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BRUCELOSIS EN BOVINOS Y BUBALINOS EN BRASIL: UNA BREVE REVISIÓN

BRUCELLOSIS IN CATTLE AND BUFFALOES IN BRAZIL: A BRIEF REVIEW

Presentation: Poster

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INTRODUCTION

Brucellosis has been defined as a zoonotic disease affecting a myriad of species like bovine and buffalo's herd. This disease has broadly been reported in many regions from Brazil which may give rises economic losses because of reproductive problems caused to the home farm animals, including the necrosis process within testicles resulting upon male sterility and birth of weak calf and retention of the fetal membrane upon female ruminants (SOUSA et al., 2015, 2017). Because abortion personifies the key symptom, brucellosis is usually referred to as Infectious Abortion, Contagious Abortion, or Bang Disease; each abortion occurred must be considered as brucellosis. The causer of brucellosis on cattle and buffaloes is a gram-negative coco-bacilli of the genus *Brucella* named *Brucella abortus* of which DNA may be found for about second to last pregnancy month within both maternal tissue and fetal fluid. Epidemiologically, the main infection pathway in buffaloes is the uterine transmission (SOUSA et al., 2015; LEITE and BASTIANETTO, 2009; SILVEIRA, 2006) but the transmissions encompass contact with bacteria including oral, conjunctive, and dermal pathways, natural mount, and artificial insemination for both cattle and buffaloes.

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There are no therapeutical treatments for brucellosis which may be diagnosed by either direct (PCR, bacterium isolation, and so forth) or indirect (serology) exam. Once diagnosed, the appropriate control commonly used is the elimination of reagent animals whereas may involve modulation in animal transit as well. The present paper categorizes and describes common diagnostics, transmission pathways, and control methods in cattle and buffaloes within signs of brucellosis. Moreover, it was hypothesized the age may relate with an immunological response with the subsequent incidence of such disease.

THEORETICAL FOUNDATION

Efficient improved for reproductive management play an important point in animal production, which results in the individual productivity of the animals and all herd (DAYANE et al., 2015). Therefore, the veterinarian is aware of the infectious diseases that affect the reproduction of bovine and buffalo's herd, especially brucellosis. In cattle, an assessment of reproductive handle is required to identify critical points essential to animal production, given that by simple management is able to enhance the productivity. However, these studies are more deepen in beef cattle, and evaluations of reproductive assessment are shown to be necessary for dairy cattle (TORRES-JÚNIOR et al., 2009).

METHODOLOGY

It was performed an analysis with researches finding approaching results for brucellosis on bovine and buffaloes. It was consulted numerous platforms, including Google Scholar, Elsevier, ResearchGate, and SciELO. The key-words used for researches were "brucellosis + cattle", "brucellosis + buffaloes", "Brucellosis on Brazil" in sequence. Some of those words were substituted by its synonymous and its and Portuguese correspondent.

