Report of the meeting to encounter the stakeholders of Luxemburg for the Farm Animal Breeding and Reproduction Technology Platform

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The meeting to encounter the Luxembourg stakeholders for the Farm Animal Breeding and Reproduction Technology Platform was held in Ettelbruck on June 5th, 2007. The venue was the annual "CONVIS headquarter". Jeanne Bormann was chairing the meeting.

Representatives of the breeding organisation, milk recording, AI service, governmental offices, farmers unions, organic farming, dairy industry, pig marketing and research institutions were present. There were 16 people attending the meeting.

After a short presentation to explain the role and the functioning of the technology platforms in the EU policy, it was fully presented the FABRE TP. The purpose of the presentation was to detail the objectives of the platform and the activities so far. Finally it has been described the first draft of the Strategic Research Agenda. The people attending the meeting were invited to express their view on the FABRE technology platform in general and more specifically the comments about the first draft of the Strategic Research Agenda and the specificities of Luxembourg.

During the meeting, the mirror group role was explained.

After collecting the comments, the list was sent back to those who attended the meeting for possible corrections and additions. The final list is then detailed:

1. The audience stressed out the importance of selecting cattle for beef and milk production, having good efficiency on utilization of pasture. The animal science and industry from Luxembourg are looking very much to be able to apply an environmental sustainable animal breeding program. The selection should aim to increase animal feed efficiency for better use of local pasture, available forage, requiring less supplementary feed and also being able to make use of by-products, thus taking into account economical and biological efficiency. The objective would be to establish research programs built up on selection of animals having more efficient metabolic systems to use available natural resources, mainly pasture, and not to adapt the feeding to the animals. This would render the breeding more sustainable at long term. In the meantime, pig feeding efficiency must be improved, considering the competition that swine might have with humans about types of utilized food, as well as in relation to the steadily increasing feed prices (energy debate). The breeding objective should thus be to have an animal that fits well and has high efficient production in the systems in which it is bred. An example would be to look for animals that are able to have good productions in marginal areas. In future, breeding programs also will have to consider animal adaptation to climatic changes. Finally, the suggestion was to consider breeding and reproduction technologies for low input systems.

2. Breeding programs or specific selection indices should be developed to better meet the needs of organic farming, in terms of animal health and especially welfare issues, related to animal behaviour, but also related to animal efficiency, in general. Selection indices should be developed to assess the ecological impact of animal production and to give an ecological breed appreciation. Thus, this approach would allow farmers to select animals which in ecological terms have less negative impact on the environment. Representatives from organic farming stress out that a holistic approach should be chosen in general when discussing research projects.

3. In order to establish sustainable breeding systems, efficient monitoring systems should be developed to follow-up production efficiency, animal health issues and to determine environmental linked factors. Therefore efficient tools must be developed to collect large scale information in a reliable and cheap way. These monitoring tools should be used by the farmers as decision making tools, taking into account economical considerations. The objective is to collect and manage data that might serve also for herd management purposes so that, the farmers would easily agree, and eventually support the collection of important data for breeding purposes. Therefore, technologies must be improved that would render animal breeding very efficient by collecting and managing production data. All is about production efficiency in terms of output/input ratios. The inputs and outputs parameters may be of physical, biological nature (such as kg dry matter per ha, kg ECM per kg dry matter, labour input and so forth). Production efficiency also covers economical efficiency (labour input, economical gain / kg ECM). Reliable parameters and data collection methods should be developed to support management decision by farmers. Prediction models and forecasting techniques would allow farmers to take preventive measures for cows presenting any deviations from the calculated, expected values. It is also important to collect medical data in order to model disease eradication through genetic tools. To be able to achieve this objective, an efficient use of the information relative to disease and production must be planned. Above all, many efforts should be given to the dissemination of results and methods, such as the training of technicians and farmers.

4. Collecting large scale genotype information based on SNP technology from cattle populations matched to the available production data would help to increase the reliability of breeding values and thus help to achieve faster genetic progress for traits and characteristics presenting low heritabilities and therefore slow genetic progress (e.g. fitness traits).

5. The audience explained that much more emphasis should be given to improve meat quality produced by beef cattle and pig. Reliable indicators and fast and non invasive methods should be developed for meet quality determination. These indicators should be measured in the online slaughter process and measurements should be taken into account when building price masks based on meat quality factors. Near infrared technology seems to be a promising method, but would need further development and investigation of environmental influences in order to achieve high standard. By use of the gained slaughter information, meat quality can be improved starting at the farm level with proper breeding schemes. The obtained information could be used by the farmers in order to improve and adapt environmental influences and management factors (e.g. feed rations) which influence meat quality.

6. Attention, when deciding about research objectives, should be given to the improvement of milk quality. The reference was about less obvious quality traits of milk, like fatty acid components or any other human health promoting components found in milk. This information should be readily made available to the dairy industry, the consumers (list of ingredients) and dairy breeding programs, where increased research should be focused on the genetic determination of milk quality parameters in order to select animals which show genetically higher concentrations of the given components. It is requested to investigate the genetic determination of variability in the fat composition, above all to consider the mono-insatured fatty acids. Nevertheless, such breeding programs should be based on multiple selection purposes in order to maintain other breeding objectives at high level (avoid degrading of vitality and productivity factors). Smaller production of fat, lower percentages of lactose, especially to increase milk digestibility should be considered in future breeding programs, with respect to other animal health and production factors.

7. Research focus should be set on finding selection indices compiling more than one trait in order to diminish the problem of inbreeding. It is believed that the selection for one single trait will invite the choice of few sires and then increase the inbreeding. If selection is done for more than one trait, depending on the specific needs of the farm, more genetic variability would be assured. Selection indices should be developed to outline production loss due to inbreeding levels in individual animals.
8. It is also considered to be very important to think of the dung produced by the animals. The quality of the produced manure will properly fertilize the soil without increasing the pollution level (nitrogen level in the soil).