UNIVERSITY "Ss. CYRIL AND METHODIUS" IN SKO
FACULTY OF VETERINARY MEDICINE - SKOPJE

PROCEEDINGS

DAYS OF VETERINARY MEDICINE 2011

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OHRID, MACEDONIA
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APPLICATION OF SEX-SORTED SEMEN IN BOVINE REPRODUCTION

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Long time the science was searching for the reliable method for controlling the sex of mammalian offspring. Recently, application of certain modern cellular methodologies has led to development of a flow cytometric system capable of differentiating and separating living X- and Y-chromosome-bearing sperm in amounts suitable for AI and therefore, commercialization of this sexing technology. Nevertheless this method is not 100% reliable, there is still significant reliability in the sex offspring. This is on the level of 90% female offspring in cows inseminated with X bearing sperm.

Why someone should use sexed sperm? Certainly, due to numerous advantages that are offered with this method. The implementation of sexed semen for the dairy industry creates many positive opportunities for rapid genetic improvement both within specific herds, as well as the entire industry. By taking advantage of sexed semen technology, heifers will be born as often as 95% of the time, instead of 49% of the time when using semen that is not sorted for sex. Therefore, using sexed semen can produce offspring of a selected sex in a reduced amount of time when compared to using unsexed semen.Advantages of using sexed semen include an increased return on investment of offspring when marketing for specific genetic traits or purposes. For a single producer breeding with sexed semen has definite strengths and advantages. Using sexed semen has been proven to produce genetically superior daughters, rapidly increase desired traits within a herd, and subsequently creating more opportunities for the sale of dairy genetics (embryo sales and bull marketing). Additionally, sexed semen can be utilized to breed the top cows of the herd which will result in increased genetic base of the herd. Also, by using sexed semen in the top cows of the herd will help the producer to potentially receive higher return per dollar invested in this technology.

Unfortunately, as well as other biotechnological methods, using of sorted semen has some disadvantages. A major limitation remains the short viable lifespan of spermatozoa after sorting, with fertility results in all species suggesting a reduced viability in the female genital tract compared with unsorted spermatozoa, making inseminations close to the time of ovulation necessary.

The other is the price of the semen. Sex sorted semen is couple of times more expensive than unsorted. Because of the higher cost and reduced conception rate, sexed semen seems more appropriate for virgin heifers, which have naturally higher conception rate than adult cows.

Instead of conclusion, we can only say that the use of sexed sementechnology would have the double advantage of reducing the number of low value male dairycalves and increasing the number of more valuable beef cross calves for the beef industry.