EFFICIENCY OF INSEMINATION WITH SEXED SEMEN AT SPONTANEOUS ESTRUS AND SYNCHRONIZATION OF OVULATION IN LACTATING HOLSTEIN COWS

Jevgeni Kurykin[*1], Mihkel Jalakas[1], Tanel Kaart[2], Ülle Jaakma[1]*

[1]Department of Reproductive Biology, [2]Department of Animal Genetics and Breeding,
Institute of Veterinary Medicine and Animal Sciences, Estonian University of Life Sciences

**Corresponding author: Jevgeni Kurykin*
Department of Reproductive Biology, Institute of Veterinary Medicine and Animal Sciences
Estonian University of Life Sciences
62 Kreutzwaldi St, 51014, Tartu, Estonia. Tel: +372 7 313 427, e-mail: jevgeni.kurykin@emu.ee

Abstract. The objective was to determine the efficiency of insemination with sexed semen at spontaneous estrus and synchronisation of ovulation, and the effects of days in milk, insemination number, parity, and daily milk yield on pregnancy rates in lactating Holstein cows. A total 1,000 first to fourth parity cows, selected for their normal clinical and reproductive status, approaching a 50-day voluntary waiting period or non-pregnant subsequent to one to three inseminations were randomly assigned to insemination at spontaneous estrus or to Ovsynch protocol. At spontaneous estrus, 244 cows were inseminated with sexed semen 12 h after detection of estrus and 162 cows with unsexed semen according to the a.m.–p.m. rule. Using the Ovsynch protocol (GnRH-7d-$PGF_2\alpha$-2d-GnRH), 336 cows were inseminated with sexed and 258 with unsexed semen 18-20 h after the final GnRH treatment. The overall pregnancy rate for sexed semen at spontaneous estrus and the Ovsynch use was 9.6% lower of unsexed semen (38.6% vs 48.2%, P = 0.02). Pregnancy rates did not differ between protocols using sexed (37.2% vs 40.1%, P = 0.63) or unsexed (49.4% vs 47.1%, P = 0.77) semen. The effects of days in milk (50-100, 101-150, and > 150), insemination number (1 to 4), and parity (1 to 4) were not significant for both types of semen and protocols. Across studied cows median daily milk yield was 32.7 kg. Pregnancy rate with sexed semen at estrus appeared to increase in cows with above-mean milk yield, compared with those with below-mean yield (40.9 kg, 41.1% vs 25.7 kg, 35.3%, P = 0.41). A decrease of pregnancies was observed at the higher milk yield for sexed semen using the Ovsynch (38.1 kg, 35.2% vs 27.1 kg, 40.8%, P = 0.27). It is suggested that the Ovsynch protocol can be used for fixed-timed insemination with sexed semen of lactating dairy cows as an acceptable alternative to insemination upon detection of spontaneous estrus.

Keywords: sexed semen; lactating cows; estrus; Ovsynch; pregnancy rate; factors; effects