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How a Mold Toxin Effects Egg Production

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HOW A MOLD TOXIN EFFECTS EGG PRODUCTION

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Some twenty years ago farmers in the State of South Dakota while feeding moldy soft corn to cattle were curious to use the same feed to their chickens. As per the findings of Indiana workers, a 30% level of molded corn was recommended as a feasible inclusion in the layer diet. Today, however, we hesitate to recommend moldy corn because of the fact that problems like hemorrhagic conditions of leg muscles, livers and kidneys and other evidences of toxicity have been traceable to the use of molded feed stuffs. The tragic losses experienced by turkey growers of England in the early 60's were traced to molded peanut meal, shown subsequently to contain aflatoxin, a most powerful poision.

Since then many details of microbiology, chemistry and toxicology of aflatoxin have been worked out. In the work here discussed, a study was conducted with ochratoxin, a newly isolated toxin of the fungus Aspergillus ochraceus, to determine its toxicity for laying pullets.

SCWL DeKalb 131 pullets were fed 0, 1, 2 and 4 mg of ochratoxin per kilogram of diet (1.2 and 4 parts per million) from fourteen weeks to one year of age. Each diet was fed to two replicates of twenty-four pullets each.

With increasing levels of ochratoxin, the pullets became very emaciated. The morbidity and mortality were considerably higher for all treated groups compared to the controls. Delayed sexual maturity and a lower rate of egg production were observed in the 1 and 2 mg treated groups. With the 4 mg

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level, most of the pullets that survived had not laid eggs through one year of age. In the latter part of the experiment, egg size was observed to be reduced in proportion to the ochratoxin level fed. Egg shell quality was poorer in a similar pattern. Ochratoxin reduced the hatchability and the subsequent performance of hatched chicks through the first two weeks of their life.