

Comparison Between Fluorescent In Situ Hybridization (FISH) and Culture Method in the Detection of *Pasteurella multocida* in Organs of Indigenous Birds

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Abstract

A total of forty-eight indigenous birds were intratracheally infected with *Pasteurella multocida*, paired and sacrificed at specified times. Seven organs from each of the four pairs were swabbed for culture and tissues taken for FISH test to detect the presence of the bacterium in these birds. Oropharyngeal and cloacal swabs were collected, for culture method and bacteria characterized by biochemical tests. While for FISH test, tissues were processed for histology after fixation in formalin for 24 hours and later preserved in 70% alcohol before in situ hybridization test. At any sacrificial time between 1 hour and 14 days post inoculation *P. multocida* FISH signals were observed in 47 to 75% while the bacterium was isolated on culture in 7 to 50% of the organs of the indigenous birds. During the same period four (lung, trachea/oropharynx, liver and spleen) organs on FISH test and one (trachea/oropharynx) on culture were throughout positive for *P. multocida*. The large intestine/cloaca and pruney gland showed *P. multocida* FISH signals at various times but were negative for the bacterium on culture. Both tests were positive for *P. multocida* immediately after inoculation. FISH signals were found in a decreasing manner in the lung, trachea/oropharynx, liver, spleen, caecal tonsils, large intestine/cloaca, and pruney gland. On culture, the bacteria were found in a decreasing manner in the trachea/oropharynx, lung, spleen, liver and caecal tonsils. Most cultured isolates were made between 1 - 24 hours, few and intermittent ones thereafter, and none at all after the 10th day post infection. These results show that FISH test is more sensitive than the culture method for detection of *P. multocida* in tissues of infected birds.