

News & Comments

Numerous Fungi were Discovered, and All were Vulnerable to Nystatin Antifungal Agent

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Different bird species, including chickens, turkeys, ducks, geese, swans, pigeons, peafowl, ostriches, pheasants, and other game birds, are included in the poultry sector. To get the highest level of production, it is essential to raise birds under an intense management system that involves feeding, tightly packing, and housing them in small spaces.

Numerous fungus species have been discovered to be pathogens and pollutants in feed and poultry habitats. By using mouldy litters or introducing day-old chicks that are harbouring conidia from hatching facilities, fungi could contaminate poultry farms.

In confined animal housing, microbial agents from feed, litter, excrement, and other elements are easily accumulated and are a major source of environmental contamination. Using morphological and molecular identification techniques, the goal of the current study was to identify the presence and kind of fungal contaminants in various areas in a poultry environment. It also investigated how the detected fungi responded to certain common antifungal medications.

The study was carried out at Enugu State's Nsukka local government in southeast Nigeria. For the investigation, ten poultry farms were chosen at random. Six were broiler farms, and four were layer farms. Samples were taken. To collect the fungal biomass, the swabs were repeatedly rubbed and rolled across a sampling area of roughly 10 cm. Descriptive statistics were used to assess the data, and percentages were then presented.

The ten poultry farms yielded a total of 244 fungal isolates, which were then identified. Of them, 132 fungal isolates came from the broiler farm and 112 fungal isolates came from the layers farm. The poles and window nets in both the layers and broiler farms had the highest isolation rates of 15.2% in each of the areas studied. Following this were the roofs, feeders, floors, and drinkers, while the walls and doors each had an isolation rate of 11.5%. In contrast to nystatin, the other fungus isolates from *Penicillium*, *Mucor*, *Rhizopus*, and *Rhodotorula* were resistant to fluconazole and voriconazole.

Six different fungus genera were found, and each of them has been known to frequently cause illness in chickens. Molecular and morphological identification methods agreed. All ages and varieties of fowl, including turkeys, are susceptible to aspergillosis, particularly stressed, underfed, and immune-compromised animals. Additionally, because *A. fumigatus* spores are resistant to avian alveolar



macrophages, they can produce *Aspergillus granuloma* when inhaled by birds. According to reports, *A. flavus* plays a larger role in mycotoxicosis because it contaminates poultry feeds and produces mycotoxin (aflatoxins), which causes a high rate of mortality in poultry.

The highest rates of fungal isolation in this investigation were found in the window nets, poles, doors, and roofs, which was not a surprise. This is because certain sites are fixed permanently within chicken farms and have not been cleaned or changed throughout the farm's operations. The isolated fungi displayed varying degrees of antifungal drugresistance.

JOURNAL REFERENCE

A.C. Mgbeahuruike, K. Aliyoo, M. Karlsson and K.F. Chah, 2020. Identification, antifungal susceptibility and phylogenetic comparison of fungi in poultry environment in Nigeria. *Int. J. Poult. Sci.*, 19: 548-556.

KEYWORDS

Antifungal agents, fungi, layers farm, poultry, fungal contamination

