

REPRODUCTIVE EXPERIENCES IN ARTIFICIAL INSEMINATION AND EMBRYO TRANSFER IN SHEEP AND GOATS IN PATAGONIA

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Some of the experiences performed in artificial insemination (AI) and embryo transfer (ET) in sheep and goats by the Reproduction Group of INTA Bariloche will be presented in the lecture. The AI with fresh semen, as well as the possibility of cryopreserving semen, has been a priority research topic since AI was considered as an appropriate technique to disseminate the productive characteristics of high-genetic value males. The information refers to the different types of AI that have been used in the breeding programs carried out by INTA Bariloche in collaboration with breeders associations (Mohair Program-Angora, Provino-Merino). The need to apply AI within a genetic breeding program will be emphasized and a series of indications and suggestions will be considered to successfully carry out this technique. Different alternatives of hormonal treatments for estrus synchronization, semen preservation methods and expected reproductive efficiencies will be presented.

The ET is an assisted reproduction method whose purpose is to obtain multiple offspring of a female donor, with characteristics of high production. Also it allows increasing the reproductive potential of females of high-genetic value by means of a greater use of the large stock of oocytes present in their ovaries. Hormonal stimulation triggers multiple ovulation, resulting in a considerable number of genetically superior embryos, which are transferred to recipient females. It should be noted that an embryo donor can be part of a transfer program in more than one opportunity, so that it is possible to multiply its reproductive potential by using females of low-genetic value as embryo recipients to carry on gestation. The increase in the commercialization of frozen embryos of sheep and goats demonstrates the importance of this technique as health reinsurance against exotic diseases and as a tool of genetic improvement for animal production. It has also made it possible to generate germplasm banks for the conservation of these species. A number of intrinsic and extrinsic factors will be discussed that are determinants of the rate of ovulation, fertilization, as well as the number and quality of recovered embryos. In summary, the lecture will consider information in the following points: Ovarian stimulation for multiple ovulation. Factors involved in the response to multiple ovulation. Induction of ovulation in recipient females and synchronization of estrus between donor and recipient. Fertilization in the donor female. Collection and transfer of embryos. Selection of donors to achieve high efficiency in the production of embryos. Considerable advances have been made in the last 25 years in the selection of the female donors, through studies that verified the repeatability and recurrence in the ovarian response to superovulation treatments, allowing to increase the reproductive efficiency of ET programs. In spite of these advances, future research will be necessary to reduce the cost per lamb obtained by female donor or frozen embryo to enable the recommendation of its commercial use.