

INDIGENOUS FEEDING PRACTICES TO IMPROVE REPRODUCTION IN BUFFALOES

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ABSTRACT

Buffalo contributes significantly to total milk production in India. Health and reproduction in cattle and buffalo are prerequisite for better milk production. Farmers in cuddalore district are feeding their buffaloes with certain plants and medicinal herbs to enhance its reproductive activity. Data regarding this was collected by participatory rural appraisal technique. Traditional feeding practices were followed to treat conditions such as anaestrous, to attain puberty, to improve conception and to avoid retained placenta in buffaloes. Cicer arietinum (Chick pea), Murraya koenigii spreng (curry leaves), aloe vera, musa x paradisiaca (banana) leaves and ocimum sanctum (tulsi) leaves are commonly supplemented to improve reproductive status and to some extent was successful. Although extracts from these plants are widely used in herbal medicines, further studies on isolation of each bio active principles, its dose, mode of action, adverse reactions etc., are essential to make use of it in ethano veterinary practices in a large scale.

Keywords: - Buffalo, Reproduction, Indigenous practices

1. INTRODUCTION

Buffalo contributes more than 55% of total milk production in India. In spite of its contribution, the reproductive performance is poor than cattle. Health and reproduction is vital for increasing its production. In India, culling of dairy animals due to infertility is 18-40%. Ideal calving interval in buffaloes should be 15 months. Conditions like silent heat, repeat breeding, early embryonic mortality, abortion, prolapse, dystocia and retained placenta will have a negative impact on reproduction and production. Some of the farmers are still following traditional age old feeding practices since time immemorial as first line of treatment for various reproductive ailments in cuddalore district. Documentation of such traditional practices are important to check its scientific rationality and for its future application in ethano veterinary practices ^[1].

2. MATERIALS AND METHODS

Cuddalore district is located at 11.7480° N, 79.7714° E. It experiences tropical wet and dry climate with heavy rainfall in every northeast monsoon. Major activity is agriculture. Data was collected from farmers maintaining buffaloes by participatory rural appraisal technique ^[2] on traditional feeding practices to improve reproductive activity in buffaloes such as anoestrus, impaired conception, to avoid retained placenta etc.,. The documented practices were scientifically validated by discussion with experts in animal nutrition, livestock production and management, veterinary obstetrics and gynaecology and practicing veterinarian in cuddalore district ^[3].

3. RESULTS AND DISCUSSION

The dairy farmers perception and scientific rationale are presented below according to the conditions for which traditional feeding practices were followed.

3.1. To treat anestrus and to regulate reproductive cycle :

Indigenous practice1: Feeding of half kg of chick pea (*Cicer arietinum*) on daily basis to heifers and cow in anestrus.

Farmers perception: It brings heifer to maturity and oestrus in non cycling animals.

Scientific rationale: Chick pea is a rich source of energy and protein. It is high in nutrients such as folate, iron, phosphorous, thiamin, vitamin B6, magnesium and zinc. It aids in the development of reproductive organs and hormonal synthesis.

Indigenous practice 2: Supplementation of curry leaves (*Murraya koenigii spreng*) and aloe vera (*Indian aloe*)

Farmers perception: It aids in puberty and cyclicity

Scientific rationale: *Murraya koenigii spreng* contains various bio active chemicals such as murrayacine, mahanimbine, murrayacine and mahanine that has anti microbial properties. Koenine, koenigine, mukonicine, mukoeic acid and mukonine has antioxidant properties. Curryanine and murrayanol has antiinflammatory actions. These bioactive agents may have a role in reproductive system which needs to be confirmed based on further studies ^[4].

Aloe vera contains vitamins, enzymes, minerals, sugars, lignin, saponins, salicylic acids, amino acids and 75 potentially active constituents. It contains six antiseptic agents: Lupeol, salicylic acid, urea nitrogen, cinnamonic acid, phenols and sulfur. They all have inhibitory action on fungi, bacteria and viruses. Aloin has antiseptic, antibacterial, antioxidant and antiinflammatory properties. The antiseptic property and antiinflammatory property may aid in cyclicity by removal of uterine infection in animals ^[5].

3.2. To improve conception

Indigenous practice: Feeding of *Musa x paradisiaca* (banana) leaves once or twice after artificial insemination or natural service

Farmers perception: Aids in successful conception

Scientific rationale: Banana leaves are rich in polyphenols such as epigallocatechin gallate that acts as an antioxidant ^[6].

3.3. To avoid retained placenta

Indigenous practice 1: Feeding of *Ocimum sanctum* (Tulsi) leaves twice a day

Farmers perception: To clean the uterus

Scientific rationale: Modern research has revealed that tulsi has anti-bacterial, anti-viral and anti-fungal, analgesic and antispasmodic activity. Tulsi protects against toxic chemical-induced injury by increasing the body's levels of anti-oxidant molecules such as glutathione and enhancing the activity of anti-oxidant enzymes such as superoxide dismutase and catalase, which protect cellular organelles and membranes by mopping up damaging free radicals. Due to these properties it prevents infection and aids in expulsion of placenta and this action may be due to various alkaloids, phenolic compounds that need to be studied further ^[7].

Indigenous practice 2: Feeding of mango leaves twice a day

Farmers perception: To expel placenta

Scientific rationale: Anti inflammatory and antimicrobial activity due to flavonol glycosides and polyphenols may aid in detachment of placenta which needs to be validated further ^[7].

4. CONCLUSION

Reproductive management of buffaloes influence directly on its production and profitability of a dairy farm. Traditional feeding practices resulted in improved breeding activity in buffaloes. Although some of the alkaloids were isolated and tested for its efficacy, many such bioactive compounds need to be isolated and its mode of action and dose should be studied further to make use of this plants with medicinal values in ethano veterinary practices in a large scale.

5. REFERENCES

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