

Dept. of Vet. Med.,  
Fac. of Vet. Med., Cairo University,  
Head of Dept. Prof. Dr. A.A. Salem.

## BRUCELLA STRAINS PREVALENT IN EGYPT (With 2 Tables)

By

A.A. SALEM and H.I. HOSEIN\*  
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عترات البروسيلا الشائعة في مصر

عبد المنعم سالم ، حسين إبراهيم عبد العال

في هذه الدراسة تم عزل (٤٤) عترة من ميكروبات البروسيلا (٢٠) من الأبقار ، ٢ من الجاموس ، ٢٢ من الأغنام من مناطق مختلفة وتم تصنيفها كالتالي :- ه عترات (٤) (١١)٪ بروسيلا أبورتس النوع الثالث (أبقار وجاموس) ، عترتان (٦)٪ بروسيلا أبورتس النوع الثالث (أبقار) ، ٢٧ عترة (٨٤)٪ بروسيلا مليتنز النوع الثالث (أبقار وأغنام) . وقد أوضح هذا البحث أن عترة البروسيلا مليتنز النوع الثالث هي العترة السائدة في الأبقار والأغنام . كما أوضحت الدراسة خطورة إستيراد حيوانات من مناطق موبوءة بمرض البروسيلا حيث أن هذا يساعد على إدخال عترات جديدة من الميكروب إلى مصر والذي أثبت عن طريق عزل ميكروب البروسيلا أبورتس النوع السابع من أبقار مستوردة وهذا النوع لم يسبق تسجيل وجوده في مصر .

### SUMMARY

In the present study 44 brucella strains were isolated from different animals (20 from cows, 2 from buffaloes and 22 from sheep) at different localities in Egypt. Typing of these isolates revealed 5 strains (11.4%) Brucella abortus biotype 3, 2 strains (4.6%) Brucella abortus biotype 7 and 37 strains (84%) Brucella melitensis biotype 3. Brucella abortus biotype 3 was recovered from cows & buffaloes, Brucella abortus biotype 7 was isolated from cows, whereas Brucella melitensis biotype 3 was isolated from sheep & cows.

The results revealed that Brucella melitensis biotype 3 is the prevalent type among sheep & cows. Isolation of Brucella abortus biotype 7 is considered the first record for this biotype in Egypt indicating the danger of importation of animals from infected localities.

### INTRODUCTION

Brucellosis still constitutes a major problem to livestock. In Egypt, little is known about the prevalent biotypes of brucella organisms. This may be due to the difficulties of continuous typing of new recovered strains and also due to importation of animals specially from infected countries.

\* : Dept. of Vet. Med., Fac. of Vet. Med., Beni-Suef, Cairo University.

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From the epizootiological point of view, it was of utmost importance to study the common brucella types prevalent in native and imported farm animals.

**MATERIAL and METHODS****Material :****1- Samples :**

a- **Milk samples :** Individual milk samples (last streak) from 70 cows, 20 buffaloes and 30 sheep, were collected.

b- **Tissue specimens :** Prescapular, precrural and supramammary lymph nodes as well as spleen and udders from 10 serologically positive cows slaughtered at Cairo abattoir, and 22 serologically positive ewes slaughtered at abattoir at EL-BEHIRA N.B. All samples were collected from animals with history of brucellosis.

**2- Media :**

Albimi agar media for isolation and identification of Brucella organism was obtained from CHAS Pfizer, Anco. Inc, N.Y., U.S.A.

3- **Monospecific anti Brucella abortus** and anti Brucella melitensis sera were obtained from Wellcome Research Laboratories, Beckenham, England.

4- **Bacteriostatic dyes :** Thionin and basic fuchsin.

5- Brucella phage (Tb) at routin test dilution (RTD) and at  $1 \times 10^4$  RTD, was obtained from central Vet. Lab., Weybridge, England.

6- Lead acetate for preparation of lead acetate papers.

7- Reference brucella strains were Brucella abortus 544 and Brucella melitensis 16 M.

**Methods :**

Isolation and identification of brucella strains were carried out according to the methods recommended by FAO/WHO Brucella Committee (ALTON et al., 1975).

**RESULTS**

Results are shown in Tables 1 & 2.

**DISCUSSION**

In this study, the results of typing of 44 brucella isolates recovered from different animals (20 from cows, 2 from buffaloes & 22 from sheep), revealed 5 strains of Brucella abortus biotype 3, 2 strains Brucella abortus biotype 7 and 37 Brucella melitensis biotype 3.

Brucella abortus biotype 3 could be recovered from 2 buffaloes and 3 cows. This biotype was previously recorded in Egypt by SAYOUR et al. (1970) "from cows & buffaloes", SHAWKAT et al. (1976) "from buffaloes", SALEM et al. (1975) "from stray dogs & rats" and HOSEIN (1987) "from buffaloes". The results of this study and those of other authors indicate the wide spread of this biotype in brucellosis infected animals.

## Br. STRAIN

In this study, Brucella abortus biotype 7 was isolated from 2 imported Fresian cows. In the available literatures, Brucella abortus biotype 7 was never previously isolated from animals in this country, suggesting that this biotype may be introduced with imported animals from infected areas, the matter which support the prohibition of importation of animals from infected countries.

In this investigation, Brucella melitensis biotype 3 was isolated from 15 cows and 22 sheep. Isolation of Brucella melitensis from cattle can be attributed to the contact of sheep with cattle. This finding has a great epidemiological and epizootiological importance as Brucella melitensis is more dangerous for man than the other brucella species (LAING, 1979). Brucella melitensis biotype 3 was recorded in Egypt by ALTON (1963) "from sheep), SAYOUR et al. (1970) "from cows and sheep", EL-GIBALY et al. (1975) "from cows" and HOSEIN (1987) "from cows".

The obtained data indicate that Brucella melitensis biotype 3 is the predominant biotype in Egypt.

The results of this study clarified the importance of further and continuous studies for brucellosis not only on the serological basis but also the isolation and identification of brucella strains in Egypt which is of great epizootological and epidemiological significance specially in organizing a proper control program on national basis.

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Table (1): Isolation of *Brucella* organisms from different animals.

Animal species	Samples	No of samples	No of isolates
Cows	Milk	70	13
	Tissue specimens	10	7 (20)
Buffaloes	Milk	20	2 (2)
Sheep	Milk	30	5
	Tissue specimens	22	17 (22)
Total		152	44

Tissue specimens include : Prescapular , precrucial and supramammary Lymph nodes, as well as spleen and udders.

Table (2): Results of typing of *Brucella* isolates.

Animal species	No. of isolates	Co2 requirement	H2S Production	Sensitivity to dyes			Agglutination		Lysis by Phage		Types of isolates
				Thionin			Basic monospecific Fuchsin anti sera		RTD		
				a	b	c	a	b	A	M	
Cows	3	+	+	+	+	+	+	-	+	+	<i>Brucella abortus</i> biotype 3
	2	-	-	+	+	+	+	+	-	-	<i>Brucella abortus</i> biotype 7
	15	-	-	-	+	+	+	+	-	-	<i>Brucella melitensis</i> biotype 3
Buffaloes	2	+	+	+	+	+	+	-	+	+	<i>Brucella abortus</i> biotype 3
Sheep	22	-	-	-	+	+	+	+	-	-	<i>Brucella melitensis</i> biotype 3
Total	44										

a- 1/25 000  
b- 1/ 5 000  
c- 1/ 1 00000

A- *Brucella abortus* monospecific anti sera.  
M- *Brucella melitensis* monospecific anti sera  
RTD- Routin test dilution Tb phage.