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COMPARISON OF THE EFFECT OF BOTH OVSYNCH PROTOCOLS AND TWO INJECTIONS OF PGF2A ON PREGNANCY RATE IN HEIFERS AND DAIRY COWS.

Norshan Zarif Tamer, Postgraduate student in the Department of Animal Production - Faculty of Agriculture - Tishreen University - Syria.

Zohair Ibrahim Jabbour, Professor in the Department of Animal Production - Faculty of Agriculture - Tishreen University - Syria. jabourz@yahoo.com

Siraj Raya, Expert in the Food and Agriculture Organization - FAO.

***Abstract.** The reproductive efficiency of milk cows is a determining factor for their productivity and economic importance in all countries of the world, so attention is focused on introducing technologies to improve the reproductive management of the herd of cows.*

This article shows the effect of application of OVSynch and two injections of PGF2 α at an interval of 11 days, on pregnancy after blind artificial insemination (without the need for detection of feathery horns) in heifers and Holstein-Friesian dairy cows.

OVSynch was applied by injecting the synthetic derivative of GnRH (buserlin acetate) at a dose of 2ml at a concentration of 0.0042mg in 1ml on the first day, and on the seventh day, she was injected with a dose of the synthetic derivative PGF2 α (cloprostenol-Na) at a dose of 2ml at a concentration of 0.263mg in 1ml, and she was treated with a second dose of buserlin acetate 56h after the dose of PGF2 α and then blind artificial insemination was performed 16h after the last injection

The research clarified the recommendations necessary to raise reproductive efficiency in proportion to the cost and economic feasibility.

***Keywords:** estrus synchronization, Ovsynch, PGF2 α , pregnancy rate, dairy cows, wheels, reproductive efficiency.*

Introduction: Reproductive efficiency is good and the benefit is great if it is possible to have a baby every year, and this depends on a number of reproductive

indicators, including the return of ovarian activity, the resumption of the estrus cycle, the clarity of its signs, and timely fertilization in the postpartum period.

In addition, the long period of fertilized fertilization in the heifers, and the long period of estrus after childbirth in dairy cows, cause significant economic losses, due to the high cost of feeding the cows, in addition to the losses in the productive life of the cow compared to the number of offspring that can be obtained.

Therefore, a partnership was created between different hormones. These participations led to the design of several programs to synchronize estrus and ovulation in dairy cows in order to shorten the period between calving and adjust the date of artificial insemination. Among the programs to synchronize estrus is the Ovsynch program, as in this program three injections are given within a specific time sequence.

As a result of these three injections, the mechanisms of dominant follicle formation are tightly synchronized, and ovulation occurs 26-32 hours after the second injection of [3]. GnRH. As the eggs are usually fertilizable 4-6 hours after ovulation occurs, therefore it is expected that artificial insemination within 17-24 hours after the end of the time sequence of this hormonal program will give good pregnancy results [2].

PGF2 α was also commonly used in estrus synchronization programs using one or two injections at intervals (10-12 days), and it showed its effectiveness only during the luteinizing phase and did not affect the young corpus luteum (ie within 5 days of its formation).

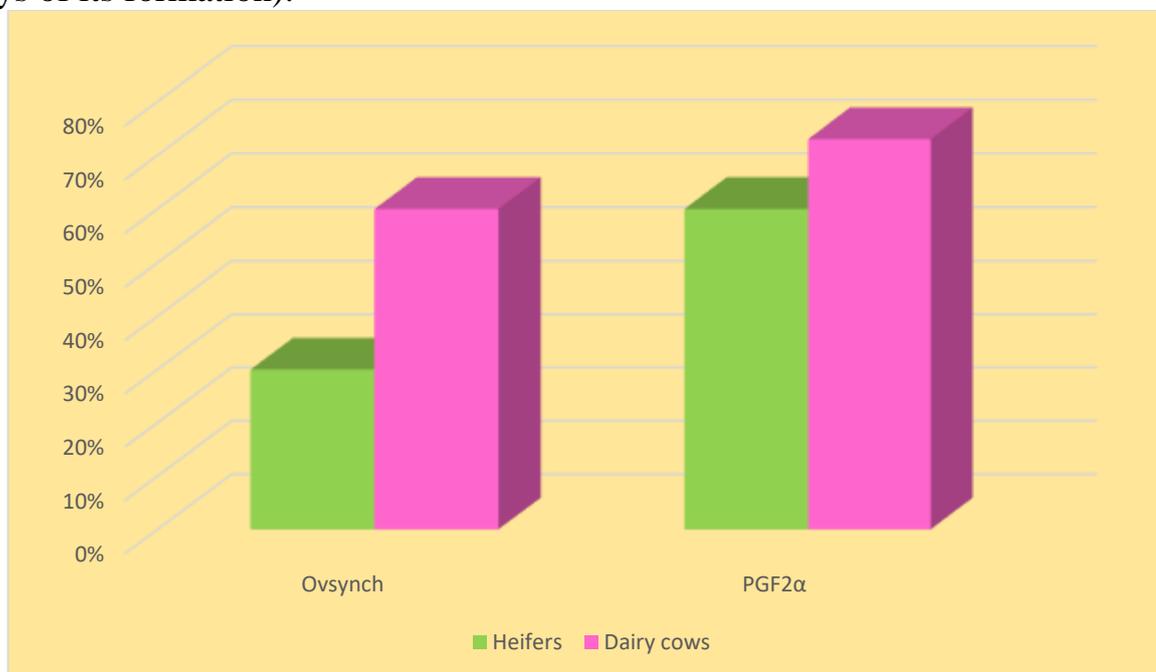


Figure 1 shows the percentages of application of both Ovsynch and PGF2 α protocols on pregnancy rate in heifers and dairy cows.

