

Dept. Animal Medicine,  
Fac. Vet. Medicine, Kafr El Sheikh,  
Tanta Univ. Egypt.

## **SERO - PREVALENCE OF CAMEL BRUCELLOSIS AT ASSIUT GOVERNORATE**

(With One Table)

By

**M.H. AL- GAABARY and M.I. MOURAD\***

\* Dept. of Animal Medicine Faculty of Vet. Med. Assiut University

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**دراسة سيرولوجية على بروسيلا الجمال بمحافظة أسيوط**

**مجدي حساتين الجعيري ، مراد إسماعيل مراد**

استهدف هذا العمل رصد مرض البروسيلا في الجمال في محافظة أسيوط خلال الفترة من مارس ٢٠٠٣ وحتى مايو ٢٠٠٤ مستخدماً ٤٣٠ عينة سيرم (٣١٢ عينة من جمال قبل الذبح ، ١١٨ عينة من جمال مخالطة لحيوانات المزرعة) ، وذلك بإجراء بعض الاختبارات السيرولوجية لعينات السيرم مستخدماً اختبار الـ روزينجال واختبار التليد الانبوبي واختبار الـ ريفانول واختبار الميركايتوايثانول . أوضحت الدراسة إيجابية العينات لهذه الاختبارات بنسبة ٧,٦٢% ، ٨,٨٠% ، ٦,٧٥% ، ٦,٨٧% علي التوالي . ارتفاع إيجابية العينات في هذه الدراسة يلقي الضوء علي أهمية هذا المرض في الجمال وأهمية الجمال في وبائيته وبالتالي وضع ذلك في الاعتبار أثناء تطبيق برامج التحكم واستئصال المرض إلي جانب ما يستخدم في الأبقار والجاموس والأغنام والماعز .

### **SAMMARY**

This work was applied on Camel brucellosis at Assiut governorate during March, 2003 till May, 2004) using 430 serum samples (312 from Camels before slaughtering and 118 samples from camels in contact with farm animals). Rose Bengal, tube agglutination, Mercaptoethanol and Rivanol tests were applied on the collected sera. Positive cases represented 7.67, 8.84, 6.97 and 6.75% respectively. The high prevalence of camel brucellosis using the above mentioned tests through light on the importance of camel brucellosis. So camel populations must be put in consideration beside cattle, buffaloes, sheep and goats during controlling the disease.

**Key Words: Brucellosis, camels, seroprevalence**

## INTRODUCTION

Camels has a great economic importance among farm animals in Egypt as well as other countries allover the world. Camels considered as one of the main sources of meat, milk, wool and hides. In Egypt the number of camels reach upto 102327 as mentioned by general organization for veterinaiy service (GVOS, 1998).

In Saudi Arabia, the overall seroprevalence of camel brucellosis was 8 % (Radwan *et al.* 1995). Abbas and Agab (2002) described two patterns of occurrence of brucellosis in camels; The first is the low prevalence (2 – 5 %) and the second is the high prevalence (8 – 15 %). Camel brucellosis had been reported in Ethiopia with seroprevalence of (1.2 % - 6.3 %) Teshome *et al.* (2003) The disease had been reported with different prevalence rates ( 4.78 – 12.66 %) at different localities in Egypt, El- Nahas ( 1964), Fayed *et al* ( 1982), Nada (1990), Thabet *et al.* (1993), Barsoum *et al* (1995), El Sawalhy *et al* (1996), Atwa (1997). The efforts and programs of control and eradication of the disease had been directed toward cattle, buffaloes, sheep and goats whereas camels were neglected.

The aim of this work is directed to evaluate the efficiency of some serological tests for diagnosis of Camel brucellosis and in turn determination of prevalence of the disease in slaughtered camels and those in contact with farm animals at Assiut governorate.

## MATERIALS and METHODS

### (I) Material

#### 1 - Samples:

A total number 430 camel serum samples (312 from camel before slaughtering at Bani -Adi Abattoir, Assiut Governorate and 118 from incontact camels with other farm animals).

#### 2 - Antigens:

Rose Bengal plate, tube agglutination and Rivanal antigens were supplied by vet. Sera and vaccine research institute, Abbassya, Egypt.

### (II) Methods

Rose Bengal plate, tube agglutination, Rivanol and Mercaptoethanol tests were carried out according to Alton *et al* (1988).

## RESULTS

Prevalence of serum positive reactors for slaughtered camels at Bani-Adi (Assiut Governorate) using Rose Bengal plate, tube

agglutinations, Rivanol and Mercaptoethanol tests and to those for incontact animals are illustrated in table (1).

**Table 1:** Sero prevalence of brucellosis among camels at Assiut Governorate

Test Animals	Rose Bengal plate test		Tube agglutination test		Rivanol test		Mercapto-ethanol test	
	+ ve	%	+ ve	%	+ ve	%	+ ve	%
Number of slaughtered camels (312)	24	7.69	28	8.97	21	6.73	22	7.05
Number of contact camels with farm animals (118)	9	7.62	10	8.47	8	6.77	8	6.78
Total number and % (430)	33	7.67	38	8.84	29	6.5	30	6.97

The highest positive sero- prevalence was obtained using tube agglutination test (8.84%) followed by application of Rose Bengal plate test (7.67%). No clinical signs were observed in the positive camels.

## DISCUSSION

Brucellosis among farm animals has a great economic importance beside the other contagious, zoonotic diseases, so the early detection of brucellosis in our farms is very important to protect our farm animals and human beings from the hazard of the disease through application of successful program for control and elimination. Camel brucellosis has been reported in many countries specially in Saudi Arabia, Kuwait, Oman, Iraq, Iran, Sudan, Libya, Somalia and Egypt. The disease was reported also in racing camels in the united Arab Emirates. *Brucella melitensis* biovar 3 is the most common isolates from animals in Egypt, Jordan, Tunisia and turkey. *Brucella abortus* biovar 1 was also reported in Egypt. The most human cases are caused by *brucella melitensis* biovar 3. Vaccination against the disease is confined on cattle and small ruminants (Refai 2002). In this work application of Rose Bengal plate test as a screening test for camel brucellosis followed by other tests as confirmatory tests for the disease revealed positive reactors as 7.67%, 8.84%, 6.5% and 6.97% (Table 1). The high prevalence of the tests in Egypt may be attributed to the importation of

the majority of slaughtered camels in Egypt from the neighboring countries specially from Sudan where the incidence of camel brucellosis as mentioned by Yagoub *et al* (1990) which was 9.95% and also from Somalia where the incidence of the disease as mentioned by Baumann and Zessin (1992) which was 1.9 %.

Table (1) cleared that seroprevalence in slaughtered camel using Rose Bengal plate, tube agglutination and Mercaptoethanol tests is higher than that in contact animals. This reflects the real situation of brucellosis among imported camels for slaughtering from the neighboring countries and in turn reflects the attention to study the role of camels in transmitting brucellosis to other farm animals.

In our study table (1) revealed that Rose Bengal plate test as a screening test followed by agglutination, Rivanol and/ or Mercaptoethanol test as confirmatory test were efficient for detection of sero-positive camels. The high prevalence which obtained in this study indicated the role of camels in the epidemiology of the disease and consequently paying attention to camels during the application of the national program for control and eradication of brucellosis in Egypt where the disease was reported by Barsoum *et al* (1995) in camels with high incidence as in Kaliobia (8%) and Dakahlia (6%). These results were nearly more or less in agreement with our results in Assiut (7.67 %, 8.84 %, 6.75 % and 6.97 %) positively using Rose Bengal plate, tube agglutination, Rivanol and Mercaptoethanol tests respectively.

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