

Comunicación corta

PRIMER REPORTE DE BOVINOS SEROREACTORES AL VIRUS LENGUA AZUL EN CUBA

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RESUMEN: La Lengua Azul es una enfermedad viral que afecta a los rumiantes y está incluida en la lista de enfermedades graves de la Organización Mundial de Salud Animal (OIE). Cuba se encuentra en la zona de circulación endémica del Virus Lengua Azul (VLA), pero hasta el momento no se había investigado la presencia de anticuerpos a este agente. El objetivo de este trabajo fue realizar un estudio serológico a varios rebaños bovinos adultos seleccionados por su potencialidad para el comercio. Un total de 1100 muestras de suero de bovinos sanos, procedentes de Pinar del Río, La Habana, Matanzas, Villa Clara, Ciego de Ávila, Camagüey, Las Tunas y Guantánamo fueron analizadas a través de un ELISA de competencia (Pourquier, Francia). El 99.7 % de las muestras estudiadas resultaron positivas a anticuerpos grupoespecíficos contra el VLA. Los resultados obtenidos coinciden con reportes anteriores para la región del Caribe y Centroamérica, donde se refiere una alta prevalencia de anticuerpos a este virus.

(Palabras clave: Virus lengua azul, anticuerpos, bovinos)

FIRST REPORT OF BOVINE SEROREACTORS TO BLUETONGUE VIRUS IN CUBA

ABSTRACT: Bluetongue (BT) is a viral disease affecting domestic and wild ruminant included in the OIE diseases list. Cuba is located in the area of endemic virus circulation, but the presence of antibodies had not been searched. The objective of the present work was to carry out a serological study to several bovine herds selected by its potentiality for trading. A total of 1100 serum samples from healthy bovines from the Cuban provinces, Pinar del Río, La Habana, Matanzas, Villa Clara, Ciego de Ávila, Camagüey, Las Tunas and Guantánamo were analyzed by a competition ELISA. The 99.7 % was positive. The obtained results agree with previous reports in the Caribbean and Central America Regions, where a high prevalence of antibodies against this virus was found.

(Key words: bluetongue virus, antibodies, bovines)

Bluetongue (BT) is an infectious, not contagious viral disease. Its transmission is associated with the presence of various species of mosquitoes from the genus *Culicoides* (1), whose circulation areas are bounded between 53° north latitude and 35 degrees south latitude, according to the Animal Health Code of the World Organization for Animal Health (OIE) (2).

The range of hosts susceptible to bluetongue virus

(BTV) is broad, including all ruminants. The clinical manifestations of the disease vary between species, from unapparent in the vast majority of infected animals to fatal in a proportion of sheep, deer and other wild ruminants (1).

Due to its pathogenicity and transmission power, LA is part of the list of notifiable diseases to the OIE (1), so the appearance of this disease in a country

poses serious restrictions on trade in live animals, semen and ova, besides being very expensive because the costs of prevention, surveillance and eradication.

During the decade of the 80th epidemiological and entomological studies were conducted in several countries in Central America and the Caribbean to determine the prevalence and incidence of BTV and to identify *Culicoides* species involved in the transmission of the virus. These studies led to the isolation of several serotypes from animals without clinical signs and also from certain species of vector and proving a high prevalence of antibodies to BTV in the region (3.4).

In Cuba so far no one has studied the presence of antibodies against this agent due to the absence of clinical signs of the disease, although the country is located within an area of endemic virus circulation (2.5).

Due to the demands of trade in live animals and the interest in knowing about the movement of group-specific antibodies to BTV in Cuba, the aim of this work has been to perform a serological survey to several adult cattle herds selected by their potential for trade.

A total of 1100 serum samples obtained from adult cattle from herds located in Pinar del Rio, La Habana, Matanzas, Villa Clara, Ciego de Avila, Camaguey, Las Tunas and Guantanamo were analyzed, for the detection of antibodies against the protein VP7 of BTV through a competitive ELISA (Pourquier, France).

In 1097 samples, values under 35% of the S / N% were obtained (S is the OD of the sample and N the negative control OD). This corresponds to positive values, according to the interpretation criteria of the commercial kit, so that 99.7% of the samples tested were positive for antibodies specific against the VLA group.

The competitive ELISA (cELISA) is the test prescribed by the OIE for determining HIV status to the VLA (1) as this is the most widely used and validated, showing that meets the requirements of sensitivity and specificity for this purpose (6.) The VP7 protein is highly conserved and contains the epitopes determining the specificity of the BTV serogroup within the 14 in which the viral species are grouped classified within the genus Orbivirus (1). The final report of the Annual Meeting of National Reference Laboratory for bluetongue in the European Community, held in 2007, recognizes that the commercial cELISA used in our study (Pourquier, France) is able to detect the presence of antibodies against all BTV serotypes included in the Interlaboratories trial 2007 (7).

The results coincide with reports made in the 80's for the Caribbean and Central America Region, where

the disease was endemic and there was viral activity every year, resulting in subclinical infections and a high prevalence of antibodies (4, 5). In 1981 Metcalf *et al.* reported an 80% antibody prevalence in an investigation carried out on cattle for slaughter, in Puerto Rico (4). Gibbs *et al.* in 1983, in a study for the detection of antibodies to BTV in ruminant from seven countries in the Caribbean and two from South America found an overall prevalence of 70% in the bovine species (8). However, in subsequent decades no studies of seroprevalence of BTV in the region have been done (9) so we can not compare our results with more recent data on the subject.

The *Culicoides* determine the epidemiology of BTV, because their distribution is influenced by ecological factors such as raining, humidity and soil characteristics, favouring mosquito survival (10). Cuba has documented the presence of species *Culicoides insignis* and *Culicoides pusillus*, vectors reported to the VLA (11, 9). Our tropical country status resulting in high temperatures and humidity, together with the peculiar elongated and narrow island, determines the presence of the vector throughout the country and throughout the year, an increase in population during the rainy season. This leads us to conclude that in Cuba a perfect ecosystem for the circulation of the VLA exist.

This work allowed to obtain preliminary information on the presence of antibodies to BTV in adult cattle from herds eight provinces and selected only because of its potential for trade, for we can not refer to antibodies throughout the country.

The results suggest the need for a national survey covering different ages, purposes of the flock and seasons to determine the sero-prevalence in herds representatives of the entire country. These results further indicate the need for isolation to confirm the presence of the virus and to determine the serotypes.

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