

Report of the meeting with the Israel stakeholders for the Farm Animal Breeding and Reproduction Technology Platform

Report by Chris Warkup, Genesis Faraday

The meeting with the Israeli stakeholders of the Farm Animal Breeding and Reproduction Technology Platform (FABRE-TP) was held in Bet Dagan March 3rd, 2008. The meeting was hosted by the Ministry of Agriculture.

Israel Flamenbaum for the Israel Ministry of Agriculture acted as the local contact and kindly organised the meeting. Representatives from Government, researchers and industry were represented at the meeting. A total of 12 people participated in the meeting.

An introductory talk was given by Chris Warkup outlining the background to the FABRE Technology Platform, how it was structured, and the development of the Strategic Research Agenda. The participants were also informed of the opportunity to set up a National Mirror Group for Ireland.

The attendants were then provided with an opportunity to express their views on FABRE-TP in general, and in particular, the Strategic Research Agenda and issues relevant to Israel. These comments were recorded, and then circulated to those who attended the meeting for possible corrections and additions. The final list of significant comments is as follows:

1. Within Israel, the animal breeding activities covered mainly dairy cattle, sheep and goats. There is also some farming of Tilapia and Carp, but these businesses are quite small and commercial breeding programmes not formalised. A research-based breeding programme for Tilapia is now in place. Poultry genetic improvement is all imported from the major international breeders.
2. Sheep and goat breeding was considered to be less well organised than other species, but the importance of these species to Israel, and to many other countries with marginal agricultural areas, was stressed. There were considered to be many opportunities to make a significant impact through improved breeding of these species.
3. Breed improvement of sheep and goats in Israel had potential to benefit up to 100m sheep and goats in the Middle East alone. In contrast, many research groups were working on Holstein dairy cattle and it was less clear to see where Israel had unique strengths in the area.
4. Other participants considered that the fact that Israel has the most productive milking cows in the world, whilst coping with the use of residual feedstuffs and climatic challenges, might provide research opportunities related to land use intensification. US Holstein genetics appears to express higher fertility problems in Israel than in the US and for this reason Israeli breeders place greater emphasis on fertility. The Israel climate might provide a bridge to tropical environment. There are dairy farms in Israel with very high yield and very good fertility – “they just know how to do it!”

5. Funding of animal research in Israel had declined in recent years. Government funding was more easily available for staff than for project costs. External sources of funding, such as EU framework programmes were seen as important to provide these additional resources.
6. The meeting participants expressed the view that one of the frustrations in the area of animal genomics was the 'knowledge gap' between research and application. There was industrial frustration with the application of technologies and, for example, it was felt that the potential for the use of QTL (as identified by more classical, relatively less dense genetic markers such as microsatellites) for use in breeding had been over sold and was not yet providing a good return on investment. Dense genotyping technologies (such as dense SNP panels) showed more promise, but it was not yet clear whether e.g. 60,000 SNP for cattle would be dense enough.
7. Meeting participants had concerns about the feasibility of attempting to dissect the genetic basis of many agriculturally important traits in several species. It may be nice to target the causative mutations, but we must not forget that the information can be utilised before the precise causative mutation has been identified. Funding research that was appropriately deep (targeting many animals) for a few traits was considered to be more productive than more dispersed and shallow research activity. A few big projects would be expected to have more real impact in a short time than fewer under-funded projects.
8. Ketosis and other health problems were noted as priorities for research. There was general agreement with the Vision and SRA aims of rebalanced breeding goals.
9. There was general agreement that the availability of phenotypes of sufficient accuracy on enough animals would be a more important limiting factor for research in the future than genotype information. The development of new phenotyping tools, for example new sensor or imaging technologies was identified as a significant research opportunity. In addition, there was real market potential for on-farm (equivalent to patient-side) genotyping technologies.
10. The Israeli research community and society had a positive attitude to the development and application of biotechnologies for use in animal production.
11. Overall there was general agreement with the FABRE Vision and identified priorities in the SRA. It was considered important to stress that sheep and goat research should not be neglected in the SRA.