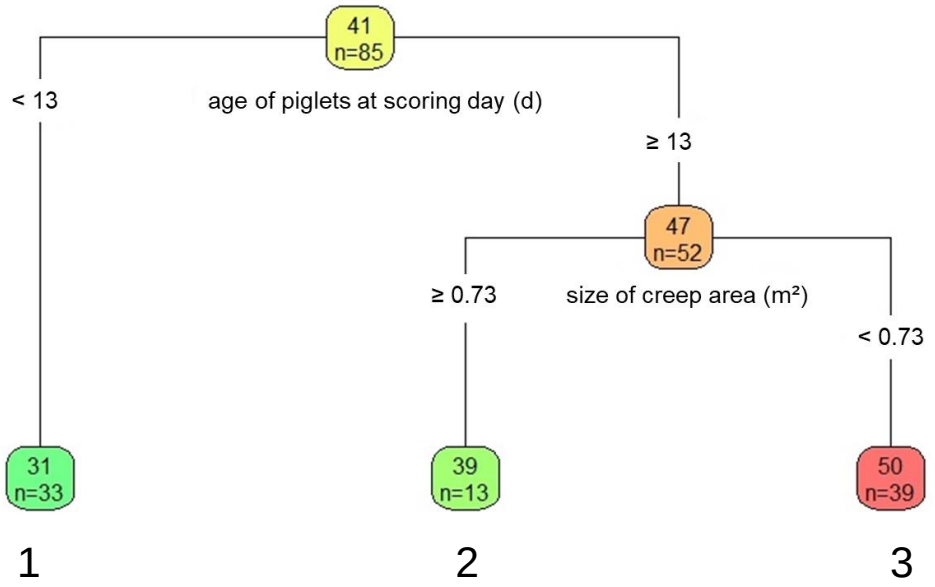
$r_s = 0.67$

Ear lesions


41
n=85
< 13
age of piglets at scoring day (d)
≥ 13
47
n=52
≥ 0.73
size of creep area (m²)
< 0.73
31
n=33
39
n=13
50
n=39

Ear lesions

number of farms per node
1: five farms
2: one farm
3: five farms



Spearman correlation coefficient between predicted and observed prevalence

$r_s = 0.41$

Discussion

- quality of piglet creep area important
  - bedding: desinfection and enrichment
  - size: big enough for all suckling piglets

- reduction of tail lesion prevalence by tail docking
  - stump harder to grasp
  - stump more sensible

- more lesions in older piglets
  - more struggles because of determined teat order
  - more struggles because of competition for place in creep area (→ size of creep area!)

Conclusions

- housing of piglets as influencing factor for tail and ear lesions
- more information about tail and ear status of piglets needed
- assessment of more piglets on more farms necessary
- information about carry-over effect: assessment of same pigs before and after weaning required

Thank you for your attention!

Questions?

rentenbank
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References

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Explanatory variables

influencing factors for ear lesions

continuous variables

level	factor	med	min	max	q25	q75	missing n
farm	number of total born piglets per litter	13.4	15.4	16.8	15.1	16.0	0
	number of piglets weaned per litter	12.6	10.6	13.4	12.0	13.0	0
	weight at weaning (kg)	8.0	6.0	9.0	7.2	8.3	10
	suckling piglet losses (%)	18.2	16.5	23.8	17.8	20.9	0
litter	size of piglet creep area (m^2)	0.6	0.5	0.9	0.5	0.7	0
	size of farrowing pen (m^2)	4.0	2.6	4.8	3.8	4.3	0
	age of piglets at scoring day (d)	15.0	2.0	23.0	8.0	18.0	0

categorical variables

level	factor	answer categories	n	%	missing
farm	weaner pig losses (%)	> 2.5	4	50.0	0
		≤ 2.5	4	50.0	
	daily weight gain of weaner pigs (g/d)	≥ 500	1	14.3	1
		< 500	6	85.7	
	drinker for suckling piglets	nipple drinker	4	50.0	0
		open water surface (e.g. trough)	4	50.0	

categorical variables

influencing factors for tail lesions

level	factor	answer categories	n	%	missing
litter	supplementary milk feeding	yes	10	11.8	0
		manual	46	54.1	
		none	29	34.1	
	enrichment for piglets	organic	20	23.5	0
		inorganic	35	41.2	
		none	30	35.3	
	creep area covered	yes	29	34.1	0
		no	56	65.9	
	creep area heated	heating in floor	45	52.9	0
		heating lamp	10	11.8	
		combination of both heating	30	35.3	
	straw in piglet creep area	yes	56	65.9	0
		no	29	34.1	
	castration of piglets	yes	65	76.5	0
		no	20	23.5	
	docking status	docked	69	81.2	0
		undocked	16	18.8	
	lesions on carpal joints	yes	46	54.1	0
		no	39	45.9	