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Factors Affecting Days Open in Dairy Cattle

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Abstract

The study was conducted on 21 cows of Holstein - Friesian, presented in the farm of Coll. Vet. Med. University of Baghdad. The age of the animals ranged between 6 to 8 years and the numbers of parturition were 3-6. The cows were divided into groups according to the milk production in the season. The 1st group consist of 11 cows which produced 200-300kg/ season. While the 2nd group consist of 10 cows, which produced 300-400 kg/ season. The animals were also divided according to the numbers of parturition, cows with 3-4 birth (10), and cows with 5-6 birth (11). The sex of the calf were also taken in consideration. The results showed that there was no significant difference in milk production affecting open days and in the numbers of parturition that affect days open. The sex of the calf showed a significant difference ($P \leq 0.05$) on the open days. The cows that give birth female calf having more open days as compared with those give male calf. It was concluded from this study that milk production and parity have no effect on days open, while the sex of the calf especially female calf have a significant difference on days open.

Keywords: ***Dairy cows, Day open, Milk production, Parity, Sex of the calf.***

Introduction

The herds of the cattle suffered from a problems of lowered fertility in different countries. These problems leads to increase in the days open and the calving interval that causes a great economical losses resulted from the high cost of the ration, management and veterinary service and also cause calf losses at the productive age [1]. The fertility of the cows depends upon the months postpartum especially on uterine involution and rebound ovarian cyclical activity and the onset of oestrus. Open days considered as a good indicator for measurement of reproductive performance in dairy cattle especially in united Kingdome [2]. The culling of dairy cows from herd depends upon the length of days open [3]. It has been reported by a new study that insemination of the cow early after 30 days postpartum causes endometritis that leads to increase days open [4]. [5] observed that the reproductive performance of cows included the mean of days open affected by the numbers of parturition. As the numbers of birth raised, the mean of days open increase. When used database of dairy cattle farm, it has been showed that milk production and infection with postpartum diseases have negative significant difference on the mean of days open and the numbers of service per conception [6]. It has been reported that the numbers of service per conception increased with increased the numbers of parturition especially after the third birth accompanied with increase in the mean of days open of cows as compared with primiparous cow [7]. It has been showed by [8] that the numbers of days open increased with increase the numbers of parturition which leads to decrease in the conception rate in cows with the fourth birth and more. It has been reported in Czech-Holstein dairy cows that there was a positive correlation between pregnancy at

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first service and the age of the birth with the calving interval and days open. So the reproductive performance could be improved through selection of animals with high genetic merit [9]. In order to reach a lower age at the first birth, which is of great importance that accompanied with the health of the udder to increase the age of milk production and improve productive performance and the possibility of birth for the three time [10]. It was found by [11] in Egypt in a herd of Friesian cows that the sire have an effect on calving interval, days open, the numbers of service per conception and the age at the first services. So it is possible to improve reproductive performance by selection and genetic improvement of herd sires. It is not improved that there was an effect of the numbers of milking on days open, the numbers of service per conception or other reproductive indices [12]. It has been shown that the sire has an important role in reproductive performance of cows especially those in high land tropical environment and the role with the period and the numbers of parturition [13]. It has been reported that the body condition score has an effect on reductive performance in Japanese Holstein cows. It was found that lower body condition score leads to decrease fertility through an increase in calving interval and days open [14]. Season of parturition have an effect in high milk producing cows, so should take in consideration at summer season in order to keep the body condition score in a good manner through the energy level in ration, percent of protein, the health of reproductive system and reduce the heat stress in order to get a good income from dairy cows farm [15]. The aim of this study designed to know the effect of some factors on days open in dairy cows.

Materials and methods

The study were carried out on 21 cows of Holstein - Frisian breed, presented in the farm of Coll. Vet. Med. Baghdad University, The aged of animals ranged between 6-8 years and the numbers of parturition are 4-6 times. All information has been taken from the records and computer of the farm for several years for each cow to know the effects of factors under the study such as milk production, numbers of parturition, sex of the calf and the days open. The cows were divided in two groups according to milk production (200-300 kg VS 300-400 kg) and the numbers of parturition (3-4 times VS 5-6 times) and the sex of calf (male VS females). The means of the length of open days were compared between groups. Statistical analysis were done according to SAS program using CRD.

Results and Discussion

Reproductive performance indices regarded as an indicators for reproductive status of the cattle. After birth in cattle, there was a significant time of sexual rest of different length. This period regarded as postpartum anestrus period. The extension of this period may have an adverse effect on reproductive performance indices. It had a negative effect on the time of uterine involution and resumption of normal ovarian cyclicity [16]. The goal of this study was to know about the some causes that leads to increase the open days, in order to reduce the economical losses resulted from empty cows. The results showed (Table-1) that there was no significant difference between cows produced 200-300 kg milk and cows produced 300-400 kg milk in season. Although high milk producing cows mathematically showed increased open days.

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Table-1 Effect of milk production on days open in dairy cows

Item	Groups		P- value
	200-300kg	300-400kg	
Period (day)	262±8.75	313±35.3	N.S.

Values: mean ± SE.
N.S.: Non significant at probability value (p≤0.05).

This indicate that milk production have no effect on open days length. These results agreed with [17, 18]. It has been reported that uterine involution accrued more in cattle have a higher milk production [18]. On contrary, it has been observed that milk yield has an effect on uterine involution, the increase milk production leads to delay uterine involution [18, 19]. Table-2 showed no significant difference between cows with 3-4 parturition and cows with 5-6 parturition. This indicate that a good cows with increase parturition have no effect on open days. It has been reported that pluriparous. Cows required more time to complete the uterine involution than primiparous cows [18, 20]. On contrary, the uterine involution was earlier in pluriparous cows than in primiparous cows [21]. However, other worker observed that the aged cows did not affect the uterine involution rate [22].

Table-2 Effect of number of births on days open in dairy cows

Item	Groups		P- value
	3-4	5-6	
Period (day)	123±6.21	139±8.62	N.S.

Values: mean ± SE.
N.S.: Non significant at probability value (p≤0.05).

The results also showed (Table-3) that cows gave birth male calf having lower open days as compared with those gave birth of female calf. There was a significant difference between the two groups (P≤0.05).

Table-3 Effect of calf sex on days open in dairy cows

Item	Groups		P- value
	Male	Female	
Period (day)	120±5.82[b]	144±8.40[a]	0.0290

Values: mean ± SE.
Different small manuscripts indicate statistical difference at probability value (p≤0.05).

It have been reported that postpartum nutritional status of the cow may leads to increase or decrease of uterine involution period l.e. the open days and calving interval [23]. It has been found that calf sex affected significantly the uterine involute, open days and calving interval. It was reported that buffalo cow that born female calf have faster uterine involution as compared with those born male calf [24].

Conclusions

It was concluded from this study that milk production and parity have no effect on days open in cows. While cows gave birth female calf have a significant increase in days open.

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