Tackling the Future Challenges of Organic Animal Husbandry 2nd IFOAM- Animal Husbandry Conference, Hamburg, Trenthorst, 12-14 September 2012

Summary of Workshop 4.1: Future Organic Breeding

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The following studies were reported

- Commercial laying hens on free range and organic farms, M. Bestman et al
- Site-related breeding of dairy cattle, A. Spengler Neff et al
- Health status of dairy cattle under low concentrate feeding, M. Selle et al
- Two dairy cow types in a low input alpine production system, M. Horn et al
- Udder health – dairy and dual purpose breeds, K. Barth et al
- Organic milk producers' trait preferences, T. Ahlman et al
- Genetic resources for organic farming in North-Serbia, T. Könyves & L. Lengyel
- Organic animal breeding 2012 - position paper from Eco AB, W. Nauta et al

Those studies are published in the proceedings of the 2nd IFOAM Animal Husbandry conference in Hamburg 2012, and can be downloaded from: https://portal.dnb.de/opac.htm;jsessionid=D69D50F77008D314C4905921B96A4AD6.prod-worker1?method=showFullRecord&currentResultId=Sonderheft+362%26any&currentPosition=2

Presentation of Eco AB
Eco AB is the European consortium for organic animal breeding which was founded in 2007. Member organisations from 7 countries provide a platform for discussion and exchange of knowledge on organic animal breeding. They provide expertise for the development of standards and stimulate research relevant for organic production. More information at: www.eco-ab.org
In 2012 Eco AB wrote a position paper on organic animal breeding, which was presented in this workshop: it is on finding, creating and using the best animals for organic production. It is published in the proceedings of the 2nd IFOAM Animal husbandry conference) in Hamburg (Download see above).

Contents of the Eco AB position paper (discussed subjects)
What is so special with organic production? It is a *low external* input system, depending on local resources. A closed nutrient cycle on farm level is an important goal. There are also specific rules which are influencing breeding possibilities: loose housing, grazing, higher weaning age, low concentrate feeding, less medical treatments etc. This is why specific breeds or lines for organic production may be needed.

Conventional breeding goals usually focus on high production, good reproduction, and acceptable health. Animals bred for conventional production may not fit organic production systems. But organic production systems themselves differ greatly between different environments, because they are more dependent on local feed than conventional ones.

The question arises if there are important GxE interactions – especially in functional traits (longevity, health, robustness) - between conventional and organic or between different types of organic.

Since climate change and food security are great challenges today there is a need for *efficient low external* input systems. Therefore it is necessary to evaluate animal performance, animal welfare, and economy in organic and low input systems. Solutions to improve weak systems lie in improving animal environment, in choosing especially well adapted male and female breeding animals, or in changing to better adapted breeds. If there is no other breed, it is necessary to create a special new breeding program. But: Is there a common goal? What is wanted? Who wants? - Farmers, industry, or consumers. Research is needed to find common goals in different countries and even common global goals.

Do we need guide lines for "organic breeding"?
The need for breeding strategies aiming for improvement within the organic concept was discussed.

Most important aspects:

- Breeds (special features, old and new breeding goals in different breeds)
- Maintaining genetic biodiversity
- Breeding goals (within breed)
- Breeding methods and techniques
- Reproduction techniques – tools for dissemination of genetic progress (which tools are convenient with organic guidelines and ideals?)

Summary of the discussion

The first step is to evaluate performance, welfare, economy of organic animal husbandry. High quality records from real farms are therefore needed.

If performance, welfare and/or economy are not good enough – change the environment and or management. A tool to measure site-adaptedness of animals was presented. The presented results indicate that animals that fit better to the production environment have better health. It was stressed that the ties between research and consulting need to be stronger. Researchers should discuss more with the farmers!

If environment and or management cannot be further improved – change the genotype. How?

1, Choose the males that fit best. There is a genetic variation in all populations, no matter what system they have been selected for. An example: Organic farmers want better mastitis resistance. This trait is included in the conventional breeding goal. Choose the bulls with the highest breeding value for mastitis resistance. Mate the chosen AI-males to the best females on the farm. This requires data recording on the farms. According to the presented results, body condition score seems to be a simple but good selection trait on farm.

If there are no wanted animals in the population

2, Change breed. It was concluded that there are no “good breeds” and “bad breeds” for organic production, it depends on the production system and there are goal conflicts. Breeds have to be compared on real farms. For example dual purpose cows had more mastitis and metabolic problems than dairy cows in a presented study.

If there is no wanted breed

3. Build a special breeding program. Breeding programmes are expensive and this solution requires a large market for a product with a high added value. It was concluded that a special breeding program can be relevant and realistic for organic chickens raised for slaughter. The participants agreed that research in this area has a very high priority.