J Krishi Vigyan 2015, 4(1) : 60-62 DOI: 10.5958/2349-4433.2015.00061.6

Management of Repeat Breeding Under Field Condition Using Ovsynch Protocol in Cross Bred Cows

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ABSTRACT

A study was carried out on 20 repeat breeding crossbred cows to evaluate the use of ovsynch protocol (Hormonal Protocol) in improving the reproductive efficiency. All the repeat breeding cows were treated with 0.02mg GnRH (Receptal 5 ml i/m) on the day of estrus, on 7th day of estrus cows were given PGF$_2$á (Lutalyse 5 ml I / m) and on 9th day of estrus, all repeat breeding cows were given repeat dose of 0.02mg GnRH (Receptal 5 ml i/m). Artificial insemination was carried out on 24 hrs after last GnRH injection. Conception rate in first, second, third service and overall conception rate was 30.0, 20.5, 5.0 and 55.0 per cent, respectively. Hence, ovsynch protocol is recommended for their judicious use in the field to solve the problem of repeat breeding cross bred cows.

Key Words: - Repeat Breeding, Hormonal Therapy, Conception Rate.

INTRODUCTION

The breeding efficiency of dairy animals is directly related to the prosperity of dairy industry. Numerous studies have shown that repeat breeding is still one of the most prevalent reproductive disorders in dairy cattle. Several hormonal therapies are being tried to combat the problem of the repeat breeding in dairy animals. Ovsynch protocols are being presently used for management of repeat breeding in controlled condition. Poor estrus detection and poor conception rates have resulted in huge challenges in managing reproduction in most lactating dairy cow herds. In an effort to assist producers in managing reproduction in a more effective manner, synchronization protocols have been developed with the use of PGF2á. This includes efforts to create timed artificial insemination protocols to assist in estrus detection (Stevenson *et al*, 1989). In the past, synchronization protocols have been effective with PGF2á when animals were bred to detected estrus (Archibald *et al,* 1992; Lucy *et al,* 1986). Using PGF2á allows producers to increase detection of estrus and artifiical insemination management. One important limitation of these protocols has been the fact that estrus has not completely been synchronized, with animals coming into estrus over a period of several days (Lauderdale *et al,* 1974).

Under the field conditions, very fewer trials were conducted for the management of repeat breeding. Hence, the study was planned to evaluate the effect of ovsynch protocol for the management of repeat breeding cross bred cows.

MATERIALS AND METHODS

A total of 20 repeat breeding cross bred cows from different villages of mater taluka that had taken more than 3 infertile services with good quality frozen-thawed semen were selected. Deworming was carried out by using Fenbendazole 3000mg (Panacur - MSD) in all selected cows. All the selected animals were also vaccinated against Hemorrhagic Septicemia and Foot and Mouth disease. All selected repeat breeding cows were treated with powder Cephalexin (Lixen 4 g) intrauterine to check the infection if present in any animals.

All selected animals when came in estrus were treated with 0.02mg GnRH (Receptal 5 ml i/m). On 7th day of estrus cows were given PGF$_2$á (Lutalyse 5 ml i/m) to regret the corpus luteum and on 9th day of estrus, repeat dose of 0.02mg

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Table 1. Effect of using Ovsynch technique on conception rate in cross bred cows.

Type of Animals	No. of Animals	Conception Rate (%)			
		First Service	Second Service	Third Service	Overall
Repeat breeding Cross bred cows	20	30 % (n=6)	20 % (n=4)	5% (n=1)	55% (11/20)
By using Ovsynch technique	20	30.0	42.9	0.0	60.0

GnRH (Receptal 5 ml i/m) were given for better ovulation. Artificial insemination was carried out on 24 hours after last GnRH injection. Pregnancy was confirmed per rectum in non-return cases 60 days post artificial insemination. All selected cows were followed for 3 cycles post treatment.

RESULTS AND DISCUSSION

Conception rate

The conception rate at first cycle was 30.0 per cent , whereas the same with second and third cycle was 20.0 and 5.0 per cent, respectively with an overall conception rate of 55.0 per cent . On the other hand when Ovsynch technique was used, the conception rate on first, second, third service and overall conception was observed to be 30.0, 42.9, 0.0 and 60.0 per cent, respectively (Table 1).

Jobst *et al* (1999) reported 30.1 per cent conception rate at first service in cows. Bhoraniya *et al* (2012) and Naikoo (2012) reported 33.3 per cent first service conception rate in Kankrej cows. Similarly, the comparable overall conception rates of 3 cycles following Ovsynch treatment have been reported in cows by Geary *et al* (2001) 61.0 per cent, Sathiamoorthy *et al* (2008) as 56.3 per cent, Vijayarajan *et al* (2009) as 60.0 per cent and Sathiamoorty and Karthirchelvan (2010) and Naikoo (2012) as 55.5 per cent.

In contrast to the present findings, the higher overall conception rates were reported by many scientists. Ansari *et al* (2008) and Muneer *et al* (2009) reported 90.0 per cent conception, while Kumar *et al* (2010) and Ammu *et al* (2012[a]) reported 83.3 per cent conception rate in anoestrus crossbred and/or zebu cows. In contrast, the relatively lower overall conception rates obtained by others with Ovsynch protocol include Raut *et al* (2008) 46.7 per cent, Sathiamoorthy *et al* (2008) as 45.5 per cent, Mahour *et al* (2012) 40.0 per cent and Naikoo (2012) 33.3 per cent in anoestrus cows and Barot *et al* (2011) as 49.5 per cent in cows and 32.2 per cent in buffaloes.

