Preliminary Findings on the Carrier Status of Pasteurella multocida in Farmed and Traded Healthy-appearing Scavenging Indigenous Chickens and Ducks in Kenya

Abstract

One hundred and twenty-three indigenous chickens and 24 ducks reared under free range scavenging system were examined for the carrier status of Pasteurella multocida. Both the oropharyngeal and cloacal swab samples were examined for the presence of the organisms by means of mouse passage and inoculation into blood agar. Of these, 55 chickens and 24 ducks were from different smallholder farms in Nairobi, and Machakos districts, 41 chickens were from various slaughterhouses in Nairobi, while 29 were market chickens obtained from various market centers in Nairobi. The traded (market and slaughter) chickens all originated from rural districts in various parts of the country. From the 123 chickens examined, Pasteurella multocida subspecies were isolated only from four birds. The isolates were recovered from the traded chickens only. Pasteurella organisms were not from any of the 24 ducks. On the basis of biochemical characterization, the organisms were differentiated as P. multocida multocida (4/4), P. multocida septica (1/4) and P. multocida gallinacea (2/4). This study suggests that healthy traded poultry could be carriers of Pasteurella multocida. It describes the first report of Pasteurella multocida isolation from indigenous birds in Kenya.

Introduction

Pasteurella multocida is the causative agent of fowl cholera (Christensen & Bisgaard, 2000). It comprises of three subspecies, Pasteurella multocida multocida, Pasteurella multocida septica, and Pasteurella multocida gallinacea (Muters et al., 1985). These organisms affect many food animals and are opportunistic human pathogens (Bisgaard, 1993, Frederiksen, 1993, Mbutitha et al., 2001). Sources of new P. multocida infections and subsequent development of fowl cholera in poultry flocks is still uncertain inspite of extensive research carried out on this species (Muhairwa et al., 2001). Pasteurella multocida has been demonstrated in free scavenging poultry in farms in Tanzania (Muhairwa et al., 2001).

In Kenya there is very little documentation on Pasteurella multocida infections, other than one case report in a grey parrot by Miringa (1975). Suspected cases of fowl cholera have been reported in other African countries (Anonymous, 2002, Muhairwa et al., 2001). However the clinical signs, macroscopic and microscopic lesions associated with Pasteurella multocida infection are not pathognomonic and can be confused with other upper respiratory tract infections (Mbutitha et al., 2001, Rimler & Glisson, 1997). Therefore recovery of the organisms from sick birds would confirm the disease.

Little is known about the prevalence of Pasteurella species infections in healthy-looking farmed and traded birds in Kenya. This paper reports the carrier status of Pasteurella multocida in farmed and traded indigenous chickens and ducks in some districts in Kenya.

Materials and Methods

Birds from farms

Indigenous chickens were sampled from 4 farms in Embakasi division and 5 farms from Athi river division. The ducks were sampled from two farms located in Embakasi division. These farms reared only indigenous birds. In all, 53 indigenous chickens and 24 ducks were sampled. The chicken flock sizes ranged from 20 to 74 birds per farm. Six birds were purposefully randomly sampled from each chicken farm. In the two duck farms, the bird population was 18 and 85 birds respectively and 12 different birds were purposefully randomly sampled from each farm during this study.