Control of Brucellosis in Animals in Egypt

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In Egypt, brucellosis in animals was reported for the first time in 1939. The prevalence of serological reactors on limited surveys has varied however from one author to the other. In cows it was reported to be between 16.5% and 23.3%. The prevalence among buffaloes varied from 7-10%. Isolations of Brucella abortus from cattle were made by various workers as early as 1943. Since 1970, Brucella melitensis has been isolated from sheep and goats and also cattle. During the 1960s, with the importation of Friesian cows for the establishment of governmental farms with large numbers of animals, the incidence of brucellosis in cattle on some farms became very high. In Touch Tambesha farm in Menofia, for example, it reached up to 38%. Such a high incidence was observed only in farms with large numbers of animals concentrated on relatively small amounts of land.

Parallel with the open door policy in the seventies and early eighties, there was a marked increase in the number of intensive breeding farms, both governmental and private. This was based on the importation of large numbers of Friesian cows from different countries. As an example, 8136 breeding animals were imported in the year 1983. The appearance of brucellosis among these newly established farms in most governorates at high rates was alarming. It was in fact a dilemma for the owners as well as the veterinary authorities. The load on the diagnostic laboratory at the Central Veterinary Laboratory in Dokki was great. The quarantine measures were applied on farms having positive reactors. The owners sought advice from all possible sources with the result that several types of vaccines were used, sometimes in the same animal. This resulted in very high reactor rates that reached in a farm in Sharkia for example to 71% positives and 14% suspicious cases, which could not be judged as infected or vaccinated. In such cases, the policy of test and slaughter was a burden on the government.

The initiation of a control programme based on calfhood vaccination with the reduced dose of Brucella abortus S 19 vaccine was made possible through the American-Egyptian Project (EG-APHIS-217). It was decided to use the reduced dose (3-10 billion organisms) in serologically negative female calves, 4-6 months old. The adult vaccination (0.5 billion) was not approved, instead , the adults were allowed to be vaccinated with the killed 45/20 vaccine. It was decided to use Rose Bengal and Buffered Acidified Plate Antigen tests for screening and Rivanol as well as Complement fixation tests for confirmation. In dairy farms, the milk ring test was to be applied to bulk milk samples every 3-4 months and positive herds were to be subjected to blood testing of individual animals. All imported animals are to be kept in quarantines for at least 30 days. Pregnant imported animals should be negative when tested 14 days after calving. Herds containing even one positive animal are kept under quarantine and all

animals are to be subjected to periodical testing every 21 days. Quarantine measures are released only if the animals pass three consecutive negative tests at 21 days intervals.

In my opinion, all these measures, namely, the periodical testing, slaughtering of the positives, calfhood vaccination of the negative females with the reduced dose S19 vaccine, adult vaccination with 45/20 killed vaccine, strict hygiene and quarantine measures and testing of imported animals and infected herds, have led to the drastic drop in the incidence of brucellosis in cattle and buffaloes at several farms in selected governorates.

The success achieved through this project has encouraged the FAO to support the continuation of the surveillance programme and vaccination in 4 other governorates in the Delta and one governorate in Upper Egypt. In addition, this project supported the establishment of Brucella Control Units in these governorates which carried out field tests, namely Rose Bengal, Buffered acidified Plate Antigen and Milk Ring tests. The positive samples are then confirmed in the provincial laboratories using tube agglutination and rivanol tests. The Central Laboratory at Dokki serves now as the reference laboratory for final confirmation, isolation, biotyping, checking of the vaccines, antigens, etc.

To eliminate any confusion concerning brucellosis epidemiology, diagnosis and control, training courses for field veterinarians were conducted and a guide covering the most essential facets of brucellosis in cattle was printed and distributed. The American-Egyptian Project 416 supported the establishment of more Brucella control units, so that now we have 73 units distributed allover the governorates. This project which ended in 1997 has enabled the government to test almost 40% of the animals in Egypt. In all cases, the positive animals are slaughtered and the government compensates the owners. The average incidence of reactors dropped drastically in 1997 to 0.8%. However, due to limited budget for Brucella control at present, the rate of reactors is increasing again. At the same time, little is done to control brucellosis in sheep and goatsain Rev. 1 vaccine, which is not licensed in Egypt, is used only on a trial basis to vaccinate sheep and goats. This may be the reason for the increasing incidence of Brucella melitensis biovar 3, which is the principle cause of brucellosis in sheep and goats, in cattle and buffaloes. Moreover, nothing is done for camels, swine, dogs and other animals.

Because, the production of Brucella abortus Strain 19 vaccine in USA was stopped in the last 2 years and the Brucella abortus RB51 is now considered the official vaccine, two trials have emerged recently. The Veterinary Serum and Vaccine Research Institute at Abbasia started to produce the S19 vaccine and the RB51 was imported to be used on a trial basis, but not yet licensed. I do not know which vaccine will be the official one in the near future. Also, with regard to the control policy, there is a trend in the region supported by the FAO to apply mass vaccination of all animals irrespective of the breed, age, sex etc. In Egypt, this policy was not yet approved. This means, we still apply the test and slaughter policy and the vaccination of the negative female calves with S 19 vaccination.