

## **Cryopreservation of ram and goat semen – current technologies and possibilities of practical use**

### **Summary**

The use of frozen semen in artificial insemination eliminates geographical barriers, supports the conservation of endangered breeds, and protects biodiversity. Numerous efforts have been made to optimize extenders and cryopreservation protocols for ram and goat spermatozoa, but the results are still not satisfactory. At the Department of Biotechnology and Cryopreservation of the National Research Institute of Animal Production, research was carried out to improve the efficiency of cryopreservation of ram and goat semen by modifying the composition of extenders already in use, introducing new cryoprotectants to the extender, and modifying freezing protocols. One of the issues raised was assessment of the suitability of alternative extenders containing protective components of plant origin. The semen of rams and goats was frozen in a milk extender and a tris-based extender, whose composition was modified by replacing chicken egg yolk with soy lecithin, a protective substance of plant origin. The research carried out to date indicates that ram semen cryopreserved in a milk extender with soy lecithin had the highest quality. In the case of goats, semen frozen in a milk extender and a tris-based extender with the addition of soy lecithin was of similar quality. Further dissemination of the use of cryopreserved semen in sheep and goat reproduction, as well as the need to collect genetic material for biodiversity conservation programmes, requires further research on optimization of the composition of extenders and cryopreservation technologies in order to obtain even more satisfying results.

**KEY WORDS:** ram, goat, semen cryopreservation, sperm quality, fertility