

Field Veterinarians' Perspectives of Infertility Among Cross-bred Cattle in Palakkad District

K. Vinodkumar

Introduction

Reproductive disorders mainly failure of conception, among crossbred cattle are on the increase recently and pose a serious problem to practising veterinarians. Eventhough various measures are being adopted to tackle infertility conditions, many valuable animals are still being disposed off due to their failure to conceive in time. Field oriented studies on the various aspects of infertility like it's nature, incidence and therapy, as commonly encountered in the State, are meagre. This article presents the results of a small scale survey conducted among selected field veterinarians of Palakkad district on the reproductive disorders of crossbred cattle, as perceived and treated by them.

Materials and Methods

Eleven Grama Panchayaths from Palakkad district were selected at random for the present study. A detailed questionnaire was prepared and distributed among all the practising veterinarians in the study area to gather relevant information on bovine infertility. Records available with the State Animal Husbandry Department Institutions in the study area were also scrutinized. The data obtained by questionnaire method and scrutiny of records were compiled and analyzed using standard statistical procedures.

Results

Since the Veterinarians from one Panchayath did not respond to the questionnaire, data from ten panchayaths only could be collected. The causes of infertility, as perceived by the field veterinarians are given in Table 1 in the order of importance. The treatment methods preferred by veterinarians for each type of infertility condition are given in Table 2.

Discussion

The 'non-return' rate of 77 per cent obtained on analysis of data is higher than the optimum of 66 per cent for artificial insemination. This high figure might be due to failure to identify many of the 'seconder's

or the animal being taken to a different insemination centre for the second time. Perusal of the data also revealed that the actual conception rate as recorded in the institutions is only 40 per cent of the animals brought for pregnancy diagnosis. The percentage of repeaters is found to increase by 10 - 15 per cent every year when the data of the last 3 years is compared (net shown in Table). This indicate a very high level of infertility among bovines which is on the rise.

All the field veterinarians are adopting rectal palpation coupled with the history narrated by the owner as the only diagnostic aid for infertility. Laboratory diagnostic methods like hormonal assay, culture and sensitivity studies and biopsy are avoided by all due to the prohibitive costs of these techniques.

Nutritional deficiency is the primary cause of bovine infertility as identified by majority of the Veterinarians. This means that proper nutritional management of crossbred cattle is still not being widely practised in Palakkad. Since identification of individual nutrient is impossible, most of the veterinarians are following a multifaceted approach, by providing all the essential nutrients together.

Non-specific infection of the genital tract are found by the veterinarians as the second important cause of infertility. There was not even a single case where specific infections of genital tract like IBR-IPV complex, brucellosis or trichomoniasis has been identified by veterinarians as a cause for infertility. It is noteworthy that 70 per cent of veterinarians identified genital tract infection as a sequel of natural service with scrub bulls. The method of treatment of genital tract infections are found to vary widely among field veterinarians. A detailed study on the effectiveness of each of these methods is necessary.

Repeat breeding due to hormonal disturbances and other uncertain causes are given only a minor importance by the field veterinarians. It is evident that field veterinarians need to pay particular attention

Table 1. Reasons for infertility among bovines as perceived by Veterinarians

Cause	Comparative importance and % of veterinarians who gave importance	Basis for diagnosis
A. Nutritional deficiency	I - 70% II - 0% III - 30% 2. 3.	1. Normal sized uterus with smooth ovaries and absence of heat symptoms Anovulatory heat Post partum anoestrus
B. Infections of genital	I - 20% II - 60% III - 20% 3. 4. 5. 6. 7.	1. Straining during AI 2. Cloudy vaginal discharge with or without flakes of pus Repeat breeding with no other symptoms Metoestral bleeding Prolonged heat symptoms Enlarged cervix Irregular oestrus cycle
C. Hormonal infertility	I - 10% II - 30% III - 20%	1. Irregular oestrus 2. Prolonged heat symptoms 3. Failure to conceive
D. Repeat breeding without any apparent cause	I - 0% II - 10% III - 10%	1. Repeat breeding

I, II., III - Degree of importance. The figure in brackets is the percentage of veterinarians who attributed respective degrees of importance to each cause.

