

THE REPRODUCTIVE PERFORMANCE OF THREE IMPORTED HOLSTEIN HERDS IN IRAQ

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SUMMARY

The reproductive performance of three imported Holstein herds in Iraq was investigated in a field study. For this purpose a total number of 889 cows and heifers from three dairy stations that had been on a poor fertility management were palpated rectally for pregnancy determination. Of these, only 289 cows (32.5 %) were pregnant and 541 (60.85 %) were not pregnant. Regarding the non pregnant cows, 385 cows (70.38 % of the non pregnant, 43.3 % of the total) had a normal genital tracts (normal uteri and functional corpora lutea), indicating that they were cycling; the rest had palpable pathological findings; 69 (12.6 % of the total non pregnant) had ovarian inactivity, 56 (10.2 %) had purulent metritis; 14 (2.55 %) had cervical fibrosis; 12 (2.19 %) had cystic ovary and only two cows (0.36 %) had a mucometritis. The present data indicate low reproductive performance of these herds. Causes of high conception failure in these herds are discussed.

INTRODUCTION

Reproduction is a vital factor in determining the level of production and profits of diary enterprise (1). In this regard the most profitable herds have a best reproductive performance. Worldwide, the conception rate is taken as a major factor accounting the level of reproductive performance (2,3,4).

Meanwhile, a variety of reproductive problems can result in lowered the fertility and reproductive performance in dairy cattle (5,6). Therefore, large attention has been given to investigate and to treat the reproductive problems in order to improve the conception rate (7,8). For this purpose several studies have been conducted to improve the fertility management by introducing new methods and techniques (9,10,11,12). The present study has been carried out to investigate the reproductive performance of imported dairy cows in three dairy stations in Iraq.

MATERIAL AND METHODS

Cattle involved in this study consisted of 889 Holstein Friesian cows and heifers belonging to three dairy stations in Iraq (Al-Mussiab, Al-Jizzani and Al-Najaf stations) that had been under poor reproductive herd-health management for at least one year. In this regard, the genital organs of cows were not submitted to reproductive health examination schedule in order to prevent and control reproductive problems. These herds utilized a ratio of one bull to more than 60 cows. Genital and accessory organs of bulls were not subjected to any clinical investigations nor their semen was assessed.

The bulls allowed to run in the herd all year around. The genital organs of all the cows were thoroughly palpated by an experienced examiner. Pregnancy was confirmed by identifying the amniotic vesicle, foetal membranes slip, cotyledons or foetus (13). In the non-pregnant animals, ovaries and uteri were examined carefully to determine ovarian activity and uterine normality. Feeding program in these herds was not stable and depends on the available green, concentrated and dry food at the time of feeding.

RESULTS

A total number of 289 cows were diagnosed as pregnant (32.29 %). Meanwhile, 541 cows (60.85 %) were diagnosed as non pregnant (Table,1). In 26 animals, the pregnancy status was not confirmed, therefore they were examined latter (Table,1). Uterine involution in 33 cows (3.68 %) was in complete at the time of examination and those were considered as cows in their postpartum period (Table,1). 43.3 % of all cows and 70.38 % of all non-pregnant cows had active ovaries and normal uteri (Table,1). Whereas ovarian abnormalities and uterine pathological findings were detected in 156 animals (29.6 % of the non-pregnant and 17.5 % of the total) (Table,1). Ovarian inactivity was diagnosed in 69 cows and heifers (4.25 % of non pregnant with pathological changes and 12.6 % of all non pregnant) on the basis of palpatind an atrophid or hypoplasia ovaries (Table,2) Ovaries of these cows measured less than 2 X 0.5 X 0.5 cm and with no functional structures. Chronic purulent metritis was diagnosed in 56 cows (35.89 % of non-pregnant with pathological changes and 10.2 % of total non-pregnant) (Table 2). In those cows, corpora lutea were palpated and the massage of both horns was usually accompanied with pus flowing out from vagina. Ovarian cysts were diagnosed on ovaries of twelve cows (Table,2). These ovaries measured more than 5 cm with a large soft follicular structure, present Fibrosis of the cervix was identified in 14 cows (8.97 % of non pregnant with pathological changes and 2.5 % of the total non pregnant) (Table,2). A hard fibrotic structure was palpated within the structure of the cranial part of the cervix in these cows. Mucometritis was diagnosed in three cows (Table,2). The diagnosis depended on the volume and consistency of the fluid flowing from the vagina. In addition two had adhesion of the uterus and ovaries.

