

**Report on:
EFFECT OF BULL SEMEN QUALITY ON
REPEATABILITY AND MILK PRODUCTION OF COWS.**

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ABSTRACT

The present work was carried out to investigate the effect of semen quality of bulls on repeatability and milk yield of cows.

One hundred cows from a private dairy farms 360 kms southern Khartoum city were suffering from repeatability and poor milks yield

Veterinary medical diagnosis was carried out for the cows, no ventral disease or physiological aspects were observed, semen ararnination was done to the sires (six), four sires out of them had aspermia, while the other two sires have low fertility rate (less than 50 %).

The sires replaced with proven ones , hence the cows onceived and became pregnant, calved and gave abundant milk.

The present work research found that there is positive effect of semen evaluation on conception and on milk yield. It could be the research recommended that monthly semen evaluation and brucella test to must be carried out minimize to avoid the repeatability and indirectly to increase yield the poor milk of the cows.

Keywords: Bull, Semen, Repeatability, Milk Production

INTRODUCTION

One of the most important factors to be examind for bull fertility is semen evaluation (Setchell, 1977).

Bull fertility usually considered as a measure for sire reproductive efficiency Bearden, and Fuquqa (1987) proven sire is very important for dairy fanning and it should be mature enough to copulate, healthy, has moderate size, from good dairy breed, more sexually aggressive, more quickly moving around and copulate more often before exhausted (Webster, 1987). Semen should be examined and evaluated in vitro before insemination. The factors cause defect in sperm viability such as testicular. Degeneration, iorchites, epididymitis, heat stress, and inadequate feed. So this study aime to study the effect of semen quality on repeatability and milk production of cows.

MATERIALS AND METHODS

One hundred cows and 6 Bulls from a private farm (360 kms southern Khartoum were kept examined for the following:

1. Brucella test: (Ring test).
2. Semen quality (Semen to be examined to recognize the viscosity, colour, mortality, volume concentration and fertility).

Collection of semen:

Electro ejaculator was used as follows:-

- Evacuation and cleaning of each bull rectum from the faeces with hand.
- Rubbing the electroejaculator with slippery stuff. (soup), vasline, etc.).
- Inserting the device into the bull rectum
- Put on the power which increased gradually from 10-15 rotary — (2 voltage /10 second)- put off the power, then put on and repeat (on and off) four to five times till ejaculation occur.
- Put the ejaculated semen in 10 cylinders. Then pull out the electroejaculator clean and keep it.
- The collected semen from each bull was evaluated for viscosity texture, colour, motility, volume, density by using direct cellcount method (Hemocytometer) to determine concentration, and fertility rate.

RESULTS

Table 1 showed the characteristics of semen collected from the experimental bulls. The results indicated that two out of six bulls had ejaculate volume of 5.48 and 6 ml. The motility percent for each one was about 60%. Sperm cell concentrations were low ranged between 67– 80X 10⁶/ ml caused the decreasing of sperm out put / ejaculate being 480 and 367.16 X 10⁹, respectively. Such decreasing in the semen characteristics in the present study is acceptable because of the using of the electroejaculator for semen collection comparing with the semen collected using the artificial vagina (Zeidan *et al.*, 1998 and Dandowsh, 2002).

Regarding the percentage of the nonreturning cows (pregnant cows) it was 45% when the semen of the first bull was used in the insemination, while it decreased to be 41% by using the second bull semen in insemination.

Four bulls, about 67% were infertile having aspermia in the ejaculated semen.

Low semen quality and low fertility of the bull caused low fertility and pregnancy rate of the cows used in the present work. These were resulted in reducing the milk yield in the studied farm.

The result indicates that the main cause of low milk yield is that from the bull, as indicated the table below so that regular evaluation of semen directly minimize milk production rate and increase the number of calving lactation cows and amount of total yield. So it could be concluded that bull fertility is the key to the dairy profit.

Table (1): Semen characteristics for experimental bulls.

Bull No.	Viscosity	Colour	Volume (ml)	Motility (%)	Concentration/ mlX10 ⁶	Sperm out put/ ejaculateX 10 ⁹
1	Watery	Clerely white	6	60	80.00	480.00
2	Watery	Clerely white	5.48	60	67.00	367.16
3	Watery	Clerely	2.1	0	0	0
4	Watery	Clerely	2.3	0	0	0
5	Watery	Clerely	2.2	0	0	0
6	Watery	Clerely	2.5	0	0	0

Conclusion

- The Poor milk production of the mentioned farms. due to sire in fertility.
- Semen evolution is amajor tool in dairy profit.
- Low milk production is not always due cow fertility.

Recommendation:

- Semen evaluation should be carried out regularl during the breeding season.
- Brucella test should be dOne before every breeding season.
- Health and breeding records including (S.E. should be considered in every dairy farm.
- Selection of proven sires is the key of dairy profit.

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تأثير جودة السائل المنوي للطلاق على الخصوبة وإنتاج اللبن في الأبقار
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يهدف هذا البحث لدراسة أثر جودة الطلاق على الخصوبة وإنتاج الحليب في الأبقار تم إجراء البحث في مزرعة خاصة جنوب الخرطوم تم فحص الأبقار لمعرفة وجود أمراض تناسلية، وكانت النتيجة سالبة وأتضح أن كل الأبقار صحيحة، حيث تم تقييم النطف لعدد ستة طلاق كانت النتيجة أن أربعة فيها غير خصبة والاثتان الباقيان نسبة خصوبتهما أقل من ٥٠% أتضح من نتائج البحث انخفاض نسبة الحمل وانخفاض إنتاج الألبان نتيجة لعدم خصوبة الطلاق المستخدمة (لذلك ننصح بناءاً على نتائج هذه الدراسة أن يتم إجراء تلقيح لتحقيق ربحية المزرعة).