Reproductive Health Management For Better Conception Rate

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Introduction:

Diseases caused due to bacteria viruses and other ailments affecting reproductive tract of the livestock lead to fetal conditions like abortions, still birth, sterility, infertility, foetal calf mortality, lack of lactation, increased inter-calving period lead to economic losses to the livestock owners and occupational hazards to human beings. These diseases also cause decreased conception rate and adversely affect the heath of the livestock.

Transmission of Disease

1) Penetration of organism through skin, mucus membrane, conjunctiva etc.
2) Milk – consumption of un-pasteurized milk
3) Heavily soiled tail by discharges at the time of Dystokia, Retained placenta, aborted fetus will cause occupational hazards to human beings, farmers, Veterinarian's, butchers etc.
4) Through artificial insemination and natural service by infected breeding bulls.

Causative factors:

A. Abortions:

1) Bacterial – (a)Cattle: Brucella abortus (Bang's Disease - 1897)

- Contagious abortion in cattle at 5th month onwards (Late), Still births.
- It is also called as Gastric Intermittent Fever.

Vibrio foetus and Compylobacter foetus abortions in early pregnancy 2 – 3 months.

Trichomonas foetus late pregnancy or still birth.

Leptospira pomona and L. hardijo- after 6 months of pregnancy

Lesteria monocytogens after 3 months of pregnancy.

Mycobacterium tuberculosis and Para tuberculosis

Salmonella, Corynebacterium pyogenus, streptococci, Styphalococci, Actinobacillosis

2) Viral - Epizootic bovine abortions, Infectious Bovine Rhinotracheitis, FMD,

3) Protozoan - Toxoplasmosis New Zealand type-2 – abortion in late pregnancy or still birth

4) Mycotic- abortions in cattle and sheep: **Aspergillous mucor, Absidia, Rhizopes –**

(b) Sheep and Goat: Brucella melitensis - abortions (Malta fever in Human)

Salmonella abortus ovis abortions in last 6 weeks in sheep

(c) Sows: Brucella suis abortions, sterility, infertility in

(d) Equine: Bacterial - Salmonella abortus equi, Streptococcus zoo epidemicus, Klebisella genitalia, Shigellla equirutis, E. Coli.

Viral - Equine viral abortions, equine viral pneumonitis

B) Post Parturient Diseases/ Metabolic Disorders:

1. Parturient paresis / Milk fever/ Hypocalcaemia - Drainage of calcium and phosphorous and
2. insufficient intake of minerals lead to diseases
3. Hypomagnesaemia/ Hypomagnesaemic tetany/ Grass tetany/ Grass stagger / Lactation tetany
4. Eclampsia in bitches, sow, mare
5. Post parturient haemoglobinuria – due to deficiency of P & Ca
6. Monday morning sickness in horses due to reduced energy level and exhaustion.

C) Other causative factors:

6) Poisons: Administration/ingestion of poison of plant originErgot will act as a ecbolic lead to violent uterine contractions and abortions.

i. Chlorinated naphthalene will act as poison for separation of placenta and foetus leading to
ii. abortion.

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iii. Strong purgative: - Inj. Charbacol cause increased activity of digestive tract indirectly
iv. increasing the moment of reproductive tract leading to expulsion of fetus.
v. Nitrates of plant origin.
vi. Hormonal imbalance: Higher levels of oestrogen in the blood leads to abortion.
vii. Malnourish mother during pregnancy; Deficiency of vitamins, Macro and micro
viii. minerals - Ca, P, Zn, Fe, Cu, Co.
ix. Vaccination against bacterial and viral diseases during last term of pregnancy will
x. cause abortions eg. HS, BQ, Anthrax, RP, PPR etc.
xi. Severe and acute septicaemic diseases of mother like Leptospirosis, brucellosis,
xii. Trypanosomiasis equiperidum (Dourine), viral diarrhea, hog cholera, erysipelas,
xiii. enterotoxaemia cause severe and acute septicaemic conditions and lead to abortions.
xiv. Hereditary predisposition: Isoimmunization of pregnancy due to unknown hereditary
xv. mechanism.
xvi. Tortion of umbilical cord
xvii. Traumatic injury to placenta
xviii. Neoplasms of uterus – adenosarcoma, lymphosarcoma of uterus, leomyoma, uterine fibrosis
xix. mostly occurs in bitches
xx. Threatened abortions: - fighting between animals due to overcrowding in byres.

