



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



Poultry Ethical problems and breeding goals

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FiBL www.fibl.org

Overview



- › **Ethical issues in poultry production**
 - › Killing of male layer chicks
 - › Short lifespan of layers
 - › Health problems in broilers
 - › Run use and feather pecking
- › **Assessment of to which extent breeding could be a good way to deal with these issues as compared with other available actions**



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Divergence of layer and broiler lines



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Layer (left) and broiler (right)



Day 1

Day 29

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Layer lines



- › **High egg production and low body weight**
- › **Health problems related to high production**
 - › bone strength
 - › keel bone deformation
 - › feather pecking
- › **Female birds 1 year in production**
- › **Male chicks and spent layers not used for human consumption or animal feed**



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Broiler lines



- › **Fast growing**
- › **Health problems related to fast growth of muscles compared to growth of supporting structures**
 - › leg deformation and lameness
 - › breast blisters
 - › heart problems



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Fattening males of layer lines



Fattening period: 14 weeks Feed conversion rate: 3-5



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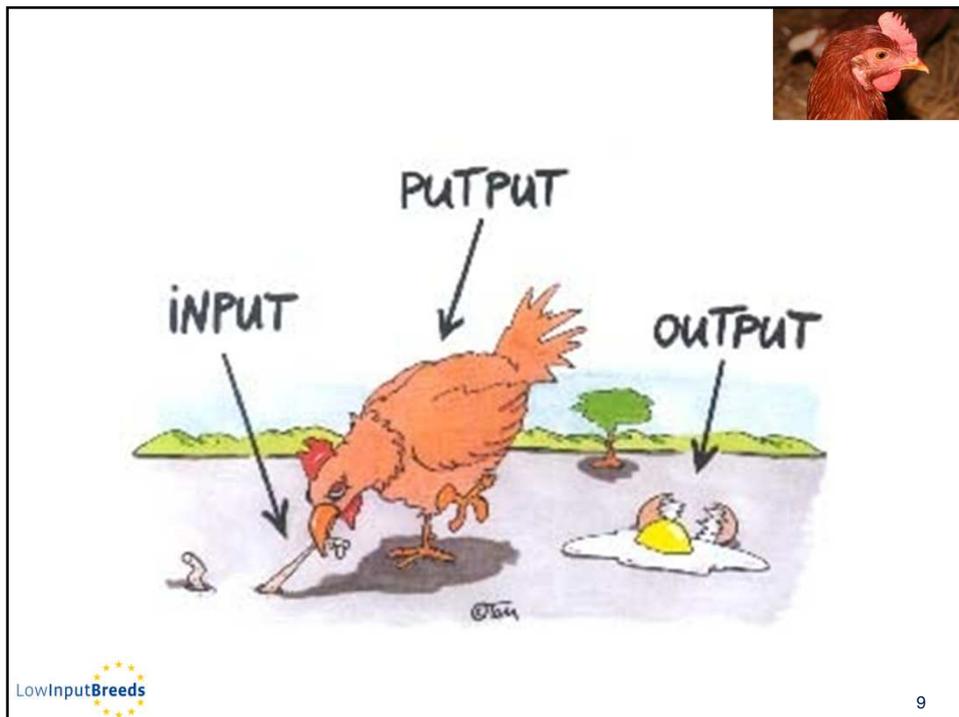
Dual purpose chicken



- › **Would solve the problem of killing male chicks**
- › **Would solve growth related health problems of broilers**
- › **Would solve some health problems of layers**
- › **Heavier hens would be better suited for human consumption**



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Moulting or prolonged use as an alternative



- › Egg quality and feathering decline with age of hens
- › „Welfare friendly“ moulting programmes are feasible (veranda, light, without complete feed deprivation)
- › After moulting
 - › Egg quality ↗
 - › Egg production ↗
 - › Egg size ↗
 - › Feathering ↗, Feather pecking ↘
- › Most frequently mentioned as a wish for future egg production at Swiss farmer's workshops!
- › Main problem: production planning

