

THE IMPACT OF THE LUNAR PHASES ON BOVINE CONCEPTION RATE

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Abstract

The paper tried to make a connection between the lunar phases and the bovine conception rate both in dairy and beef farms. The goal of the study was to improve the efficiency of farming by sparing semen doses used for a successful insemination. 1481 pregnant cattle from seven different areas of Romania were the subject of this study. New moon and waxing crescent vs. full moon and waning crescent were associated with the insemination process. In one farm hormonal timing was used for inducing heats. In the others farmyards the oestrus was marked by spontaneous behaviour changing. The results confirmed a small influence of the lunar phases on the conception rate. The score was tight proportionally with the number of subjects. However the full moon offered a higher number of gestations than the new moon. The cows with hormonal timing heats offered a better connection between the lunar phase and fertility. Further studies could be done in this direction.

Key words: lunar phases, biodynamic agriculture, cattle.

INTRODUCTION

The study started from the known influence of the earth's natural satellite on sexual behavior in humans, the development of plants and animals.

As the moon revolves around the Earth planet, approaching or moving away from it cyclically, producing tides, marine currents alterations, wind direction, it changes and having approved role in sexual behavior of aquatic species (Ramos, 2011).

Since enunciation of the biodynamic agriculture concept by Rudolph Steiner in 1924 (Vogt, 2007), more and more farmers have embraced this approach to agriculture. Currently almost 1 million hectares from 60 countries belonging to several continents are cultivated based on the principle of the interconnection of the solar system with soil, plants and animals.

One of the pillars of this naturist theory is based on the effect of the moon on the living world. Thus all the phenomena related to germination or fertilization are associated with the growth of the moon (Das, 2014).

On the other hand, the period of decrease of the Earth satellite has been found to favor higher quality crops, emergence of vigorous animals, etc. (Subrahmaniam, 1991).

If for vegetable crops: leaf crops, flowers crops, root crops or seed plants crops were created calendar days recommended for sowing, planting or harvesting (Ellis, 2010) for the biology of reproduction in animals, studies are controversial. (Martens, 1998).

On the contrary, some authors believe the entire theory of biodynamic agriculture is charlatanism (Smith, 2010).

MATERIALS AND METHODS

Due to conflicting data in the literature we have tried to contribute with new elements for supporting this unconventional theory.

This paper followed 1481 bovine gestations from both dairy breeds (Holstein) as well as from beef breeds (Angus and Limousin black).

The study was spread over a period of five years. Farms were chosen from six different geographic areas in terms of soil and climate,

covering the historical lands of Romania. The main criterion for selecting a farm was the single insemination for a heat cycle.

The purpose of the research was to identify a potential model to maximize the rate of conception, depending on the period of waxing crescent or waning crescent.

The new moon and the full moon were handled separately. In one farm it was used the hormonal timing of heats.

Oestrus detection was otherwise practiced by animal behavior observation.

Each lunar phase was determined at midnight using the moon chart and the percentage of light.

RESULTS AND DISCUSSIONS

In the dairy farms the differences between the waxing crescent and waning crescent was ranged between 10% and 20% (Figures 1, 2 and 3).

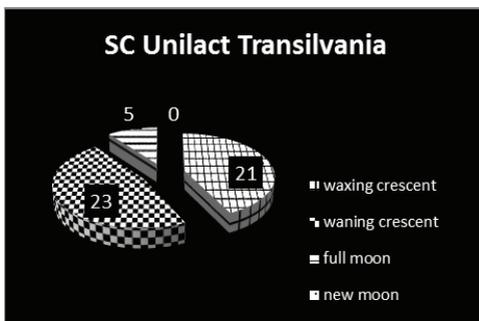


Figure 1. Pregnant dairy cows vs. moon phases. Alba county, 2016

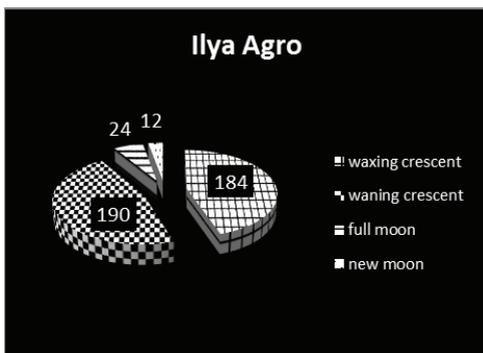


Figure 2. Pregnant dairy cows vs. moon phases. Calarasi county, 2015

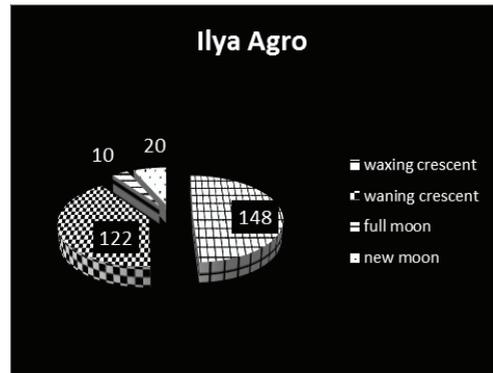


Figure 3. Pregnant dairy cows vs. moon phases. Calarasi county, 2016

As the number of studied animals increased, the differences between the two main phases decreased (Figure 4).

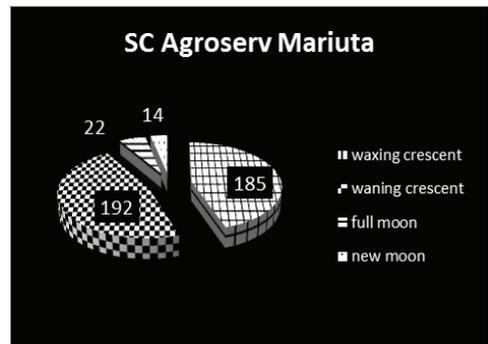


Figure 4. Pregnant dairy cows vs. moon phases. Ialomita county, 2016

Only in hormonal timing farm it was noticed an obvious ratio of 2:1 of the waxing crescent vs. waning crescent (Figure 5).



Figure 5. Pregnant dairy cows vs. moon phases. Timis county, 2013

The full moon phase offered a ratio of 2:1 vs. new moon (Figure 4). For the beef farms the waxing crescent was higher (Figure 6) with the exception of a small farm with 21 pregnant cows. In the last case the number was not significant for the general rule (Figure 7).

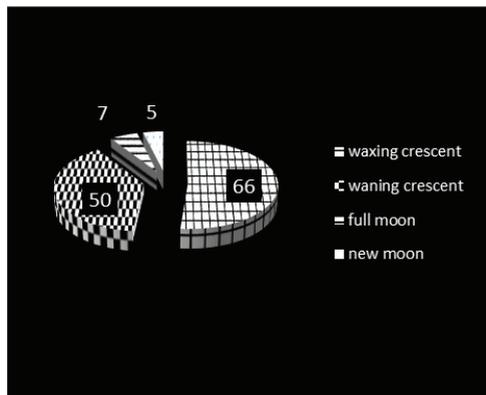


Figure 6. Pregnant beef cows vs. moon phases. Northern Transilvania, 2014



Figure 7. Pregnant beef cows vs. moon phases. Iasi county, 2012

CONCLUSIONS

The full moon phase is the most favorable for high conception rate. On the contrary the new moon phase has the lowest rate. Economically speaking is no justification for sparing semen doses on decreasing moon phase. However grouping the heats with hormonal timing can offer a better solution for a model of inseminations in connection with lunar phases.

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