

Killing new born animals for efficiency reasons

Genetic selection as a cause for an ethical dilemma

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Background of the dilemma

- Upto 1950 dual purpose poultry (males for meat, females for eggs)
- Invention how to sex day-old chicks, large scale application from 1950 onwards
- Development of coccidiostats around 1950
- Specialisation and large scale production became possible
- Specialisation in egg or meat production



Opposite selection goals for eggs and meat

- Laying hens: high production/animal at a low body weight
= reducing maintenance requirement
= minimum amount of resources per egg
- Broilers: high growth rate
= reducing maintenance requirements per unit of meat
= minimum amount of resources per kg of meat

Selection successful: specialized egg and poultry meat production have a low environmental impact

Brothers of laying hens need too much time and feed to be profitable (when compared to broilers) and are thus killed immediately after hatch in industrialized production



Dilemma of killing day old chicks

- Resource efficiency (economic profitability), utilitarian approach

Vs

- Telos, right of an animal to have a life of its own, deontological approach
- When killing carried out appropriate: not a welfare problem
- Raising cockerels might lead to welfare problems (housing system, catching, transport, slaughter)



Not only a poultry dilemma, also in cattle and goats with high efficiency for milk

- Dairy cattle and goat: high efficiency for milk = low maintenance requirements = lower meat yield
- Market should be able to take the male calves and kids
- Dairy farmers have to raise and feed the males for several days → decide to invest in the males or kill them
- Discussions on killing of bobby calves (male goat kids) immediately after birth, slaughter them at 5-10 days or at older ages
- Discussions on welfare issues when utilizing the males for meat production (transport, housing conditions, health problems)



Technical solutions: prevent males to be born

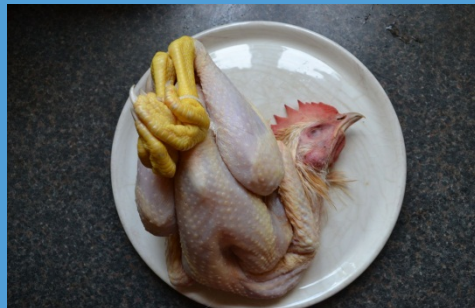
- Mammals: sexing semen (or embryo's)
 - Possible, but costly, not used to prevent unwanted males
- Prolonged production period (laying hens, goats, also cattle?)
 - Some reduction in number of males (and females) born
- Screen before or during incubation in poultry
 - Embrex: invasive, proof of principle, but not applicable to high numbers (day 13 - of 21 - onwards)
 - Non-invasive screening methods: several 'first attempts', but not yet proof of principle/patent
 - Genetic modification to screen before incubation: concept available, but not yet proof of principle



Market/societal solutions

- Accept killing of young animals, or only when utilized? What is considered as utilization?
- Development of a dual purpose chicken: most resource efficient solution is to develop a market for the males of specialized layer strains
- Market for males not only based on strict product value, but also on the value of a live
 - Economically feasible? Bruderhahn initiative; veal calves: not always; goat kids: only some countries
 - Ethically acceptable to spend resources to raise these males?

■





Conclusions

- Technical solutions (prevent unwanted males to be born): possible but ethically acceptable?
- Market solutions (raising males) economically feasible?
- Increase in resources required for the same amount of animal product ethically acceptable?

Success of selection and some other technological developments provided us with a real dilemma



Thank you for your attention

Questions?

Remarks?



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Current situation in poultry

	Layer Brown	Layer Black	Cross LxB	Dwarf broiler	Regular broiler
Laying period (days)	420	420	390	336	294
N eggs/laying period	351	342	260	200	165
Final weight hen (g)	2000	2100	2500	2800	3500
Feed intake/hen/day	120	125	133	140	160
Feed conversion/kg egg	1.99	2.14	2.97	3.86	5.22
Mortality (%)	9	9	9	9	9
Slaughter weight male (g)	1800	1800	2000	2200	2200
Slaughter age male (days)	98	94	84	56	40
Feed conversion	3.8	3.6	2.7	1.9	1.7
Mortality (%)	2	2	3	4	4.5
Slaughter yield (%)	65	65	68	70	70
Breast meat yield griller (%)	17	17	20	24	25



	Layer Brown	Layer Black	Cross LxB	Dwarf broiler	Regular broiler
Production costs (€)/kg egg	0.90	0.93	1.38	1.84	2.23
Production costs(€)/kg LW	1.50	1.43	1.17	0.92	0.82

Number of hens required to produce 1 billion eggs/year and extra costs when brothers of these hens are raised for meat production

	Layer Brown	Layer Black	Cross LxB	Dwarf broiler	Regular broiler
N hens (million)	3.26	3.35	4.09	4.58	4.86
Extra costs eggs (million €)	0	2	30.1	58.5	83.3
Extra costs males (million €)	3.0	2.7	2.2	1.0	0
Total extra costs (million €)	3.0	4.7	32.3	59.5	83.3

