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**THE EFFECT OF HOUSING SYSTEM ON THE PREVALENCE  
 OF TUBERCULOSIS, BRUCELLOSIS AND MASTITIS**  
 (With 3 Tables)

By

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تأثير نوع الايوان على انتشار أمراض السل والإجهاض المعدي  
 وإلتهاب الضرع

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تم فحص عدد ٢١٣٤ ، ٢١٥٦ ، ١٤٢١ من الأبقار والجاموس وذلك لمعرفة مدى الإصابة  
 بأمراض السل ، الإجهاض المعدي والتهاب الضرع . ولقد وجد أن نسبة الإصابة بالسل في  
 الأبقار والجاموس كانت ٢.٩٣% و ٤.٩٣% على التوالي ، كما أن نسبة الإصابة كانت أعلى  
 من نظام المباني المغلقة عنه في المباني المفتوحة . كما وجد أن نسبة الإصابة بمرض الإجهاض  
 المعدي كانت ٧.١٣% و ١.١٤% في الأبقار والحليب والجاموس على التوالي كما أن نسبة  
 الإصابة أعلى في المباني المفتوحة . أما الإصابة بالتهاب الضرع في الأبقار والجاموس فكانت  
 ٣.١% و ٠.٠٦% على التوالي . وكان معدل الإصابة أعلى في نظام المباني المغلقة عنه في المباني  
 المفتوحة .

### SUMMARY

A total of 2134, 2156 and 1421 cattle and buffaloes were examined for the detection of tuberculosis, brucellosis and mastitis respectively. The incidence of tuberculosis in dairy cattle and buffaloes were 3.93 and 4.93% respectively with a higher incidence in cow house system.

On the other hand, the incidence of brucellosis was found to be 7.13 and 1.14% in both dairy cattle and buffaloes respectively with a higher percentage in milk house system than in cow house system. Moreover, the incidence of mastitis in dairy cattle and buffaloes was found to be 3.1 and 0.06% respectively with a higher percentage in cow house system than in milk house system.

### INTRODUCTION

Keeping of animal health can be achieved by employing proper principles of sanitation. A program requires a full co-operation between husbandmen, veterinarian and farmers. Animals usually acquired infections diseases by contact with diseased animals and improper sanitation and management. Many investigators have studied



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the effect of the type of housing system on the prevalence of tuberculosis, brucellosis and mastitis in cattle and buffaloes (RUE and DONALD, 1971; BLOOD and HENDERSON, 1974; BRAMLEY *et al.*, 1981; JOHN *et al.*, 1981 and LAILA, 1984).

The present study was conducted to reveal the effect of the type of housing on the prevalence of tuberculosis, brucellosis and mastitis.

### MATERIAL and METHODS

In the present study, a total of 2134 animals, of which 1322 head of dairy cattle and 812 buffaloes were examined for tuberculosis. Moreover, a total of 2156 animals (1277 dairy cattle and 879 buffaloes) were examined for brucellosis. On the other hand, 1421 animals were examined (1256 dairy cattle and 165 buffaloes for detection of mastitis).

#### 1- Tuberculosis :

The technique performed was the same as that previously recommended by MAHMOUD (1954).

#### 2- Brucellosis :

a- Rose Bengal test.

The technique performed was the same as that previously recommended by MORGAN *et al.* (1974).

b- Tube agglutination test :

The technique performed was the same as that previously recommended by ALTON and JONES (1967).

#### 3- Mastitis :

California mastitis test was performed for the detection of mastitis as recommended by SCHALM (1957).

The types and number of inspected animal in different types of enclosures were illustrated in Table (1).

Table (1): Types and number of inspected animal enclosures.

| Type of housing              | Cow house system   | Milk house system   |
|------------------------------|--|---|
| Number of housing            | 2  | 4   |
| Number of examined cattle    | 412  | 896   |
| Number of examined buffaloes | 427  | 385   |
| Localities.                  | - Farms of agriculture<br>Alex. University .<br>- El-Tahreer farms . | - Farms of agriculture,<br>Alex. University .<br>- El-Tahreer farms . |



## RESULTS

Are presented in tables 2 & 3.

## DISCUSSION

The results recorded in Table (2) revealed that the incidence percentage of tuberculosis in dairy cattle and buffaloes were found to be 3.93 and 4.93 respectively which are higher than those recorded by LAILA (1984). These results confirm the conclusion of COCKRILL (1974) who found that the disease in buffaloes was higher than in dairy cattle. However, a contradictory opinion was stated by BLOOD and HENDERSON (1974) who reported that a higher incidence of tuberculosis in dairy cattle than in buffaloes. On the other hand, the prevalence of tuberculosis was found to be affected by type of the housing system as illustrated in Table (3). The incidence percentage of tuberculosis in cow house system was found to be (5.58) and (5.85) in dairy cattle and buffaloes respectively while in milk house system the incidence percentage were 3.24 and 3.9 in dairy cattle and buffaloes respectively, which support the results recorded by BLOOD and HENDERSON (1974) and JOHN *et al.* (1981). In addition, the higher incidence of tuberculosis in buffaloes and dairy cattle enclosed in cow house system than in Milking house system can be easily observed from Table (3). Moreover, overcrowding, unhygienic building, poor ventilation inadequate lighting and face arrangement of animals were predisposing factors for spreading of tuberculosis (RUE and DONALD, 1971; JOSEPH, 1972; BLOOD and HENDERSON, 1974 and JOHN *et al.*, 1981).