Feather cover before and after moulting

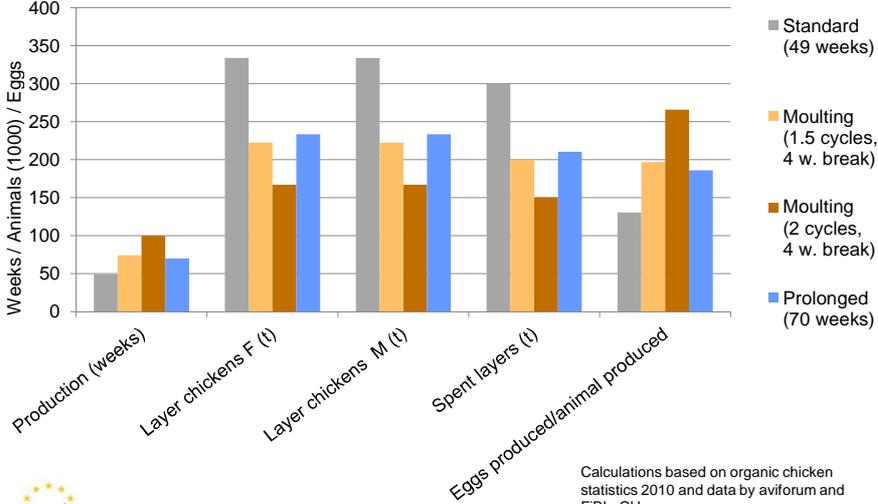



Before moulting **74 days after moulting**



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Organic egg production in CH under different production schemes

Metric	Standard (49 weeks)	Moulting (1.5 cycles, 4 w. break)	Moulting (2 cycles, 4 w. break)	Prolonged (70 weeks)
Production (weeks)	~50	~75	~100	~70
Layer chickens F (t)	~330	~220	~160	~230
Layer chickens M (t)	~330	~220	~160	~230
Spent layers (t)	~300	~200	~150	~210
Eggs produced/animal produced	~130	~200	~260	~180

Calculations based on organic chicken statistics 2010 and data by aviforum and FiBL, CH



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Use of hen run



	Hens/flock		
	3000 (free range)	500 (CH organic)	50 (CH direct marketing)
Area/hen (m ²)	0.74 (0.38 – 1.88)	5.06 (1.68-7.93)	6.05 (11.07)
Popholes open (h)	5.9 (2-7.75)	7.5 (4.5-10.5)	11.9 (9.5-13.75)
% hens in run	19.5	29.5	41.2



Hirt et al., 2000

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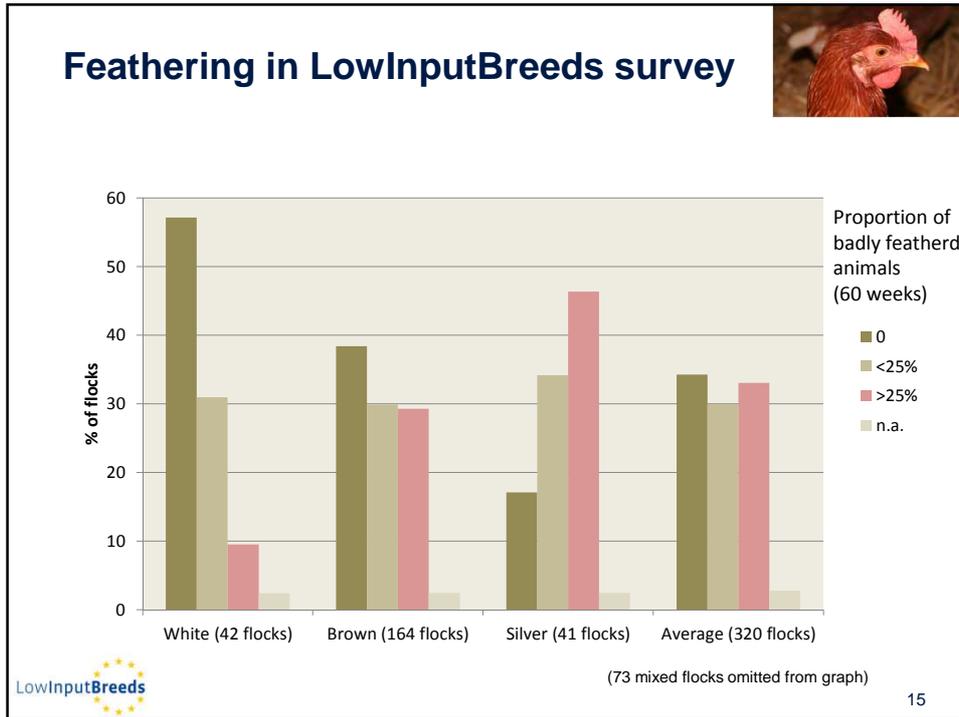
Feather pecking



- › **Risk reduced when frequent use of run**
 (Nicol et al. 2003, Bestman and Wagenaar 2003)
- › **Higher stress level (EI)**
 (Lethey 2000)
- › **Selection possible**



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