

O2 **CONCEPTION RATE FROM FIRST AI IN COWS
SUBMITTED TO THREE DIFFERENT SYNCHRONIZATION
PROTOCOLS: A SINGLE PGF_{2a} INJECTION, OVSYNCH AND
MODIFIED OVSYNCH**

Branko Atanasov^{1*}, Zvonko Trbogazov², Ksenija Ilievska¹, Martin
Nikolovski¹, Vladimir Petkov¹, Monika Dovenska¹, Nikola Adamov¹,
Boris Stojanov³, Toni Dovenski¹

¹Faculty of Veterinary Medicine, Ss Cyril and Methodius University Skopje, R. Macedonia

²Dairy farm "ZSK Strumica", Strumica R. Macedonia

³Veterina Centar, Strumica, R. Macedonia

Introduction: Many dairy veterinarians in R. of Macedonia use single PGF_{2a} synchronization protocol for first AI which relies on detection of estrus. Since the detection is nearly 40% in tide-stall housing systems, we suggested implementing Ovsynch protocol that effectively controls the time to 1stAI without detection of heat signs. However, 10 to 30% of cows treated with Ovsynch have asynchrony of ovulation. Therefore, we have modified the Ovsynch protocol by "adding an" additional injection of half dose of the PGF_{2a} 2 days before initiation of the Ovsynch. Thus, the aims of the study were to compare the conception rate from first AI in cows submitted to 3 different synchronizations protocols: single PGF_{2a}, Ovsynch and modified Ovsynch.

Material and Methods: A total of 90 Holstein Frisian cows (50±3 DIM) with CL>25 mm, follicle>8.5 mm and P4>2.0 ng/ml on day -2 (day 0 - initiation of the synchronization protocols) were included in the study. Cows were divided into 3 groups. Group1 (n=30) – treated with a single PGF_{2a} injection, Group2 (n=30) – treated with Ovsynch (GnRH (d0); PGF_{2a} (d7) and (d8); GnRH (d9); and 16h later TAI and Group 3 (n=30) same as Group2 with additional injection of half dose of the PGF_{2a} 2 days before initiation of the Ovsynch. Ultrasonography and blood sampling for P4 concentrations were done at day -2 and day 0 in all cows. Pregnancy diagnosis was done on day 30 after AI.

Results: The results have shown that all cows have had similar P4 concentration at day -2 (ranging from 3.27 ng/ml –7.84 ng/ml). However, at day 0, 23 cows from Group 3 had lower P4 level than the cows from Group 1 and 2 (2.24±1.14 ng/ml vs. 4.75±1.25 ng/ml and 5.35±1.75 ng/ml, mean±SEM), respectively. The remaining cows in Group3 (n=7) underwent a complete luteolysis and were removed from further analysis. In Group1, 26 cows have been observed in heat after the PGF_{2a} injection between the days 2–5, while the

remaining 4 cows did not show any signs of estrus and were excluded from the analysis. In Group 2, all cows were time inseminated. The conception rate in Group1, Group2 and Group3 were 9/26 (34.61%), 11/30 (36.66%) and 11/23 (47.82%), respectively.

Conclusion: Implementation of the modified Ovsynch protocol with additional injection of half dose of the PGF_{2α}, 2 days before initiation of the Ovsynch could be a possible method of choice to increase the conception rate from first AI.

Key words: synchronization, conception rate, progesterone, ovsynch, cow