

THE INFLUENCE of DURATION of the EQUILIBRATION on the QUALITY of RAM SPERM

I. V. Lobachova
LIV-e@rambler.ru

Ascania Nova Institute of Animal Breeding in the Steppe Regions
named after M. F. Ivanov - National Scientific Selection-Genetics
Center for Sheep Breeding
Chervonoarmiyska Street, 1, Askania Nova, Chaplinka district, Kherson
region, 75230, Ukraine

To determine the possibility to reduce the equilibration phase at freezing of sperm of Ascanian Merino ram (n=6) two experiments were carried out in May-June. In experiment 1 the quality of sperm packaged in straws and subjected to different time of equilibration and frozen in nitrogen vapour at (-65 °C) was researched. In experiment 2 the activity of sperm packed in glass vials or straws and subjected to various periods of exposure at 2-4 °C or 37 °C was studied. In experiment 1 reduction of the equilibration time to 48 min. against the traditional 3,5-4 h. significantly improved activity of equilibrated sperm, but led to full stop of movement of sperm after thawing (p<0,05). Shortening of equilibration to 103 or 115 min. insignificantly improved activity of equilibrated sperm, but no had such destructive action on thawed sperm, though worsened a little its quality against the parameters of 4-hours exposure (p>0,05). Shortening of equilibration time to 115 min. reduced survival rate (p>0,05) and absolute survival rate (p<0,05) too. In experiment 2 the activity of sperm packaged in vials and exposed at 37 °C (var. 1) and packaged in straws and exposed at 37 °C (var. 2) or 2-4 °C (var. 3) after 57 min. did not differ significantly both between variants and against parameters of the native sperm. After prolonging of exposition to 137 min. activity decreased against the initial parameters in all variants, but between the variants did not differ significantly. After prolonging of exposition to 205 min. activity sperm in var. 2 reduced almost to zero (0,3 ± 0,18 bal.), while in the var. 1 and 3 remained at a satisfactory level (6,0 ± 0,57 and 5,5 ± 0,73). It was supposed that one of the reasons of reduction of quality of sperm packaged, equilibrated and frozen in straws may be the lack of free access of oxygen that inhibits adaptation of sperm. It was concluded that a reduction of duration of equilibration stage is possible, but necessary to improve the composition of cryoprotective solution.

Keywords: ram, sperm, freezing, equilibration, activity, survival rate, total survival rate