

The future developments in farm animal breeding and reproduction and their ethical, legal and consumer implications



Farm Animal Breeding and Society

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Objective:

Open a dialogue between farm animal reproduction and selection players and society representatives

- Explain farm animal breeding and reproduction
- Indicate technological and society possibilities/constraints
- Indicate future scenarios



Breeding and reproduction

What is breeding? The first step is the definition of the breeding goal. Follows: selection of animals that best describe the goal as future parents and reproduction of the animals.

Who? Breeding companies and co-operations

Trends: Globalisation of breeding, increase of the size of farms, improved computing facilities, (bio)technological developments, sustainable production and biodiversity will influence the structure and content of breeding.

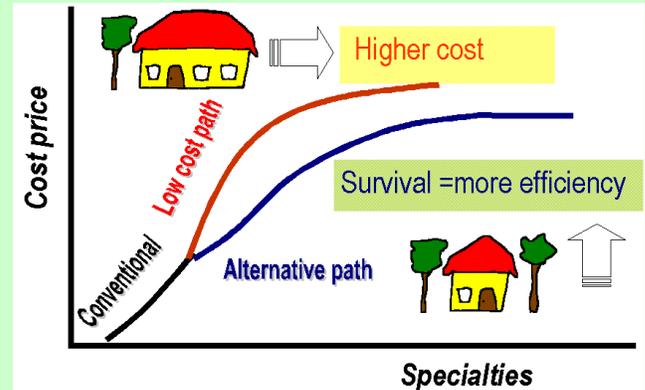
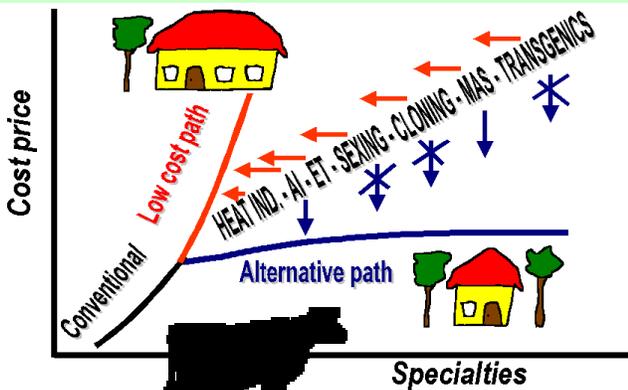
Three scenarios – conventional, alternative and low cost – are represented for discussion. They each have their consequences for expected production costs, uniformity of breeding goals and balanced breeding, and with possibilities/likeness that certain (bio)technologies will be applied.

Traditional Aspects	Conventional path	Alternative path	Low cost path
Decrease production costs	++	+/-	++++
Decrease variation	+	--	++++
Balanced breeding	++	++++	+

++++ used routinely
 ++ very unlikely to be applied

Technologies	Conventional path	Alternative path	Low cost path
MAS	+++	+++	++++
AI & Embryo Tech	+++	++	++++
Transgenesis	-	--	++
Triploidy (fish)	+	+/-	+++
Cloning	+/-	--	+++

++++ used routinely -- very unlikely to be applied



Ethics

What is it that people are concerned about? Concerns with regard to breeding/reproduction and animals, humans, the environment, biotechnology itself. Positive applications represent an obligation not to dismiss these options. Methods to weigh concerns and possibilities help working towards acceptable solutions.



Law

Patents allow equitable return for innovations. They can be granted on production method, or testing method. In the EU, transgenic animals can be patented, but not animal varieties. Patents on genes are possible when the gene has been isolated from the animal body for a concrete defined use. Research is protected with the 'research exemption' (EU).

Potential risks: competition between patent holder and traditional breeders, broad claims. EU patent law allows multiplication of patented (GM) animals for own use (farmer's privilege).

Welfare regulations will influence breeding (developments) more and more. Case-by-case assessment seems to be a workable option.

Consumer

Breeding seems farm away from the consumer. Animal welfare is a concern, but so is the price of a product.

Genetic modification of animals is expected to raise a lot of opposition. But even if GM is not applied, breeders may expect to meet negative publicity of GM/cloned animals for medical Purposes: the general public makes no distinction. Awareness about consumers is important.

Conclusions

Discussion on society aspects of farm animal breeding and reproduction must be continued.

The alternatives for organic, ethical and animal friendly breeding need to be worked out more into detail because of the unknown economic aspects of the potential application of biotechnology and the social risk of alternative pathways.