The data presented in Table (2) showed that the incidence of brucellosis was found to be 7.13 and 1.14% in cattle and buffaloes respectively which was higher than those reported by LAILA (1984) and ZAGHLOUL and KAMEL (1985) but lower than the incidence recorded by ABOU-ISHA (1986). In addition, the incidence percentage of brucellosis was found to be higher in milk house system (4.22 and 0.85 in dairy cattle and buffaloes respectively) than in cow house system (3.04 and 0.49 in dairy cattle and buffaloes respectively) Table (3) which may be due to contamination of the earth floor and bedding with the vaginal discharges from aborted animals (LAING, 1970; MERCK, 1973; BLOOD and HENDERSON, 1974 and CHERYL, 1981). The incidence of mastitis in investigated dairy cattle and buffaloes was found to be 3.1 and 0.6% respectively (Table 1) which was lower than the results obtained by BRAMLEY *et al.* (1981) and CHERYL (1981).

In addition, the percentage of mastitis in cow house system (3.59 and 1.92 in dairy cattle and buffaloes respectively) was found to be higher than in milk house system (Table 3). These results are supported by EKESBO (1966), GROMMER *et al.* (1972) and HOWEL (1972) who recorded a higher incidence of mastitis in cow house system than in milk house system. The contamination of bedding material with the causative microorganism, treading on teats, inadequate bedding materials, uneven surfaces of the floor and poor hygiene were found to be the main predisposing factors in the causation of mastitis (BLOOD and HENDERSON, 1974; BRAMLEY and NAEVE, 1975;



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RENDOS *et al.*, 1975; BLAKLY *et al.*, 1979 and CHERYL, 1981). Dirty, cold and damp floors, with little or no bedding, will lower the udder resistance. Moreover, inadequate space between the cows can cause troubles with trodden teats (GLYN, 1983).

Generally, the animal houses should be provided with adequate ventilation, bedding materials even surfaces of floor together with the hygienically disposal of secretion and excretion as well as animal wastes which will minimize the occurrence of infectious diseases.

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Table (2): The percentage of Tuberculosis (TB) Brucellosis and mastitis in dairy cattle and buffaloes.

| Diseases       | Tuberculosis |    | Brucellosis |      | Mastitis |        |     |      |     |      |      |     |      |
|----------------|--------------|----|-------------|------|----------|--------|-----|------|-----|------|------|-----|------|
|                | No.          | %  | No.         | %    | No.      | %      |     |      |     |      |      |     |      |
| Animal species |              |    | Total       |      | R.B.P.T. | T.A.T. |     |      |     |      |      |     |      |
|                |              |    | No.         | %    | +ve      | %      | +ve | %    | +ve | %    | NO.  | +ve | %    |
| Dairy Cattle   | 1322         | 52 | 3.93        | 1277 | 91       | 7.13   | 49  | 3.84 | 42  | 3.29 | 1256 | 39  | 3.1  |
| Buffaloes      | 812          | 40 | 4.93        | 879  | 10       | 1.14   | 6   | 0.68 | 4   | 0.45 | 165  | 1   | 0.6  |
| Total          | 2134         | 92 | 4.30        | 2156 | 101      | 4.70   | 55  | 2.50 | 46  | 2.10 | 1421 | 40  | 2.80 |

R.B.P.T. = Rose - Bengal - Plate Test.  
T.A.T. = Tube Agglutination Test.

Table (3): The incidence of infectious diseases in cow and milk house systems.

| Type of housing and diseases | Cow house system |             |          |       | Milk house system |             |          |       |      |     |    |      |     |     |      |
|------------------------------|------------------|-------------|----------|-------|-------------------|-------------|----------|-------|------|-----|----|------|-----|-----|------|
|                              | Tuberculosis     | Brucellosis | Mastitis | Total | Tuberculosis      | Brucellosis | Mastitis | Total |      |     |    |      |     |     |      |
| Animal species               | NO.              | +ve         | %        |       | NO.               | +ve         | %        |       | NO.  | +ve | %  |      | NO. | +ve | %    |
| Dairy cattle                 | 412              | 23          | 5.58     | 362   | 11                | 3.04        | 362      | 13    | 3.59 | 896 | 29 | 3.24 | 901 | 38  | 4.22 |
| Buffaloes                    | 427              | 25          | 5.85     | 407   | 2                 | 0.49        | 52       | 1     | 1.92 | 385 | 15 | 3.90 | 472 | 4   | 0.85 |