Complex Sadness (piroplasmosis) in Buffaloes

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There is a growing trend to find the best production rates in production animals, using the cross-breeding, nutritional supplementation, medication use, among other options. However, a trend that has started to gain importance worldwide is raising a non-traditional specie, with great potential for the production of milk, for meat and as a work animal, a species whose rusticity allows adapt easily to adverse environmental conditions, very common in the tropics, even where cattle fails. This species is the domestic buffalo, water buffalo or Bubalus bubalis (Ramirez et al, 2000).

Buffaloes have a digestive system capable to use efficiently fibrous feeds, obtaining energy to survive on low quality pastures with low levels of protein and energy (Ranjhan, 1992, Angulo, 2005). Studies have shown that due to certain characteristics, buffaloes are more efficient in terms of productivity concerns (Fundora et al, 2001; Fundora et al, 2003; Shultzet al, 1997; Bartocci et al 1997, Cruz et al 2001; Franzolin 1994,Franzolin, 2001).

Given the genetics of the buffalo, the ideal environment for their upbringing is a place with relatively high temperatures in the presence of shadows and a pool, lake or pond nearby for animals to cool and dissipate heat (Galindo, 1994). Generally, because of the type mentioned requirements, buffaloes are raised in tropical weather; areas overlapping with certain parasites is imminent. Among the most common ectoparasites in compatible climates as the described ones we mention ticks of different genera. Ticks are of epidemiological importance as vectors of important diseases to domestic animals (including buffalo), such as sadness complex or piroplasmosis, caused by *Anaplasma marginale*, *Babesia bovis* and *Babesia bigemina* (Jacobo, 2010).

In a study conducted in Argentina, 125 animals were sampled, resulting in that all animals were negative to clinical examination in the search of complex sadness, while 10 were shown to be infected, as were positive on the smear. As a criterion for positivity was taken the same as in cattle (animals with 1% of infected erythrocytes to Anaplasma spp., and 1% for Babesia bigemina and 0.2% for B. bovis). Three of the positive animals had infections superiors than 1%, however they didn't showed clinical signs, this is different than in cattle, proving that buffaloes are more resistant to this type of infection (Jacobo et al, 2006).

In a study conducted in 2008 (Gomes et al) it was determined that the buffalo are able to develop a specific humoral immune response to *Anaplasma marginale*, after observing that the levels of antibodies against the agent were high during the first 24 hours after taking colostrum, considering the buffalo as carriers. In another study in Pakistan (Khan et al, 2004) showed that 80% of buffaloes studied were infected with *Anaplasma marginale*.

Thus, considering the growing trend of raising buffalo, and taking into account the sadness complex behavior, we must realize that we are facing a potential health problem, since the disease is transmitted mechanically by insects such as flies, mosquitoes, flies, among others, and we could end up having carriers buffaloes with susceptible animals without noticing (Jacobo, 2005).

Faced with this problem we should consider the alternative of a preventive chemoprophylaxis. Thus, in 1997 (J. Zhou et al) performed a study which showed that treatment with diaminazine (3 - 5mg/Kg) and Imidocarb (1.2 - 3 mg / kg) as well as a right use of external antiparasitic, for a period of two years, was able to reduce

the presence of agents of piroplasmosis on cattle and buffaloes in the village of Zuiyun in China.

We recommend as well, conducting further studies to determine the presence of these blood parasites in areas where the buffalo production is increasing, and elucidate the role that may have a preventive chemoprophylaxis as a tool to control sadness complex, both buffaloes as in other species.

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