



Development of integrated livestock breeding and management strategies to improve animal health, product quality and performance in European organic and 'low input' milk, meat and egg production




Subproject 4: Laying Hens

**Ferry Leenstra, Veronika Maurer, Monique Bestman,
Esther Zeltner, Thea van Niekerk, Fabien Galea and
Berry Reuvekamp**



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Low input systems for laying hens




Commercial production of eggs

- › Organic
- › Free range

Hens receive complete diet (more or less ad libitum), but have outside access

In poultry real low input is back yard farming (see FAO E-conference on “Opportunities of the poultry breeding programs for the family poultry production in developing countries : The bird for the poor”)



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Goals



- › Develop a participatory system to test and optimize genotypes specific for free range and organic systems
- › Optimize management issues for free range and organic farms with special emphasis on diets and feather pecking
- › Analyze how the productive live of laying hens can be extended (consequences for health)
- › Analyze/optimize egg quality characteristics



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Methods



Inventory among free range and organic farms in CH, F and NL

	Switzerland		France		Netherlands	
	Free range	Organic	Free range	Organic	Free range	Organic
N farms	35	91	32	11	48	57
Farm size	3.093	1.635	7.577	4.682	17.625	8.077
Egg production	244.1	241.9	247.0	245.4	244.9	231.0
Mortality (%)	5.9	6.6	4.9	4.7	6.6	12.0



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Genotypes



>20 different genotypes:

- › 10 brands of brown hens (1 – 51 flocks/brand)
- › 3 brands of white hens (4-28 flocks/brand)
- › 4 brands of silver hens (3-15 flocks/brand)
- › 3 original genotypes
- › 73 mixed flocks (brown and white, brown and silver, white and silver)

Some, but not complete overlap between countries



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Performance by genetic group



	White	Brown	Silver	Brown + Silver	Brown+ White	White+ Silver
Flocks	32	120	31	5	28	4
Free range (N eggs/hh)	248.7	246.2	237.8	248.0	200.0	NP
Organic (N eggs/hh)	243.5	239.1	227.2	254.3	240.8	243
Free range (%)	5.2	5.8	9.8	5.6	1.0	NP
Organic (%)	3.5	8	13.4	9.6	7.1	10.4

Brand and country to some extent confounded, but organic lower production, higher mortality
Silver more problems than White or Brown



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Next flock different genotype?



	Same	Different	Don't know
Free range	103	25	12
Organic	66	97	8
Switzerland	69	77	0
France	32	6	0
The Netherlands	68	29	20

Free range less shift in genotype than organic
Switzerland: egg trader and/or hatchery decide

Workshops 'Ideal hen'



Workshops with farmers in CH and NL.

Results quite similar:

- › Longevity (with or without moulting)
- › Adaptability (fast recovery)
- › Behaviour
 - › Curious, bold, calm, 'optimistic'
 - › Nesting behaviour, no smothering
- › Eating capacity, bit more body mass
- › Good persistence more important than high peak

Next steps



Farm visits (20/system/country)

- › What determines slaughter age
- › More insight in management factors
- › Feather score, breast bone
- › Try new genotype?
- › Egg quality characteristics

- › Experimental setting
- › Genotype x diet interaction
 - › Genotype: new vs currently common? (or ...)
 - › Diet: with and without animal proteins

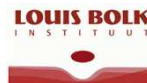


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