A SURVEY OF FOWLPOX PREVALENCE IN MOROGORO TOWNSHIP AND ADJACENT FARMS BETWEEN 1977 AND 1982

Maeda-Machangu, A.D. and Materu, J.S.A. *Sokoine University of Agriculture, Faculty of Veterinary Medicine, Box 3019, MOROGORO, TANZANIA.*

SUMMARY

The prevalence of fowl pox in 21 farms surveyed was found to be 44% but the trend of the disease in the region was observed to be decreasing from 1977 to 1980 from 1.8 to 0.3% while the bird population had increased from 71, 724 to 117, 600 birds respectively. Data on the prevalence of the fowl pox in Morogoro was collected from regional and district livestock office and individual farms. Where a clinical disease was present, samples for viral isolation and identification were taken to confirm the condition. Serum was collected to study the immunological response in the exposed flocks. Twenty one farms with a population of 4652 birds were visited. Five clinical cases showing fowl pox lesions were confirmed by viral isolation and identification. Attempts to do serological survey were aborted due to lack of facilities to carry out a serological sensitive test.

INTRODUCTION.

Poultry industry ranks second in importance to beef cattle in Tanzania.The emphasis on poultry keeping has been intensified due to fast returns. In addition chicken can survive in a wide range of climatic conditions and have high efficiency of feed conversion to protein (Semoka, 1972; Mavoa; 1973 and Mgheni, 1978).

Although the government policy was geared to increasing poultry keeping, this has been hampered by diseases, shortage of day-old chicks and shortage of food among others. The shortage of day-old chicks and shortage of food, are temporary problems which can be remedied readily, while disease control is still a major constraint. The four major diseases constraining the expansion of poultry industry are New castle disease, coccidiosis, fowl pox and fowl typhoid.

Fowl pox was first reported in 1924 in the coastal regions of Tanzania. It was later reported from all parts of the country attacking both local and exotic breeds and their crosses. The exotic breeds and their crosses are more susceptible and there is higher incidence in chicks than adults (Annual report 1980; 1981; 1982).

The characteristic feature of fowl pox disease is the appearance of small nodules on the combs, wattle and eye comissure which on bursting are replaced by dry scabs. In severe cases pock lesion can appear almost over the whole of the surface of the body. The croupous form is more severe and often fatal especially when secondary bacterial infection occurs. This involve the formation of diphtheric membranes in the mouth and pharynx. Economically, egg production ceases and birds become emaciated. Growth rate in broiler chicks is slowed and severe cases you can lose the whole bird (Hungerford 1969; Hofstad et al., 1972; Arnal 1975; Buxton and Fraser

1977; Tripathy et al., 1974)
This paper highlights the incidence of fowl pox in Morogoro township.

MATERIALS & METHODS.

Information concerning the disease for the last ten years was obtained from Morogoro regional and district livestock development offices. A questionnaire was distributed to poultry keepers to obtain the current prevalence of fowl pox disease in their flocks. Serum samples were collected from clean and infected flocks and stored at -20^0C until required. Scabs from clinical cases were also taken for viral isolation and identification.

10% (W/V) of scabs was ground in sterile saline and inoculated into fertile chicken eggs at 12 days of incubation as described by Goodspasture and Woodruff (1931), Goodspature et al. (1932), and Pandey et al. (1975). Two percent agarose was prepared for immunodiffusion test to detect the presence of antibodies in the serum samples as described by Dhingra and Dhilou (1971), Schmidt (1969), Uppal and Milahantan (1974).

RESULTS

Information gathered from the regional and district livestock offices indicated that fowl pox in Morogoro township was on the decrease despite the increase in the number of birds reared.

Table 2 shows the number of birds affected as recorded in the regional and district livestock offices.
Information collected by questionnaire from individual poultry farms showed that the prevalence was 44.6% and that the disease was reported to occurred more frequently during the rainy season i.e February to June. This coincides with the increase in mosquito the number of which are the vectors of fowlpox.

Table 1 Poultry population and the prevalence of fowl pox in Morogoro District from 1977 to 1981

Year	Population	Prevalence Rate %
1977	71,724	1.8%
1978	41,523	1.7%
1979	91,014	1.0%
1980	117,600	0.3%
1981	116,760	0%

Birds below five weeks of age were more susceptible than older birds showing mortality rate of 30% as compared to 7.5% of the 11 to 15 weeks old birds. Broiler breeds showed both higher morbidity and mortality rates as compared to layers.

There was no relationship between occurrence of the disease and the source of birds. Likewise, there was no relationship between incidence and source of feed. Many of the outbreaks recorded occurred mainly in the birds kept under deep litter system.

The virus was isolated and identified from five clinical cases. Pock lesions developed on the chorioallantoic membranes of chicken embryonated eggs on the seventh day after inoculation. The serological survey was inconclusive as the test was found to be insensitive.

DISCUSSION

Although the data collected from regional Livestock and District Livestock Development Offices indicated that fowl pox incidence was decreasing despite the increase in poultry population, the findings from

individual farms did not support this finding. The disparity in the two results may be due to lack of follow up by Regional and District offices on outbreaks. In 1981 there were at least five outbreaks involving about 500 birds which were not recorded by the Regional Livestock Development Offices.

Local breeds of birds which seem to be more resistant to the virus should be kept away from exotic breeds since they are resistant but may also be reservoirs of the fowl pox virus (Khogadi 1972; Mathew 1972). It is the aim of the authors to develc a sensitive test like ELISA to carry out serological survey to determine the degree of resistance in the flocks found in Morogoro township.

Table 2: Prevalence rates of fowlpox in Morogoro District between 1972 and 1982

Year	Population of birds	Population at risk (A)	Number of birds affected (B)	Prevalence rate
1974	–	–	126	
1975	–	–	–	
1976			85	
1977	71,724	7,555	136	1.8
1978	41,523	14,411	245	1.7
1979	91,014	15,169	152	1.3
1980	117,600	19,600	70	0.3
1981	116,60	–	0	0.0
1982				

It is important for new poultry keepers to be aware that fowl pox is endemic in the region and that good management is paramount for excellent results.

Furthermore, Morogoro is mosquito infested especially during the rainy months of February to May. Mosquitoes are known to be vectors of fowl pox virus (Lee, 1958; Da Massa, 1966). Therefore vaccination of chicks should be coupled with good hygiene (Tripathy and Hansen, 1975).

Also, it will be interesting to study the factors which make the local breeds more resistant to the fowl-pox (Chiharu, 1973; Khogadi, 1972;) and whether such factors can be introduced in te exotic breeds through cross-breeding.

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