

Deep Frozen Semen and Embryo Backup of Hungarian Native Pig Breeds in Pandemic Situation

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African Swine Fever (ASF) generated unprecedented disaster in global pig production, recently. Track of the infectious disease was documented well from East Africa via in Eastern countries and appeared in the EU. Pig breeding suffered unforeseen harm in many countries. Approximately 8 to 10,5 million pigs were culled to avoid the rapid enlargement of infected regions. Frankly it could not really stop the spread of ASF to the EU, honestly due to human and wild boar vectors. Uptill now Hungary prevented the contamination in domestic pig population nevertheless wild boar population was infected to the middle of our country. We know that international commercial restrictions are practically the same whether ASF is detected in wild boars or domestic pig population. However different bilateral agreements of seller and buyer countries enable the pork trading e.g. on the basis of so called regionalization. Concerning on the breeds it can be declared that big international companies have large enough genetic resources at different geographical locations safe from ASF till the moment thus they can replace the lost populations. Indigenous swine breeds of some countries and regions represent a special value in genetic and commercial point of view. Each of these populations represent limited number of breeding sows and boars and kept mostly in the related country or countries. If they disappear due to any pandemic disease or preventive culling the population can be hardly or cannot be replaced at all. According to good examples it is sure that apart from in vivo gene preservation in vitro gene conservation would play a key role in such a tragical case.

Hungarian researchers and breeders do agree in this situation Red, Black and Swallow-Bellied Mangalica as well as the endangered Hungarian Large White pig can be extinguished in case of ASF contamination and no chance for replacement any more. The University of Veterinary Medicine Budapest was appointed by the Ministry of Agriculture to establish a group of experts in Hungary for creating an in vitro gene reserve of aforementioned Hungarian pig breeds together with the relevant breeding associations i.e. National Association of Mangalica Breeders and Hungarian Purebred Pig Breeders' Association. In the still ongoing project 60 to 100 boars and 20 to 30 gilts are included for collecting and deep-freezing semen and early embryos, respectively. At cc two third of the program more than 1700 straws of semen of 6 Mangalica and 25 HLW boars were deep frozen. Semen quality were checked by CASA and ejaculates of more than 80% motile sperm cells were used in the program. At the beginning it was suspected that most sensitive points would be the collection of semen from the selected boars of rare strains and the freezing ability of different ejaculates as well as the deep-freezing of the early embryos. Boar semen and porcine embryo deep-freezing had been elaborated long ago however it must be adjusted to each native breeds.

Key words: indigenous pigs, epidemic, in vitro gene reserve