

Fertility of frozen buffalo semen in rural western Maharashtra.

M.R.BHOSREKAR^{1†}, R.C.MAZKOR² AND R.S.RANE³

B.G.Chitale dairy farm, R & D Division, Bhilawadi Station Dist. Sangali, MS-416 303

Received: October 6, 2001

Accepted: July 19, 2002

ABSTRACT

Frozen semen was used for breeding buffaloes in the rural areas through buffalo breeding centres managed by trained Para veterinarians and veterinary officers. 18 such centres situated in 5 taluks of Sangali district were taken where AI was carried out. The records of bull mother farm at Bhilawadi station were also analyzed for conception rate. There was significant difference between centres and months for conception rates.

Key words: Fertility, Buffalo semen.

In India, about 65 per cent of total production of milk in a year comes from buffaloes. In spite of its usefulness, the buffalo has been very much neglected. Recently, there has been great interest in improving its productivity. One such attempt was undertaken at Bhilawadi station using frozen semen of meritorious and pedigreed Murrah bulls. The frozen semen produced in French mini straws at Bhilawadi station from 10 pedigreed Murrah buffalo bulls was used through well trained Para veterinarians (LSS) and veterinary officers posted at breeding centres each covering 3 to 4 cluster of villages in the radius of 10 KMs. Such 18 centres in five taluks of Sangali district and buffalo bull mother farm situated at Bhilawadi station were used for assessing the results.

A total of 14392 artificial inseminations in 3 years were carried out from frozen semen of 10 Murrah buffalo bulls giving an average conception rate of 34.12%. Centre wise distribution of inseminations and conception rate with standard error has been given in table 1. The inseminations carried during 1998, 1999 and 2000 were 4734, 6228 and 3430 giving 33.3, 33.7 and 31.2% conception rate, respectively. The analysis of variance did not show any significant difference. The distribution of inseminations month wise has been given in table 2 along with conception rate and standard error. There was significant difference at 1% level

¹National Dairy Development Board, Krishna Keval complex, Main Kondhwa Road, Pune - 48, ^{2&3}M/s B.G.Chitale Dairy farm, R & D Division

[†]Corresponding author

Table 1: Centre wise conception rate

| Sr. No. | Centre | Total AI | Conception rate \pm S.E. |
|----------|---------------------------------|----------|----------------------------|
| 1. | Ankalkhop | 1055 | 34.86 \pm 1.65 |
| 2. | Asta | 977 | 30.55 \pm 1.59 |
| 3. | Bhalvani | 667 | 33.75 \pm 2.03 |
| 4. | Bhavaninagar | 288 | 44.14 \pm 3.48 |
| 5. | Bhilawadi | 1159 | 36.24 \pm 1.59 |
| 6. | Bhilawadi station | 928 | 30.61 \pm 1.65 |
| 7. | Chopadewadi | 1086 | 33.96 \pm 1.59 |
| 8. | Gotkhindi | 685 | 33.94 \pm 2.05 |
| 9. | Kapuskhed | 496 | 32.51 \pm 2.35 |
| 10. | Khandobachi wadi | 328 | 43.51 \pm 3.26 |
| 11. | Manjarde | 1016 | 35.28 \pm 1.67 |
| 12. | Nandre | 713 | 29.74 \pm 1.84 |
| 13. | Ramanad nagar | 903 | 31.22 \pm 1.67 |
| 14. | Soni | 1187 | 37.11 \pm 1.59 |
| 15. | Tasgaon | 275 | 25.18 \pm 2.74 |
| 16. | Vasantnagar | 816 | 38.23 \pm 1.99 |
| 17. | Yellavi | 172 | 43.38 \pm 4.57 |
| 18. | Vita | 821 | 27.57 \pm 1.64 |
| 19. | Buffalo Farm, Bhilawadi station | 820 | 26.59 \pm 1.62 |
| Total AI | | 14392 | 34.12 \pm 2.59 |

between centres while between months the conception rate was significantly different at 5% level. The conception rate apart from seasonal load of AI work was also affected by farm conditions, efficiency of AI workers and feeding

Table 2: Monthwise conception rate

| Months | Total AI | Conception rate± S.E. |
|--------|----------|-----------------------|
| 1 | 1234 | 36.61± 1.57 |
| 2 | 1251 | 35.98± 1.54 |
| 3 | 3128 | 34.33± 1.46 |
| 4 | 1370 | 33.72± 1.42 |
| 5 | 1258 | 31.55± 1.44 |
| 6 | 1289 | 32.48± 1.44 |
| 7 | 1187 | 29.16± 1.40 |
| 8 | 1344 | 31.92± 1.39 |
| 9 | 1046 | 34.16± 1.66 |
| 10 | 1093 | 35.68± 1.66 |
| 11 | 1015 | 37.09± 1.76 |
| 12 | 0977 | 36.81± 1.79 |

Table 3: Analysis variance

| Source | d.f. | M.S.S. |
|----------|------|------------|
| Centre | 18 | 305.6171** |
| Year | 02 | 194.3531 |
| Month | 11 | 217.4880* |
| Residual | 105 | 80.8441 |

conditions. Bhosrekar *et al.*, (1994) reported highly significant difference in conception rate between centres. Rao and Rao (1969), Basu *et al.* (1978) reported highest conception rate in January and lowest in August. In the present study lowest conception rate was recorded in July while highest was in December and January. Madan (1988) quoting the work of Madan and Raina (1985) reported that conceptions were low between February to August, ranging between 30 to 44 % which corroborated with the present finding. Ismail (1988) also reported similar results in southern Iraq. Usmani *et al.* (1983) found both ovaries equally functional during winter (October to March) in terms of follicular development while in Summer (April to September) the ovaries were less functional. Kumar *et al.* (1986), Pasha *et al.* (1986) showed highest conception rate in winter and autumn while lowest in spring and summer. The

conception rate reported by Kumar *et al.* (1986) ranged from 24% in summer followed by 28.75% in spring, 39.47 in autumn and 45.91 in winter while respective figures reported by Pasha *et al.* (1986) were 20.31, 18.71, 30.27 and 36.65 per cent. The conception rate of the present study also show the same pattern though with slightly higher conception rates. The conception rates at buffalo farm were less as compared to rural AI centres, which was in accordance with Kadu *et al.* (1976). They explained this on the basis of retention of infection in the farm.

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