

محاولات لمقاومة مرض الإجهاض المعدى فى مزرعة

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حدثت حالات أجهاض متعددة فى مزرعة البان أبقار فريزيان تعدادها ٥٥١ رأس فى منطقة طوخ طمبشا منوفية وفيه وضع برنامج للكشف والتخلص من هذا الوباء وقد تم إجراء الاختبارات السيرولوجية المختلفة لتشخيص اللبن والدم على جميع حيوانات المزرعة وكذلك تم فحص السائل المنوى للثيران وتم عزل عدد ٣٢ عترة من ميكروب البروسيلا والأجنة المجهضة وتم تصنيفها كما تم تطبيق الإجراءات الصحية البيطرية مع التخلص بالذبح للحيوانات الإيجابية وقد كان الفحص يتم بصفة دورية كل ١٤ يوما ولمدة ٩ شهور حتى تم القضاء نهائيا على هذا الوباء فى المزرعة وقد نوقشت الأسباب التى أدت الى دخول المرض لهذه المزرعة والتى تعتبر مزرعة نموذجية كما نوقشت جميع الظروف التى تتحكم فى المزرعة مع اعطاء التعليمات المناسبة التى تضمن بقاء المزرعة خالية من مثل هذا المرض .

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TRIALS FOR CONTROL AND ERADICATION OF BRUCELLA INFECTION IN A FARM

(with one figure)

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SUMMARY

Tube agglutination (SAT) milk ring test (ABR) were used to detect brucella infection among freizian dairy Cows in Menofia Governorate.

Bacteriological examination and typing of the isolates diagnosed the brucella Melitensis biotype 3.

SAT and ABR tests proved to be reliable diagnostic tests for diagnosing the disease and lead to success of the control methods used for eradication of Brucejlosis in the farm.

INTRODUCTION

During January and February 1970, an abortion storm appeared in a Freizian dairy farm (551 animals) in Menofia Gevernorate. These animals were imported from Denmark and were certified as brucella-free. The main practical aids for detection of this outbreak, which was suspected to be brucella-infection, were the standard tube agglutination test (SAT), and milk ring test (ABR).

BRUNN (1953) established the basis of elimination of brucella-infection on the segregation of reactors to (SAT) and (ABR).

NELSON (1953) added that notification and isolation of aborted cases should be also Practiced besides carrying these two tests.

ANNON (1956) and TCHENCHEV *et al.* (1962) discussed some eradication programmes based on serological testing and culling of reactors besides disinfection of the premises and calf-hood vaccination.

The difficulty of the interpretation of the negative results of (SAT) and (ABR) was previously discussed by many investigators. SCHIMMEL and

KOTSCHKE (1963) threw lights on the doubtful cases to serological tests on farms with low protein level in their sera. Since infected animals may fail to develop antibodies for lack of protein in their sera.

SJOLLEMA (1967) confirmed the positive reactors to (ABR) by applying the (SAT) which was in harmony with each others. Moreover trials for isolation of the causative agent from milk of doubtful animals to both (SAT) and (ABR), raise the percentage of positive cases, (BLOOD and HANDERSON, 1968).

Control methods for eradication of Brucellosis, in a dairy farm depends on some factors, the most important of which, are the different methods used in diagnosing the disease.

In this investigation, two principal items were followed, detection of infection in individual animals doubtful to both (SAT) and (ABR) by trials of isolation of the organism, or tracing its specific antibodies in milk or blood serum and following the most recent standard hygienic measures.

MATERIALS AND METHODS

Thirty-five aborted faeti were sent with a minimum of delay to the department of Bacteriology, Animal Health Research, Institute for bacteriological examination. The 4th stomach contents as well as lung, liver and spleen were cultured on brucella-agar "Pfizer" to which antibiotics (KUZDAS and MORSE, 1953) and ethyl violet, (RENOUX, 1954) were added.

Individual milk samples from 100 lactating animals were subjected to (ABR), (STABLE FORTH, 1955), every fortnight. Tetrazol stained antigen used in this test was imported from Denmark. In the meantime, blood samples were collected for (SAT), (SHARMA *et al.*, 1968). The antigen used was that prepared by the department of Biological products, Animal Health Research Institute, Abbasia.

Milk samples from doubtful reactors to (ABR) and (SAT) were collected aseptically for trials to isolate brucella organisms, (ALTON and JONES, 1967).

Semen samples were also collected from bulls under aseptic conditions, were forwarded to bacteriological and serological investigations for brucella-infection.

All cases proved to be positive either by isolation of the organism or serologically, were slaughtered at once.

Doubtful cases were retested within 2 weeks intervals, and for 9 months, Animals of this group were isolated under strictly hygienic measures till they prove to be positive or negative.

Complement fixation test (CFT) (ALTON and JONES, 1967) was adopted to negative cases to (SAT) to ensure that the concerned individuals on the premises were really free from brucellosis. The isolates were subjected to conventional test for identification and typing to specify the biotypes, (ALTON and JONES 1967).