With regard to the pregnancy rate of both cows and heifers that responded to the treatment with the Ovsynch protocol, the study recorded a decrease in the pregnancy rate of the heifers, as it reached 30% compared to 60% for dairy cows,

and this decrease was significant, with a very high statistical significance at a probability value of $P < 0.001$. That is, the effect of the Ovsynch protocol on dairy cows is far greater than its effect on wheels.

This may be due to the difference in follicular dynamics, and the different number of follicular waves between calves and cows. With regard to calves, some research indicates that the most frequent pattern in the first follicular wave is the presence of a dominant follicle with a corpus luteum, or the absence of the dominant follicle and the corpus luteum together, while less The presence of a single dominant follicle, or a single corpus luteum, which complicates the response of the wheels to the Ovsynch protocol and makes it less efficient as long as the ovarian formation targeted by treatment is the dominant follicle for GnRH and the corpus luteum for PGF2 α [4].

As for the dairy cows' response to the Ovsynch program, it was positive through a high pregnancy rate, with a very high statistical significance at a probability value of $P < 0.001$. As the pregnancy rate reached 60%, it remains below the level of excellent reproductive performance, which is defined mainly as the pregnancy rate within 6 weeks and is at least 70% [1].

While the pregnancy rate among cows that responded to the treatment with the PGF2 α protocol was 73.3%, and it was higher than that of the heifers at 60%, but without significant differences at the probability value $P < 0.05$.

The PGF2 α protocol showed superiority in the indicator of pregnancy rate in wheels (60%), while this rate did not exceed 30% after applying the Ovsynch protocol, meaning that the response of wheels to the PGF2 α protocol was higher, with a very high statistical significance at the probability value of $0.001P <$.

Treatment with PGF2 α may affect the final stages of follicular development, and accordingly some researchers hypothesize that treatment of milk wheels with cloprostenol (a prostaglandin analogue) accelerates ovulation, and this is associated with a rapid reduction of plasma progesterone concentration, decreased corpus luteum area, blood flow and retraction, and increased follicle diameter pre-ovulation. [6].

The study also recorded a higher pregnancy rate of 73.3% when applying the PGF2 α protocol to dairy cows, compared to the Ovsynch protocol, as this rate reached 60%, but without significant differences at the probability value of $P < 0.05$.

The importance of prostaglandins lies in the fact that they can help accelerate the maturation of heifers in the prepubertal stage and stimulate ovulation. Heifers in the pre-puberty stage, which increases the productivity of milk cattle, as shown by a study [5].

Conclusion: Significant decrease in heifer response to Ovsynch protocol compared to cows of different seasons in terms of pregnancy percentage. And the significant superiority in the response of the heifers treated with the (two doses of PGF2 α) protocol over those treated with the Ovsynch protocol, and the pregnancy rate increased (without significant differences) in the cows treated with (two doses of PGF2 α) over the cows treated with Ovsynch. Therefore, it is recommended to

use a protocol (two doses of PGF2 α) based on cost-effectiveness compared to the Ovsynch protocol (three doses of hormones).

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FIRST REPORT OF THE FUNGUS *FUSARIUM OXYSPORUM* F. SP. *RADICES LYCOPERSICI* IN THE COASTAL REGION OF SYRIA

Afraa Mutee Haidar, PhD student and Lecturer of the Department of Plant Protection, Faculty of Agriculture Engineering, Tishreen University, Lattakia, Syria, afraahaidar@tishreen.edu.sy

Nadine Ali, Doctor of the Department of Plant Protection, Faculty of Agriculture Engineering, Tishreen University, Lattakia, Syria, nadineali.tichrine.univ@gmail.com

Lucie Miché, Lecturer of Mediterranean Institute of Marine and Terrestrial Biodiversity and Ecology (IMBE), Aix Marseille University, France, lucie.miche@univ-amu.fr

Mohammad Imad Khreibeh, Doctor of General Commission for Biotechnology (NCBT), Damascus, Syria, imadkhriebe@gmail.com

Isam Allaf, Doctor of the Department of Plant Protection, Faculty of Agriculture Engineerin Tishreen University, Lattakia, Syria

Mohammad Tawil, Professor of the Department of Plant Protection Faculty of Agriculture Engineering, Tishreen University, Lattakia, Syria, mtawil@scs-net.org