Detection of avian influenza virus and Newcastle disease virus from tracheal and cloacal swabs of backyard poultry in Tripoli – Libya

Abstract:
In Libyan state, the history of backyard poultry rearing goes back to several lapsing decades in which the human life style was still in its simpler forms. The uncontrolled rearing of backyard poultry has resulted in catastrophic spread of viral diseases in many countries throughout the world. In this study a new questioner by Mobil software “EpiCollect plus” was used for the first time in Libya. It is an easy program to use and can store information about all farms and samples in the phone during sample collections at field “without internet connection”, then send to the computer via the network. The surveillance of backyard poultry for both avian influenza type a virus (AIV) and Newcastle disease virus (NDV) has covered four main geographical regions throughout the greater city of Tripoli. The surveillance was fulfilled through testing the cloacal and tracheal swabs for the presence of viral antigens using the direct ELISA for AIV and RT-PCR techniques for NDV. A total number of 500 samples from non-vaccinated backyard poultry flocks were collected from different geographical locations within the area of Tripoli (Qasr Ben Ghashier, Alsawani, Souq Al-Gomaa, Tajourah, and Einzara). Samples were collected mainly from local breed chicken (244) and native ducks (6). Results have indicated that incidences of infection with AIV in backyard poultry populations during the summer season 2013 were 0%. During early winter 2013, the AIV has been detected in 11 out of 90 samples with an incidence of 12.2%. Among the 11 positive samples: 3 samples were from Souq Al-Gomaa, 4 from Tajourah, 1 from Qasr Ben Ghashier and 3 from Al-sawany. In contrast to AIV during summer 2013, NDV were detected from the backyard chickens, 104 out of 154 backyard poultry were found positive for the virus (67.5 %). Positive samples were distributed over various regions
into: 14 from Tajourah, 60 from Qasr Ben Ghashier and 30 from Al-sawany. In the early winter 2013, 21 out of 90 samples were positive for NDV (23.3%). Among the 21 positive samples: 3 were from Tajourah, 13 were from Qasr Ben Ghashier and 5 from Al-sawany. It is obvious that the southern region is the most affected regions within the greater Tripoli. In the Greater Tripoli, many local districts are well known for their dense distribution of commercial poultry farms as well as backyard poultry rearing. Most of poultry farms in Tripoli are found in Tajourah, Qasr Ben-Ghashier, and Al-sawany. Thus, it is expected to face the problems of avian diseases with special concerns to viral diseases such as AI and ND among both commercial and backyard populations in such districts.