

Using GnRH to Improve Cow Fecundity after Calving

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Abstract

At dairy cows, the increase in milk production is associated with the decrease of heat manifestation and conception rates. GnRH is mostly used for treatment of different problems of the reproductive function and for improving the pregnancy rates in cows. The aim of our paper was to contribute to increase of conception rates, at cows with ovarian activity, at first AI after calving. The experiments were conducted on 58 cows, from Romanian Black Spotted breed (Frezian) and 53 cows from Romanian Spotted breed (Simmental). The animals were divided into lots as follows: for Romanian Black Spotted breed 33 of the cows in were in experimental lot and 25 were in control lot, for Romanian Spotted breed 29 ere in experimental lot and 24 were in control lot. The females form experimental lots were treated with 100 mcg (2ml) Ovarelin (GnRH), at the first AI, after VWP. At the cows form Romanian Black Spotted, from the 33 females in experimental lot, 12 did not return into heat after insemination, which represents a conception rate of 36.4%. At the cows form Romanian Spotted, form the 29 cows in experimental lot 8 did not return into heat after insemination, representing a conception rate of 44.8%. Administration of 100 mcg GnRH (2 ml Ovarelin) at the time of AI determines a significant increase of the conception rate with 8.4-11.5%, compared with control lot. It appears that the cows from Romanian Spotted reacts better at GnRH treatment (44.8% conception rate), compared with Romanian Black Spotted (36.4 % conception rate).

Keywords: Conception rate, cow, Ovarelin, Romanian Black Spotted, Romanian Spotted

1. Introduction

At dairy cows, the increase in milk production is associated with the decrease of heat manifestation and conception rates [1]. For minimizing these problems a series of strategies for inducing and synchronizing the ovulations were proposed. The programs for hormonal synchronization of the estrus and ovulations are used in dairy cow management, for easing or elimination of the visual heat detection contributing to the increase the pregnancy rates, also [2].

GnRH is used, in dairy cows, for treatment of different disturbances of the ovary function and for improving conception/pregnancy rates [3, 1].

The aim of our paper was to contribute to increase of conception rates, at cows with ovarian activity, at first AI after calving.

2. Materials and methods

The experiments were conducted on 58 cows, from Romanian Black Spotted breed (Frezian) and 53 cows from Romanian Spotted breed (Simmental). All the animals chosen for the experiment were from the same farm. The females had ovarian activity and were without any affections of the reproductive system. The voluntary waiting period (VWP) was 64 days for Romanian Spotted cows and 82 days for Romanian Black Spotted cows.

The animals were divided into lots as follows: for Romanian Black Spotted breed 33 of the cows in were in experimental lot and 25 were in control

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lot, for Romanian Spotted breed 29 were in experimental lot and 24 were in control lot.

The females from experimental lots were treated with 100 mcg GnRH (2ml Ovarelin), at the first AI, after VWP.

Ovarelin is an injectable solution that contains 50mcg GnRH/ml, and it is indicated, especially for the treatment of delayed oviations.

3. Results and discussion

The results obtained are presented in table 1.

Table 1. Conception rates at the first AI after calving

Breed	Lot	Females inseminated (N)	Pregnant after the first AI	
			N	% (conception rate)
Romanian Black Spotted	Control	25	7	28.0
	Experimental	33	12	36.4
Romanian Spotted	Control	24	8	33.3
	Experimental	29	13	44.8

At the cows from Romanian Black Spotted, from the 33 females in experimental lot, 12 did not return into heat after insemination, which represents a conception rate of 36.4%. From the 25 cows that formed the control lot, 7 did not return in heat after insemination, representing a conception rate of 28.0. Between the conception rates calculated for females from experimental lot and from control lot there is a difference of 8.4%, in the favor of females from experimental lot.

At the cows from Romanian Spotted, from the 29 cows in experimental lot 13 did not return into heat after insemination, representing a conception rate of 44.8%. From the 24 cows in control lot 8 did not return into heat, representing a conception rate of 33.3. Between the conceptions rates, calculate for the two lots there is a difference of 11.5 in the favor of the experimental lot.

From this experiments it is ascertained that GnRH, administered in the same time with AI, determines a significant increase of conception rate with 8.4 and 11.5, compared with the control lots. It seems that cows from Romanian Spotted reacts better to GnRH treatment, compared with cows from Romanian Black Spotted (the difference is 3.1% for conception rate between experimental lots).

From the analysis performed by Morgan and Lea [3] results an increase in conception rates with 12.5% at the cows treated with GnRH at the time

of AI. Lopez Gatus et. al. [1] obtained an increase of the conception rates with 10.2% at the cows treated with GnRH at the time of A.I.

4. Conclusions

- Administration of 100 mcg GnRH (2 ml Ovarelin) at the time of AI determines a significant increase of the conception rate with 8.4-11.5%, compared with control lot.
- It appears that the cows from Romanian Spotted reacts better at GnRH treatment (44.8% conception rate), compared with Romanian Black Spotted (36.4 % conception rate).

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