First reported isolation of *Mycoplasma bovis* from an outbreak of bovine mastitis in Sudan

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Key words

Cattle - Friesian cow - Bovine mastitis - *Mycoplasma bovis* - Milk - Sudan.

Summary

Thirty-seven isolates of *Mycoplasma bovis* were recovered from 42 milk samples from imported Friesian cows in Khartoum State. This is the first report on isolation of *M. bovis* in the Sudan.

■ INTRODUCTION

Mycoplasma bovis causes severe purulent mastitis and exudative arthritis in cattle of all ages and is an important pathogen of calves (12). *M. bovis* was first isolated during an outbreak of bovine mastitis in 1962 in Connecticut (9) and was subsequently reported from other parts of the world (8). In the United Kingdom, *M. bovis* was associated with severe pneumonia in calves (10, 12).

This paper reports the isolation of *M. bovis* for the first time in Sudan from cases of severe bovine mastitis in imported cows.

■ MATERIALS AND METHODS

Samples

Fourty-two milk samples were aseptically collected from twenty-eight imported Friesian cows with severe mastitis in Khartoum State.

Two types of media were used in solid and liquid forms: 1) mycoplasma base medium (Oxoid) prepared and used as described by Tully *et al.* (13); 2) heart infusion medium (Difco) prepared and used as described by Freundt *et al.* (7).

Culture methods

A loopful of milk from each sample was streaked on each solid medium and 0.5 ml of milk from each milk sample was inoculated into 4.5 ml of each liquid medium. Cultures were incubated aerobically at 37°C for up to seven days, and the plates were placed in a humid container.

Identification of the isolates

Cloned cultures were identified by reversion (4) and sensitivity to digitonin (1). The isolates were biochemically identified using the following tests: glucose catabolism, arginine catabolism, phosphatase activity, digestion of coagulated horse serum (4), hydrolysis of urea (11), reduction of tetrazolium (1) and "film and spots" formation (6).

All isolates were serologically identified by the growth inhibition test (2) and growth precipitation test (5) using antisera against *M. bovis* and *M. bovigenitalium*.

■ RESULTS AND DISCUSSION

Colonies with the typical fried-egg appearance were seen on microscopic examination after three to five days of incubation from thirty-seven milk samples.

Cloned isolates were all sensitive to digitonin and showed no change of colon morphology after three subcultures in media without bacterial inhibitors.

Subsequently, all isolates were identified as mycoplasmas. All isolates produced "film and spots" biochemically and reduced tetrazolium aerobically. The growth of all isolates was serologically inhibited and precipitated by antiserum against *M. bovis*.

Therefore, on the basis of biochemical and serological results, all isolates were identified as *M. bovis*. This identification was confirmed by CIRAD-EMVT, Maisons-Alfort, France.

M. bovis had not been previously isolated in Sudan. The association of *M. bovis* infection with imported cattle in this outbreak illustrates the potential risk to local cattle. Such observations were pointed out by Reilly *et al.* (10). It is worth mentioning that El Hassan in 1979 (3) examined a large number of samples from the respiratory and genital tract of cattle and 22 milk samples. He did not isolate any mycoplasma from milk but reported that one genital mycoplasma isolate was serologically related to *M. bovis* by the gel diffusion test.

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Résumé

Abbas S.I. Premier rapport de l'isolement de *Mycoplasma bovis* lors d'un foyer de mammite de la vache laitière au Soudan

Trente sept isolats de *Mycoplasma bovis* ont été prélevés sur 42 échantillons de lait provenant de vaches Prim'Holstein importées dans l'Etat de Khartoum. *M. bovis* a été ainsi isolé pour la première fois au Soudan.

Mots-clés : Bovin - Vache Prim'Holstein - Mammite bovine - *Mycoplasma bovis* - Lait - Soudan.

Resumen

Abbas S.I. Reporte sobre el primer aislamiento de *Mycoplasma bovis* en un brote de mastitis bovina en Sudán

Se obtuvieron treinta y siete aislamientos de *Mycoplasma bovis* a partir de 42 muestras de leche, provenientes de vacas Friesian importadas, en el estado de Khartoum. Este es el primer reporte de un aislamiento de *M. bovis* en Sudán.

Palabras clave : Ganado bovino - Vaca Prim'Holstein - Mastitis bovina - *Mycoplasma bovis* - Leche - Sudán.