

# Feather pecking and cannibalism in organic laying hen flocks



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# Aims

- Part of Healthy Hens project
- Identify risk factors for FP and wounds
- Recommendations for farmers and policy makers
- Reduce FP and wounds

# Organic egg production

- No beak trimming
- Max group size 3000
- 6 hens / m<sup>2</sup>
- Free range area 4 m<sup>2</sup> / hen
- 95% organic feed
- In some countries up to 22% of table eggs



# Feather pecking and wounds

- Indicator for reduced welfare in both actor and victim
- Economic problem
- FP in rearing predicts FP during lay
- Behaviour is irreversible
- Damage very visible
- Wounds and feather damage related



# Methods

- 8 countries: Austria, Belgium, Denmark, Germany, Italy, The Netherlands, Sweden, United Kingdom
- 107 flocks
- End of lay: 50 hens per flock
- Tauson scoring of neck, back, belly & tail
- Housing and management: interviews and measurements
- Per flock: % of hens with FPD and % hens with wounds
- Statistics: preselection by partial correlation analyses and linear regression. Final model by GLM.

## Hen feather pecked



Mean feather score of  
4 body parts  $\leq 3,00$

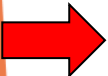
## Hen with wound



Mean wound score of  
2 body parts  $\leq 3,50$

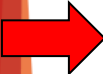
# Preselection: factors that matter FP

Factor	N	Corr coeff	p	Mean (min-max)
No weeks pre-lay feed	81	0,328	0,014	1 (0-7)
Protein content 55 wks	73	-0,395	0,003	18 (15-22)
Methionin 55 wks	65	-0,316	0,021	0,35 (0,28-0,40)
% hens in wintergarten	84	-0,238	0,046	30 (0-83)
% hens in free range	84	-0,247	0,038	18 (0-64)
Anthelmintic treatments	82	0,220	0,042	0,5 (0-3)
Alternative treatments	82	0,202	0,062	0,5 (0-5)

 More hens with feather damage if longer pre-lay feed, lower protein, lower methionin, less hens in wintergarten / free range, more treatments

# Preselection: factors that matter FP

Factor (no/yes)	N	Corr coeff	P
Only 1 diet till 55 wks	85	-0,309	0,004
Litter replacement	80	-0,334	0,020
Litter topping	80	-0,393	0,001
Daily access free range	80	-0,280	0,012
Roughage rearing	52	0,317	0,022
Daylight	87	-0,200	0,063
Needle vaccination after rearing	84	0,369	0,001

 More hens with feather damage in case of more feed phases, no litter topping, no daily free range, roughage, no daylight, needle vaccination after rearing



# Final model feather damage

% of hens with feather damage =

$134 - 6,8 * (\text{protein 55 wks}) + 21,6 * (\text{no daily free range})$

P protein  $\leq 0,004$

P daily free range  $\leq 0,001$

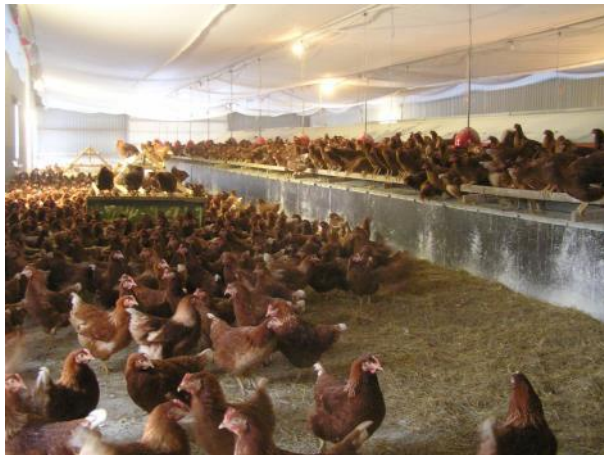
30% of variation explained



# Final model feather wounds

% of hens with wounds =  
 $10,9 + 11,5 * (\text{no daily free range})$

P daily free range  $\leq 0,001$   
14% of variation explained



# Discussion - Feed risk factors

- Longer pre-lay feed
- Lower protein content
- Lower methionin
- More feed phases



Explanation roughage in rearing?!?

# Discussion – Management risk factors

Lower % hens in wintergarten

Lower % hens in free range

● No daily free range

More treatments

No litter topping

No daylight



# Conclusions

- Feed composition?
- Choice feeding?
- Less feed changes
- Attractive free range and wintergarten
- Daylight
- Litter



# Thank you for your attention



## **Acknowledgements:**

FP7 ERA-Net project CORE Organic II – ‘Healthy Hens’ 249667

[www.coreorganic2.org](http://www.coreorganic2.org)

# Results brown + white

Severity of feather damage	% of flocks
No / little	65
Moderate	20
Severe	15
Total	100