Table 2. Treatments adopted by field veterinarians for infertility

Diagnosis	Treatment preferred
A. Deficiency of nutrients	a. Vit. A, phosphorus, protein rich diet b. Deworming and protein rich diet c. Advise concentrates 1 1/2 kg/day d. Mineral mixtures e. Herbal preparations
B. Infections of genital tract	a. Lugols I ₂ I/U with or without post AI antibiotic in the next cycle b. Lugol's I ₂ I/U + 3 days antibiotic c. Post AI antibiotic + Uterovet tab. d. Post AI Ab + metronidazole + Uterovet e. Pre and Post AI antibiotic. (Antibiotics preferred I Streptopenicillin II Tetracyclins III Gentamycin)
C. Hormonal infertility	a. Iliren 3.5 ml I/V b. Tab. Clomiphine citrate for 3-5 days (500 mg)
D. Repeat breeding without any visible cause	a. Antibiotic + Vitamin +Mineral mixture

to this area in future. The expenses for hormonal therapy is discouraging many from its practice.

Conclusion

The survey is intended only as a pointer to the problem of bovine infertility as it exists

in the field. A more detailed study involving a wider sample is necessary to get a comprehensive picture. Still it can safely be assumed that bovine infertility is emerging as the most serious problem faced by the farmers of the state.

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Thus the heat shock phenomenon is of great importance to food, and that altering cooking procedures to raise temperatures as quickly as possible may be needed to prevent an adaptive response from occurring.

The ramification of global response in food processing and preparation are enormous. The pre-processing temperature treatment of a product containing pathogens is nearly equally as important as the process treatment itself. If raw milk were permitted to rise slowly in temperature to 37°C, 42°C, 45°C or higher and then pasteurised, the pathogen could have acquired a presently unpredictable degree of heat resistance.

Heat shock has also been linked to virulence in *Shigella* species. Temperature regulated virulence attributes have been cited in pathogens as *Yersinia enterocolitica* and *E.coli*.

It has been shown that attachment to a solid surface afforded certain bacteria an increased resistance to chlorine. Other factors like nutrient limitation (stringent response), also did so, and along with the attachment, the resultant resistance to chlorine was multiplied. What if the attachment per se was sufficient to induce a global adaptive response similar to heat shock? Would this not call for a reassessment of sanitizer effectiveness on foods and food contact

surfaces?

A basic premise of microbiological analysis of food is detection /counting of all organisms present and viable. This may not always be the case. Some bacteria enter a state of non- culturability, where in they cannot be cultured on standard growth media, yet by certain criteria are not dead. A non-culturable state has been reported for *V.Cholerae*, *E.coli*, *Klebsiella* and *C.jejuni*

Food microbiology and food technology are rapidly changing areas of study that must be kept abreast of advances in other disciplines. For example, understanding the mechanics of heat shock response at molecular level and viewing the phenomenon from the microbes perspective enable experiments meaningful to the food scientist to be designed around any food process or preparation method. This should certainly facilitate designing Hazard Analysis Critical Control Point (HACCP) procedures, even at home cooking level.

Food microbiologists/technologists must stay current in many disciplines to function optimally in their profession. Communication is the key and communication aimed at bridging disciplines should be encouraged by professional societies as well as universities.

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Buffalo rearing has to be more popularised. Rearing of small animals like goats, pigs and rabbits on commercial basis to be promoted. For hygienic meat production modern slaughter houses should be established. Meat inspection coupled with enforcement of environmental standards should be followed. Promoting of broiler and back yard poultry sector. More attention to care of pet animals and birds. For disseminating proper Animal husbandry technologies Extension and publication sectors should be further strengthened. Livestock product marketing have to be strengthened with the help of co-operatives.

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