DISCUSSION

The result obtained from our field study which lasted 3 months and utilized 889 cows and heifers revealed that only 289 cows were confirmed as pregnant. This means that the rate of pregnancy in these herds is 33.5 %. Undoubtedly this percentage is lower than the acceptable level of productivity in dairy industry (70 - 90 %) (1,3,4,14). Meanwhile sixty percent of the cows were diagnosed as non-pregnant which is higher than those reported by others (10 -30 %) (2,3). Seventy percent of the non pregnant cows were cycling normally at the time of examination. The significant ratio of one bull for more than sixty cows which was used in these herds may have accounted for this lower conception rate. Under such condition it was not practical to use a bull or bulls on large groups of females since several animals in the group might not be served (14,16). On the other hand, the bulls which had been used in these herds had not been tested by performing a breeding soundness examination so infertile or subfertile bulls might be over looked (16). Forty four percent of the non-pregnant cows had inactive ovaries. This might be due to nutritional deficiency (17,18). Purulent metritis detected in 56 cows (35.8 % of the non-pregnant with pathological changes). Retained fetal membrane, dystocia and mishandling might have been the main cause of the metritis (3,19,20). Cystic ovaries (follicular cyst) consisted only seven percent of non - pregnant with pathological changes cows, such percentage was relatively lower than that reported by other author in dairy herds (21). Thirty-three cows (3.6 % of the total number) were considered in the early postpartum period, conception rate expected to be low in such animals (22). In conclusion, poor sexual management which was applied in these 3 dairy stations was the main cause of the low reproductive performance. Furthermore, the high percentage of

normal cycling non-pregnant cows gives an indication that the bull factor could be the main source of the problem. Meanwhile, the influence of cow and management factors on the reproductive performance of these herds cannot be overseen.

Table 1 : Pregnancy and clinical status of cows and heifers.

Status	Al - Musstah			Al-Jizzani			Al-Najaf			Total		
	No.	% of total	% of non pregnant	No.	% of total	% of non pregnant	No.	% of total	% of non pregnant	No.	% of total	% of non pregnant
Pregnant	151	29.03		32	18.82		106	53.2		289	32.5	
Suspected pregnancy	15	2.88		6	4.11		5	2.51		26	2.9	
Postpartum cow	12	2.3		12	7.05		9	4.52		33	3.68	
Non pregnant with cycling normal genitalia	239	45.96	69.88	84	49.41	70	62	31.15	78.48	385	43.3	70.38
Non pregnant with pathological changes	103	19.8	30.11	36	21.17	30	17	8.54	21.51	156	17.5	29.6

Table 2 : Clinical diagnosis of non pregnant cows and heifers with reproductive pathological changes.

Status	Percentage of non pregnant with pathological changes	Percentage of total non pregnant	Percentage of total number
Inactive Ovary ... 69	44.2	12.6	7.76
Purulent metritis ... 65	35.89	10.2	6.299
Cervical Fibrosis ... 14	8.97	2.55	1.57
Cystic Ovary ... 12	2.69	2.19	1.3
Mucometrities (mucometra)... 2	1.28	0.36	0.2
Adhesion of ovary of uterus... 2	1.28	0.36	0.2

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الكفاءة التناسلية لأبقار الحليب المستوردة في العراق

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الخلاصة

في دراسة حقلية تم بحث الكفاءة التناسلية في أبقار الحليب المستوردة. لهذا المرض تم فحص (٨٨٩) بقرة وعجل متوزعة على ثلاث محطات لإنتاج الحليب هي (تحت رعاية تناسلية ضعيفة) بواسطة الجنس اليدوي عن طريق المستقيم. كانت هذه المحطات تعتمد التلقيح الطبيعي وبنسبة ثور واحد لأكثر من ستين بقرة. في هذه الدراسة تم تشخيص الحمل بصورة أكيدة في (٢٨٩) بقرة (٣٢,٥ %) فقط ، في حين كان عدد الأبقار غير الحامل ٥٤١ بقرة (٦٠,٨٥ %) . بالنسبة للأبقار الغير حامل تأكد بعد الفحص الدقيق أن ٣٨٥ بقرة (٧٠,٣ % من الأبقار غير الحامل و ٤٣,٣ % من العدد الكلي) تمتلك قناة تناسلية طبيعية (رحم طبيعي مع وجود جسم أصفر فعال في أحد المبيضين) . مما يؤكد ان هذه الأبقار تكمل ؟؟ المبيض بصورة طبيعية. أما بقية الأبقار غير الحامل فقد كانت تعاني من أمراض وعلل تناسلية وكما يأتي ٦٩ بقرة (١٢,٦ %) من الأبقار غير الحامل تشكو من قلة نشاط المبايض ، ٥٦ بقرة (١٠,٢ %) لديها التهاب رحم قبيح ، ١٤ بقرة (٢,٥٥ %) تحمل تليف في عنق الرحم ، ١٢ بقرة (٢,١٩ %) لديها تكيس مبايض وبقرتين فقط تشكو من موه الرحم. ان معدل الحمل في هذه المحطات أقل من الحد الإنتاجي المطلوب لمثل هذه المشاريع وان تحليل النتائج التي تم الحصول عليها في هذه الدراسة تشير إلى أن السبب الرئيسي لهذا الفشل التناسلي في هذه القطعان يعود إلى استخدام الثور وبنسبة ؟ أكثر من ٦٠ بقرة حيث ان نسبة عالية من الأبقار غير الحامل كانت طبيعية ولا تشكو من مشاكل تناسلية ، في حين أن أسباب عدم الحمل في الأبقار الأخرى يعود الى عوامل تتعلق بالأبقار والإدارة الحقلية.