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SIGNIFICANCE OF MANAGEMENT PRACTICES OF DAIRY ANIMALS DURING SERVICE PERIOD

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Service period is defined as the period between calving to successful conception. It takes 30 days for the involution of the uterus and 45 days for the resumption of ovarian cyclicity. 60 days is considered as the voluntary waiting period. Voluntary waiting period is the period where we wait voluntarily for AI to animals and after 60 days we can start breeding of animals. But 85 days is considered optimum for breeding and animals conceive successfully. This is service period and varies from animal to animal and breed to breed. Service period of different breeds are sahiwal (127.53), gir (152.08), Tharparker (156.11), Murrah (156.33), Karan Fries (148.89), Karan Swiss (150.12), Deoni (117), Jersey cross (108) (Annual report NDRI, 2008).

Optimum service period is important as it helps the animal to recover from the stress of calving, reproductive organs back to normal and to maintain the calving interval. Service period should be optimum so that the animal should calve once in a year. If it is too short then Animal will become weakand hence, persistency of milk production decreased. If it is too long then life time production will be reduced.There are many factors which influence the service period of dairy animals which we are going to discuss and different management practices during service period.

Major Problems Contributing To Change in the Service Period

Immediately after calving in 90% of cases animal is very susceptible to uterine contamination which is quite normal and unavoidable. This occurs due to uncoupling of growth hormone and insulin growth factor. At this time due to decrease in growth hormone and insulin animal may fall in negative energy balance. Within 7 days of calving in approx. 40% of cases metritis may occur and this occurs mainly in heifers, animals suffered from dystocia, still birth, twins and retention of foetal membrane. And if metritis is not treated then

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it may complicate the case leading to endometritis, severe loss in body condition score, culling and failure to resume the cyclicity. If animals are properly monitored during this periodfor the above cases then animals may return to positive energy balance in 45 days and breeding may start from 60 days after calving.

Other Managemental Problems Leading To Reduced Fertility & Delay in Pregnancy

If the animals are not coming in estrous then the managemental factors that affects this are inability of farmers to detect heat in animals in time, energy deficient diet leading to negative energy balance which reduces fertility and delay in pregnancy. Other factors are uterine infections, Infected semen, unfavourabel uterine environment due to hormonal deficiencies lead to death of embryo and ultimately increase in service period.

Factors Affecting Service Period and Their Management

1. Nutritional Factors

At peripartum period animals are very susceptible for negative energy balance as there is transition of animal from non lactating pregnant to lactating non pregnant stage. Animal have to sustain milk production and also have to feed its calf. In liver it may lead to decrease in insulin like growth factor, in adipose tissue there will be decrease in leptin hormone, in blood there will be Increase in NEFA, BHBA and Urea concentration. So this negative energy may lead to increased risk of metabolic diseases, decreased immune response and reduction in subsequent fertility by altering the follicular development. And hence lead to increase in service period.

Nutritional management

This negative energy after parturition can be reduced by feeding the animal with higher energy diets, maximizing dry matter intake, adjusting crude & bypass protein level, providing adequate fiber to prevent off feed problems or chronic intake fluctuations, checking macro mineral (Ca, P, Mg, K) levels & water availability. Bayril and coworkers, 2015 have found that supplementation of vitamin E and selenium during dry period have significantly reduced the service period

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Body condition score

Another important factor which affect the service period is the body condition score of animal. Wathes and coworkers, 2007 have found that optimum body condition score for primiparous animals should be 3 whereas crowe, 2008 have found for pleuriparous animal should be between 2.75-3. If BCS is low then animal may take longer to conceive and if it is high then there will be reduced dry matter intake.

2. Physiopathological Factors

Physiopathological factors affecting service period are Clinical mastitis, Lameness, Endometritis, dystocia, RFM, milk fever and caesarean. Dobson and coworkers, 2008 have found that in mastitic and lame cows, a delay in the resumption of cyclicity could add an extra 7 & 17 days, respectively to the calving to conception interval. they found that maximum increase in service period was due to caesarean among the above mentioned diseases.

Management

Various causes that may lead to postpartum diseases are Exposure to bacterial pathogens, Mineral and vitamin deficiencies, Negative energy balance, Immunosuppression. So these factors must be reduced by proper treatment of diseases and preventing the occurrence of diseases by supplementing extra concentrate during dry period and antioxidant.

3. Managemental Factors

Managemental factors that may lead to increase in service period are Infections of postpartum uterus, Deficiency in correct expression of heat signs by animals, Inability of farmers to detect heat in animals in time, Improper technique of AI (Lack of following standard Operating Procedures).

This could be improve by using teaser bull for detection of heat, following am-pm rule, using good quality semen and doing AI technically right.

4. Environmental Factors

Environmental factors that may lead to increase in service period are Air temperature, Relative humidity, solar radiations, Atmospheric pressure and Windspeed.

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Heat stress

Heat stress may lead to reduced appetite & feed intake, negative energy balance, , increased reactive oxygen species, compromised follicular development & mechanism of ovulation, altered insulin, IGF1, T3, T4. Glucose, poor estrous expression, anestrous & prolonged service period. Yadao and co-workers, 2005 have found that there is increase in service period in hot and humid climate as compare to winter and summer dry season.

Heat stress management

This can be done by feedinghigh quality forages & conc., changing feeding times that is feeding during cooler parts that is at night, providing proper ventilation by inreasing air flow and avoid overcrowding and installation of fans & sprinklers

5. Genetic Factors

Since service period is reproductive trait and hence it is low heritable and is mainly controlled by non-genetic factors or environment effects however Appropriate use of genetics can be done by Selective breeding for lameness and mastitis as these may lead to alteration in successful conception of animals.

Conclusion

So in order to get the animal to be conceived at proper time after parturition we can Prevent production diseases, Minimize the negative energy balance by adopting balanced feeding, Keep the animals in stress free environment, Resolve uterine infections by taking timely help of qualified veterinary doctors, Get the services of well-trained AI technicians and Use disease free dose of semen for AI.

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