

Communication

Streptococci from the bovine udder in dairy herds in Khartoum Province, Sudan

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HASHIM (N.S.), EL NASRI (M.), YASSIN (T.E.M.). Streptocoques décelés dans la mamelle de vaches laitières dans des troupeaux de province de Khartoum, Sudan. *Revue Elev. Méd. vét. Pays trop.*, 1990, 43 (1) : 55-56.

Cinq cent soixante dix neuf échantillons de lait prélevés sur les vaches laitières de 7 fermes de la région du Nord Cameroun et d'une ferme de Omdurman ont été examinés pour déceler la présence de streptocoques. Centre quatre vingt treize (33,33 p. 100) isolats ont été trouvés et provisoirement identifiés au vu des caractéristiques biologiques et des réactions biochimiques comme étant : *S. pyogenes*, *S. agalactiae*, *S. dysgalactiae*, *S. faecalis*, *S. faecium*, *S. bovis*, *S. equi*, *S. lactis* et *S. uberis*. Cinquante sept isolats identifiés de cette façon ont été testés par l'épreuve d'agglutination sur latex pour déterminer les groupes sérologiques : 39 souches appartenaient au groupe B et 3 au groupe C. Quatre souches ont réagi faiblement à l'antisérum du groupe D et ont été identifiées par test biochimique comme étant *S. uberis*. Deux isolats n'ont pas pu être identifiés par le sérum disponible. C'est la première fois que *S. uberis*, *S. bovis*, *S. equi*, *S. lactis*, *S. faecalis*, *S. faecium* et *S. pyogenes* sont isolés de vaches au Soudan. **Mots clés :** Bovin laitier - Vache - Streptocoque - Lait - Soudan.

Introduction

The dairy industry has expanded greatly in Sudan in recent years to meet an increasing demand for milk and milk products. Many dairy herds consisting of large and small numbers of cows are kept around Khartoum and other big towns to supply milk. The majority of these herds are kept under poor hygienic conditions which favour the spread of mastitis. A high incidence of the disease is therefore reported from different parts of the country.

Streptococci are one of the most important bacterial causes of bovine mastitis, but little work has so far been done on these organisms in the Sudan. The present work was therefore carried out to study the prevalence of streptococci from cow udder.

Materials and methods

Five hundred and seventy-nine composite milk samples were aseptically collected into sterile screw-cap bottles from cows of seven herds in Khartoum North area and one herd in Omdurman. The cows were of

different ages and breeds. The samples were taken to the laboratory immediately after collection, kept at 4 °C, and examined within six hours. Samples were streaked on Edward's medium and the plates incubated at 37 °C under aerobic conditions. Plates were examined daily for four days.

Biochemical identification of the isolates was done according to the method of COWAN and STEEL (3). Serological grouping of 57 representative isolates was made using the latex-agglutination test as described by OXOID (OXOID Deutschland GmbH, Wesel/RH, Germany).

Results

One hundred and ninety-three (33.33 %) isolates were recovered from the 579 milk samples. On the basis of bacteriological characteristics and biochemical reactions the organisms belonged to six groups (A, B, C, D, E and N) involving nine species : *S. pyogenes*, *S. agalactiae*, *S. dysgalactiae*, *S. equi*, *S. faecalis*, *S. faecium*, *S. bovis*, *S. uberis* and *S. lactis*. Thirty isolates could not be placed into any group. The distribution of the different species is shown in Table I. The isolation of these species except *S. agalactiae* and *S. dysgalactiae* from cows in the Sudan is reported for the first time.

TABLE I The distribution of Streptococcal species isolated from milk samples.

Species	Number isolated	% Percentage of total isolates
<i>S. pyogenes</i>	10	5.18
<i>S. agalactiae</i>	16	8.29
<i>S. dysgalactiae</i>	18	9.33
<i>S. equi</i>	8	4.10
<i>S. faecalis</i>	29	15.03
<i>S. faecium</i>	31	16.60
<i>S. bovis</i>	19	9.84
<i>S. uberis</i>	16	8.29
<i>S. lactis</i>	16	8.29
Not identified	30	15.50

The results of the latex-agglutination test with the 57 representative isolates showed that 39 (68.42 %) belonged to group D, 9 (15.7 %) to group B, 3 (5.26 %) to group C and 2 (3.51 %) could not be grouped with the available sera. Four isolates gave weak reactions with group D sera and were identified by biochemical reactions as *S. uberis*.

Discussion

The present work is the first detailed investigation on streptococci from the cow udder in the Sudan. Pre-

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vious studies on bovine mastitis in the country were directed mainly towards the identification of the aetiological agents. However, the presence of organisms belonging to groups B, C and D was reported (2) and the incidence of serotypes of group B streptococci in dairy cattle from various parts of the country was investigated (5).

The prevalence rate of streptococci in Khartoum Province during the present work was 33.33 % and this is much higher than the 6.7 and 15.3 % reported previously (2, 6). With respect to *S. agalactiae*, the prevalence rate in Khartoum Province was 8.2 % during the present work and this was higher than the 2.9 % reported by BAGADI (2) but much lower than the 27.7, 34.9 and 46.0 % reported earlier for different herds in the area (5).

The prevalence rate of *S. agalactiae* in other parts of the Sudan was reported in the Blue Nile Province as 0.49 % in the Nishesheiba farm (1). The prevalence rate of *S. dysgalactiae* during the present work was 9.33 % and this was higher than the 4.4 % reported by SHALLALI *et al.* (4) in the Sennar area.

It is difficult to explain the reasons for these conflicting results, but they may be partly due to the number of samples examined and the frequency in the use of penicillin and other antibiotics for treatment of mastitis and other cattle diseases.

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Five hundred and seventy-nine milk samples were collected from dairy cows on seven farms in Khartoum North area and one farm in Omdurman and examined by bacteriological cultures for the presence of streptococci. One hundred and ninety-three (33.33 %) isolates were recovered and identified on the basis of bacteriological characteristics and biochemical reactions as: *S. pyogenes*, *S. agalactiae*, *S. dysgalactiae*, *S. faecalis*, *S. faecium*, *S. bovis*, *S. equi*, *S. lactis* and *S. uberis*. Fifty-seven isolates representing the preliminary identification were tested by the latex-agglutination test to determine the serological groups. It was found that 39 strains belonged to group B, 3 strains to group C. Four strains gave a weak reaction with group D sera and were identified by biochemical tests as *S. uberis*. Two isolates could

not be identified by the available sera. The isolation of *S. uberis*, *S. bovis*, *S. equi*, *S. lactis*, *S. faecalis*, *S. faecium* and *S. pyogenes* from cows in the Sudan was reported for the first time. *Key words*: Cattle - Cow - Streptococcus - Milk - Sudan.

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