A. Horn injury in Khillar of Pandharpuri buffaloes is common due to pointed and long horns
B. Intentional beating with sticks with cruelty.
C. Slippery flooring in fatty and obese animals slip fall fracture of hip bone and abortion
D. Mischief's with animals – like phooka, Dum-Dev
E. Mechanical injury during pregnancy – inflammation of reproductive tract- vaginitis , cervititis, vulvitis, mettritis, endometritis etc.

Clinical Symptoms:

1. In females: Abortion, sterility, infertility, still birth, metritis, endometritis, neonatal deaths, dystocia, retained placenta
2. In Males: Bursitis, Poll-Evil, Epididymitis, Orchitis, Hygroma, Synovitis in breeding bulls and stallion

Diagnosis:

1. Compliment fixation text
2. Quick test/ Plate Test with coloured antigen
3. Standard Tube Agglutination Test (STAT)
4. Brucella abortus Bang Ring Test
5. Milk Ring Test (MRT)
6. Haemagglutination Test / Haemagglutination Inhibition Test (HA/HI)
7. ELISA Test

Preventive Measures:-

1. Isolation and disposed off infected animals by culling. In foreign country there **is policy of "Test and slaughter"** but in India due to cow slaughter ban the positive animals are disposed off by following suitable scientific procedure.
2. On an organized farm the animals should be regularly screened for brucellosis at every 6 month interval.
3. Proper disposal of uterine discharges, placenta, bedding material by using disinfectants like phenol, cresol, Lysol, formalin, sodium hydroxide, carbolic acid, washing soda and Gamma eradication, by burning or burring.
4. When there is incidence of heavy abortion (abortion storm), more than 8-10 per cent all female calves at 4-6 month of age should be vaccinated with Cotton Strain- 19 (Calf hood vaccine) with dose rate of 3-5 cc in a herd. Males should never be vaccinated. KB-51 and K-45/20 are the vaccines available in the market. **The vaccines are live attenuated hence there are chances for infection to human beings if due precautions are not taken at the time of vaccination.**
5. Overcrowding in the byre should be avoided, sanitary and hygienic measures should be taken at a regular interval.
6. Cow should be provided with balanced diet with supplementation of essential Vitamins, Minerals and nutrients to avoid occurrence of metabolic diseases and post parturient complications
7. Regular metabolic profile testing at four month interval should be undertaken.
8. Cows and heifers should be given high protein diet for proper growth and weight gain to have disease resistance and to avoid reproductive health problem

9. To avoid occupational hazards to human being, livestock owners and Veterinarians, the pregnant animal's should be separated in calving boxes 3 to 4 days before the date parturition and hand gloves, goggles to the eyes and due precaution must be undertaken while handling the cases of dystokia retained placenta, vaccination etc.
10. Strictly avoid the consumption of raw milk.
11. Transmission through arthropod vectors, hence their population should be restricted to minimum.

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"Tulsi is widely used in traditional medicines for curing various diseases since vedic times. The phenolics present in the Tulsi leaf appeared to be the main contributory factors for extending the oxidative stability of dairy products. This correspond to a markatable shelf life of the products. Tulsi leaves are also used for flavouring stews, sauces, sausages, dressings, salads and thick soup."

Abstract from Potential Application of Holy Basil (Tulsi) in Dairy Products by C.V. Satyanarayana and D.C. Sen

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"Nutritional interventions to alter the milk composition for specific health benefits are gaining importance. Alterations in the fat, protein, amino acid and fatty acid contents of the milk have been achieved through nutritional modifications. There is need to reduce the lactose content and b-lactoglobulin content of milk through feeding interventions."

Abstract from Feeding Manipulations of Dairy Animals for Better Human Health: An Update by R.K. Sharma, Keshab Barman, Ankur Rastogi, Ravindra Kumar and Vinod Kumar

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"To ensure that buffalo production should be economically sound and socially satisfying, there is a need for improvement of production, improvement in methods of handling milk at the source of production and improvement in economic returns from disposal of milk, disposal of live animals for breeding, draught or meat."

Abstract from Effects of Probiotics on Milk Productivity of Cattle by R.K. Mehla, R. Chandra, B. Singh and P.K. Madke

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