The possible reasons for variation could be the reproductive status or stage of oestrous cycle at the beginning of the protocol, apart from nutritional, managerial, lactation status, drug source, age and such other factors. The present results, however, suggest that the application of Ovsynch protocol can serve as a good tool for induction of estrus and ovulation as well as enhancement of conception rate in repeat breeding crossbred cows in field condition.

CONCLUSION

Reproductive efficiency is dependent upon both service rate and conception rate. The Ovsynch protocol described above has many benefits as it greatly increases the service rate in a herd of dairy cows. Instead of waiting for the cows to come into heat, all of the cows subjected to the protocol are inseminated. A very important benefit is that all cows subjected to this protocol do not have to undergo heat detection. Traditionally, this is a very time-consuming process that often results in “missing” cows that are in heat. By synchronizing ovulation, heat detection is eliminated. However, only one clarification is that Ovsynch does not increase conception rates but rather increases service rate.

REFERENCES

Ammu R, Dhami A J, Naikoo M, Parmar B C and Divekar B S (2012[a]). Estrus induction and fertility response in postpartum anoestrus Gir cows. *Indian J Anim Reprod* **33**(1): 37-42.

Ansari S M A, Rao K S and Raju K G S (2008). Studies on postpartum anoestrus with special emphasis on induction of oestrus in crossbred cows. *In Proc. XXIVth Annual Convention of ISSAR and National Symposium, KVAFSU, Bangalore,* 11-13 December, p.23.

Archibald L F, Tran T, Massey R, and Klapstein E (1992). Co nception rates in dairy cows after timed-insemination and simultaneous treatment with gonadotropin-releasing hormone and/or prostaglandin F2o. *Theriogenology* **37**:723.

Barot L R, Patel A S, Kachhiapatel A J and Panchal M T (2011). Efficacy of Ovsynch protocol and FTAI on oestrus synchronization and pregnancy rates in dairy cows and

buffaloes: A field study. *In proc: National symposium and XXVII Annual convention of ISSAR, Mizorum,* 27-29 Sept., p. 8.

Bhoraniya H L, Dhami A J, Naikoo M, Parmar B C and Sarvaiya N P (2012). Effect of oestrus synchronization protocols on plasma progesterone profile and fertility in postpartum anoestrus Kankrej cows. *Tropical Anim Health Prod* **44**(6): 1191-1197. DOI 10.1007/s11250-011-0057-1.

Geary T M, Whittier J C, Hallford D M and Macneil M D (2001). Calf removal improves concption to the Ovsynch and Co-Synch protocols. *J Anim Sci* **79**:1-4.

Jobst S M, Nebel R L, MeGilliard M L and Pelzer K D (1999). Evaluation of reproductive performance in lactating dairy cows using three systematic breeding protocols: 14-d PGF, timed AI, and GnRH-PGF. *J Dairy Sci* **82** (Suppl. 1): 57.

Lauderdale J W, Seguin B E, Stellflug J N, Chenault J R, Thatcher W W, Vincent C K, and Loyancano A F (1974). Fertility of cattle following PGF2o injection. *J Anim Sci* **38**:964-967.

Lucy M C, Stevenson J S, and Call E P (1986). Controlling first service and calving interval by prostaglandin F2o gonadotropin-releasing hormone and timed insemination. J Dairy Sci **69**:2186.

Mahour S S, Nema S P, Shukla S P, Shrivastava N and Mehta H K (2011). Biochemical profile of postpartum anoestrus and induced oestrus crossbred cows. *Indian J Field Vets* **6**(3): 53-55.

Muneer S, Sadasiva Rao, K and Solmaon Raju K G (2009). Efficacy of GnRH-PGF$_2$á-GnRH, PMSG and PMSG + hCG in postpartum anoestrus crossbred cows. *Indian J Anim Reprod* **30:** 7-9.

Naikoo M (2012). *Monitoring Postpartum Reproductive Performance in Kankrej Cows through Clinical Diagnosis, Blood Profile and Hormonal Therapy*. Ph.D. Thesis, Anand Agricultural University, Anand, Gujarat, India.

Raut B M, Raghuwanshi D S, Chinchkar S R, Sahatpure S K, Raut J D and Raghorte Y M (2008). Synchronization of estrus by Ovsynch protocol. *In XXIV Annual Convention of ISSAR and National Symposium, Bangalore, India,* p. 51.

Sathiamoorthy T , Parthasarathy R and Karthirchelvan M (2008). Estrus response and fertility rate in PGF$_2$á, CIDR and Ovsynch treated crossbred heifers. *Proc. XXIV Annual Convention of ISSAR and National Symposium, Bangalore, India,* p. 58.

Sathiamoorty T and Kathirchelvan M (2010). Efficacy of PGF$_2$á, CIDR and Ovsynch treatment on estrus response and fertility rate in crossbred cows. *Indian J Anim Reprod* **31**(2): 43-45.

Stevenson J S, Mee M 0, and Stewart R E (1989). Conception rates and calving intervals after prostaglandin F2o or prebreeding progesterone in dairy cows. *J Dairy Sci* **72** : 208-218.

Vijayarajan A, Chandrahasan C and Napolean E R (2009). Synchronization of ovulation in repeat breeding crossbred cows. *Indian J Field Vets* **5**(1): 57-58.

Received on 4/3/2015 Accepted on 15/5/2015