

Endometritis Effect on Reproductive Efficiency of Dairy Cattle

¹Alejandro Córdova-Izquierdo, ¹Claudio Gustavo Ruiz Lang, ²Maximino Méndez Mendoza, ²Rubén Huerta Crispín, ²Abel Villa Mancera, ³Cristian Alejandro Córdova-Jiménez, ⁴Ma. De Lourdes Juárez Mosqueda, ⁵Juan Eulogio Guerra Liera and ¹Víctor Manuel Xolalpa Campos

¹Departamento de Producción Agrícola y Animal. Cuerpo Académico: Salud y Bienestar Animal. Área de Investigación: Ecodesarrollo de la Producción Animal. Universidad Autónoma Metropolitana Unidad Xochimilco. Calz. Del Hueso 1100 Col. Villa Quietud C.P. 04960, México D.F.

²Facultad de Veterinaria. Benemérita Universidad Autónoma de Puebla, México.

³Facultad de Veterinaria. Universidad de León, España.

⁴Departamento de Morfología. FMVZ-UNAM, México.

⁵Facultad de Agronomía. Universidad Autónoma de Sinaloa, México.

Abstract: Under a case-control study, the effect of endometritis on reproductive efficiency indicators of holstein dairy cows under industrial production system and intensive, with proper feeding and management level, with average production of 26.7 liters per day cow, the Agricultural and Industrial Complex Tizayuca (CAITSA) Hidalgo, Mexico. 360 production cycles were analyzed, half were cases and the other controls. Statistically significant difference was found ($p \leq 0.01$) between production cycles of submission endometritis (“cases”) and cycles without endometritis (“controls”). It was found that the interval from calving to conception, endometritis were 141,302 days on average and without endometritis 110,331 days; for calving interval, was on average 425.56 days and 387.78 without endometritis endometritis, with respect to the number of services per conception The results were: 2.58 on average with endometritis without endometritis 2.02 services to achieve a pregnancy. In conclusion, we determined the effect of endometritis average measured in days, affecting the reproductive indicators, so efforts should be made in prevention and control programs based not only on traditional treatment endometritis.

Key words: endometritis, dairy cows, calving to conception interval, calving interval, services per conception.

INTRODUCTION

Endometritis is defined as the condition of bovine females characterized by muco-purulent discharge and sometimes with remnants of fetal membranes occurs frequently in the postpartum period as is also known as postpartum uterine disease (García *et al.*, 2005). Endometritis is one of the conditions of highest impact on industrial dairy farms (Cantemir, 2006), reported incidences ranging from 10.1% to 32% (Borsberry and Dobson, 1989). It is considered a retained placenta as the main risk factors ($R = 0.90$), (Distler, 1991; YeonKyung and IlHwa, 2005), has also been considered in the ecetonemia (Santos, 2008), the postpartum negative energy balance for the transition of diet in the period surrounding childbirth (Konyves *et al.*, 2009), the presence of an abnormal birth (dystocia) and a prolonged gestation and abortion (Gautam and Nakao, 2009) and the influence of climatic factors (Cantemir, 2006).

Endometritis has been considered as a risk factor in the occurrence of displaced abomasum, ovarian cysts and infertility (Doll, 2007, Etherington *et al.*, 1985) and low milk yield (Rajala-Schultz and Grohn, 2000), with extremely high economic losses (Hussain and Daniel, 1991).

Endometritis significantly impact the reproductive efficiency have been reported increases ranging from 7-31 days in the calving to conception interval (Borsberry and Dobson, 1989; Fourichon *et al.*, 2000; Vacek *et al.*, 2007). It should consider new approaches to control this disease (LeBlanc *et al.*, 2006).

Corresponding Author: Alejandro Córdova-Izquierdo, Departamento de Producción Agrícola y Animal. Cuerpo Académico: Salud y Bienestar Animal. Área de Investigación: Ecodesarrollo de la Producción Animal. Universidad Autónoma Metropolitana Unidad Xochimilco. Calz. Del Hueso 1100 Col. Villa Quietud C.P. 04960, México D.F.
E-mail: acordova@correo.xoc.uam.mx

In the CAITSA was determined by a random sampling of 11 production units and incidence of 21.64% with an impact on the calving to conception interval of 46.86 days in cows more endometritis (Xolalpa *et al.*, 2003), however is lacking updated information.

The aim of this study was to evaluate the impact of endometritis on the reproductive efficiency of dairy cows CAITSA.

MATERIAL AND METHODS

The CAITSA is located in the Municipality of Tizayuca Hidalgo, Mexico, is composed of 110 stalls and an animal population of 20 000 cows, Holstein and under intensive production system and modernized.

Of a total of 2600 cows from 13 dairy farms, selected at random, with average production of 26.7 liters per day per cow and appropriate level of feeding and management, production cycles were identified 360 that met the requirements of a study "case control" was considered a production cycle as the experimental unit, identified only those cows that suffered from endometritis in a productive life cycle (the case), and a production cycle which has not been reported the occurrence of endometritis, or some other event of reproductive failure (control), no more old to 5 cycles, both production cycles belonged to the same cow, it was assumed that the management, environment and food would have no significant differences.

Birth dates were recorded before the endometritis, the event, the last insemination with pregnant women who gave birth the cow and after pregnancy. Also account for all services (insemination) applied to achieve pregnancy.

For the production cycles where there were no endometritis ("control") were recorded birth dates prior to the date of last service that was considered was pregnant cow, the last service (AI) with which gesture and post-birth pregnancy.

Services were also quantified practiced throughout the cycle (for "case" and "control") made to achieve the pregnancy that the pregnancy was achieved which led to the birth of a live calf.

With this information we calculated the interval from calving to conception, birth, birth interval and number of services per conception.

Statistical Analysis:

A comparison of means between the "cases" and "control" of the three estimators of efficiency, using a generalized linear model. We used a statistical significance level of less than 0.05. For the statistical analysis using the statistical package JMP see. SAS 3.1. (SAS, 1995).

RESULTS AND DISCUSSION

In relation to calving to conception interval was determined statistically significant difference between production cycles and production cycles with endometritis without endometritis (P £ 0.0004). The average calving to conception interval for production cycles with endometritis was 141,302 days on average and for the cycles without endometritis was 110 331, a difference of 30.97 days.

With regard to part-part interval, was determined statistically significant difference between the production cycles with and without endometritis (P £ 0.0002), with 425.56 days on average for those reporting endometritis and 387.78 days for those who did not register endometritis, a difference of 37.78 days.

Regarding the number of services per conception was determined statistically significant difference between the production cycles with endometritis and production cycles without endometritis (P £ 0.0018), 2.58 on average services per conception for endometritis and 2.02 cycles for the cycles without endometritis, a difference of 0.56 more services per conception.

The findings of this study are similar to those reported by other authors (Borsberry and Dobson, 1989; Fourichon *et al.*, 2000; Vacek *et al.*, 2007). One study performed in the CAITSA (Xolalpan *et al.*, 2002) was determined by calving to conception interval of 157.06 days on average for cows with endometritis, 46.86 days greater in cows without endometritis, if we compare these data with the results of this work, we see that the effect of endometritis on the calving to conception interval has decreased by 16 days on average and this decrease could be attributed to the efficiency of control programs, however it would be worth more controlled evaluations of programs attribute to control such a reduction.

In conclusion, endometritis affects the reproductive indicators of CAITSA extending the interval from calving to conception in 30.97 days, the interpregnancy interval in 37.78 days and the number of 0.56 services per conception in more services.

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