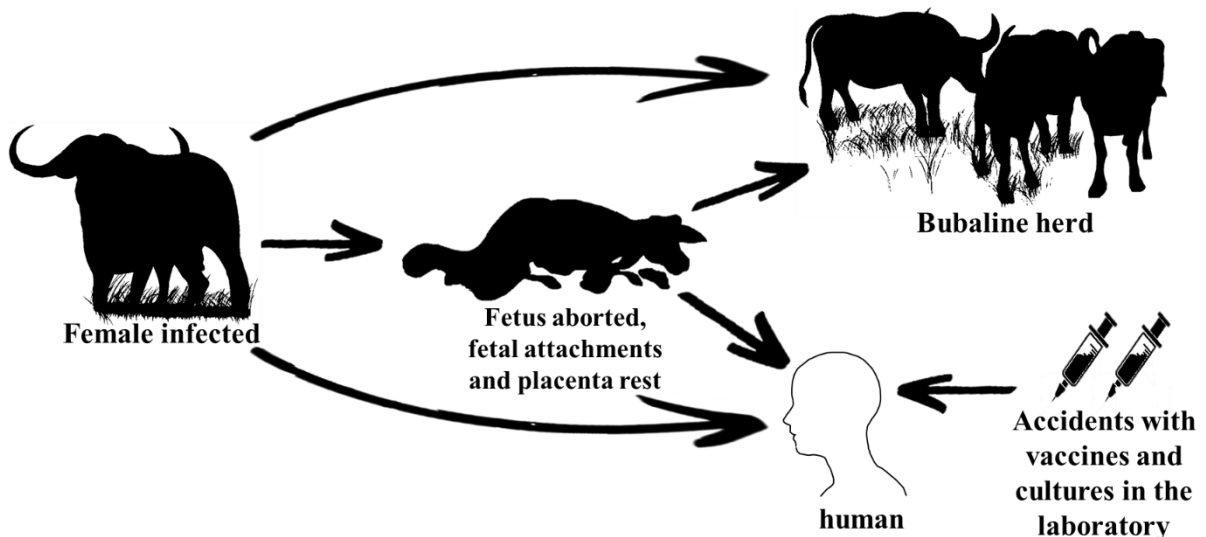
RESULTS AND DISCUSSION

In line with PNCEBT (National Program of Control and Eradication of Brucellosis and Tuberculosis Animal), the official serologic tests accept nowadays are both the milk ring test (TAL) and the Buffered Acidified Antigen (AAT) test as a screening test. Combining screening and confirmatory tests, it is possible to obtain diagnostic with specificity increased. Once TAL determined as positive, it must be investigated by serologic tests whereas once positive for AAT, it must be subject to either 2- Mercaptoethanol (2ME) or Complement Fixation (FC) or both as a confirmatory test (SOUSA et al., 2015).

B. abortus may be transmitted laterally across the contact with material infected with

the bacteria or vertically by the spill of milk (CALDOW and GRAY, 2004; SOUSA et al., 2015). The transmission pathways for *B. abortus* among buffaloes may be viewed at Figure 01. The introduction of females infected on the herd, the animal proximity, and the manure and urine of calf fed with milk from buffalo infected are some transmission pathways that occurred for contact with buffalo infected. The contact for oral, conjunctive, and dermal pathways with water and pasture contaminated with delivery material containing *B. abortus* plus dogs, vultures, rats, and flies as epidemiological mediators may be another manner to transmit brucellosis. Respect the transmission for humans, the useless of waterproof gloves to manipulate both fetus and fetal attachments, the consumption of lacteal products not pasteurized, and laboratory accidents may be some pathways more common.

Figure 01: transmission pathways for *B. abortus* among buffalo's herd including the transmission for humans.



Source: own source (2020).

The animal must be introduced only from both other herds and free fields given that by brucellosis is usually introduced by animals infected while animals from other sources must be isolated and assayed prior to be introduced to the herd.

In line with PNCEBT, B19 is the official vaccine established for bovine and buffalo's herd and bounden in Brazil. The vaccination of females with 3 to 8 months and the elimination of positive animals is the best strategy to control the disease (SOUSA et al. 2015). The delimitation of females age vaccination occurs given that by in those vaccinated post this period it occurs interference on serology, mistaking the diagnostic. On bovine herd, the prevention may be obtained by vaccination of production cattle in order to increase immunity and decrease the danger of abortion with subsequent elimination of animals contaminated

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(SOUSA et al., 2015; LEITE and BASTIANETTO, 2009). Due to the interference on serology, the females infected at an appropriate age must be tested only post 24 months. The PNCEBT allow sometimes the vaccine RB51 on adult females. This does not interfere with serology and may be used for females with any age.

CONCLUSIONS

Brucellosis has been the most reproductive disease on bovine and buffalo's herd in Brazil. The diagnostic commonly includes the screening test with subsequent serology. The transmission encompasses the consumer of products from animals infected while the age for vaccination plays a prominent role in the immunity of animals and the prevention across vaccination, as it was hypothesized. It is fundamental to the adoption of practices decreasing the danger of contamination, including mainly individual protection throughout the manipulation of a delivery material in conjugation with care for alimentation (e. g., pasteurization of lacteal foods).

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