RESULTS AND DISCUSSION

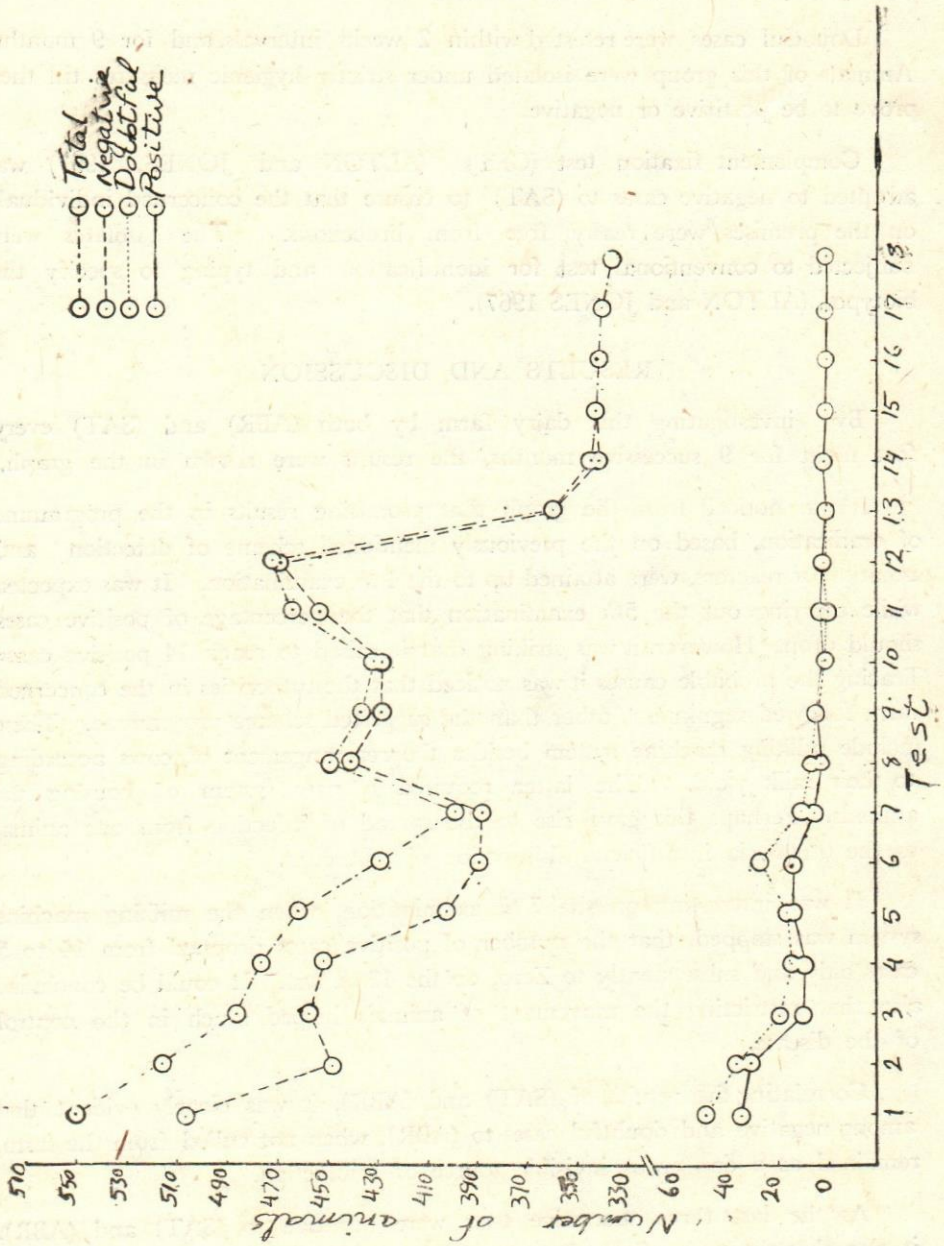
By investigating this dairy farm by both (ABR) and (SAT) every fort night for 9 successive months, the results were shown in the graph.

It was noticed from the graph that promising results in the programme of eradication, based on the previously mentioned scheme of detection and isolation of reactors, were attained up to the 4th examination. It was expected while carrying out the 5th examination that the percentage of positive cases should drop. However it was striking that it raised to reach 14 positive cases. Tracing the probable causes it was noticed that the authorities in the concerned farm followed regulations other than the suggested scheme programme. These include milking machine system besides the rearrangement of cows according to their milk yield. The latter required a new system of housing the animals. Perhaps this gave rise to the spread of infection from one animal to the other via insufficient disinfection of teat cups.

It was interesting on the 7th examination, when the milking machine system was stopped, that the number of positive cases dropped from 14 to 5 cases only and subsequently to Zero, on the 13th test. It could be concluded also that restricting the movement of animals helped much in the control of the disease.

Correlating the results of (SAT) and (ABR), it was clearly evident that among negative and doubtful cases to (ABR), when not culled from the farm, remained as a dangerous invisible source of reinfection.

As the last three successive tests were negative to (SAT) and (ABR), it was thought to confirm these results by (CFT) where all animals proved to be brucella free.



In this investigation, it was succeeded also to isolate 32 strains of brucella from milk samples of doubtful cases to (SAT).

By typing of these isolates they were *Br. melitensis* biotype 3. It was thought that the introduction of this strain to that farm, may be attributed to transmission of infection by the attendants and employees living in the near by villages.

Those own sheep and goats which might be infected with *Br. melitensis*. Some of those farmers proved afterwards to suffer from undulant fever*.

It could be concluded that successive testing of animals in infected premises by more than one of the serological tests should be carried out. Besides the control hygienic measures including continuous disinfection, control of milking machine, isolation of doubtful and positive cases, and restriction of animal movement play also an important role in spreading the disease

It is worthy to mention here that care should be taken especially towards doubtful cases (with low titres) where the milk of these animals should be retested by (ABR) and cultural means.

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