

Research Note

CAPILLARIA ANNULATA AND HETERAKIS GALLINARUM INFECTIONS IN GUINEA FOWL IN PUERTO RICO—A CASE REPORT^{1, 2}

Guinea fowl³ (*Numida meleagris*) originated in Africa, and was first domesticated many centuries ago by the Greeks and Romans for use as a table bird. At present, many farmers in Puerto Rico raise them on a small scale in their backyards together with native chickens (*Gallus gallus*).

To domesticate the guinea fowl, the common practice among Puerto Rican farmers is to raise the keets with chicks in brooders and release them together in the farm yard as soon as they are strong enough to fend off predators such as rats and mongooses. No special problem of parasitic infections seems to occur among the guinea fowl and chickens under these conditions, because they have rather extensive areas to move around; should one bird get parasitic infection, usually light and unnoticed, the possibility of transmitting the infection to the other birds is remote.

Lately, raising guinea fowl on a commercial scale has been started by some Puerto Rican farmers due to the fowl's high market price and the associated profit-earning possibilities. Guinea fowl meat is served as a special delicacy in many hotels and restaurants in the San Juan metropolitan area, and the demand for the choice, delicious, and finely flavored meat is ever-increasing.⁴

This is a case report of fatal infections by *Capillaria annulata* and *Heterakis gallinarum* in guinea fowls raised on commercial scale. In May 1977, a farmer from Carolina, P.R., brought a pair of adult birds to the Department of Animal Husbandry, Agricultural Experiment Station, Río Piedras, P.R., and reported that about 100 had died in the previous 2 mo and most of the 200 remaining birds had ruffled feathers, diarrhea, and drastically-reduced egg production. The clinical picture included partial anorexia for several days, chronic depression, weight loss, general weakness, and a high death toll.

The guineas were kept in a ½-ha lot of slightly-rolling terrain partially covered with pangolagrass, traversed by a brook clogged with weeds, tin

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³ Van Hoesen-Stromberg, Guinea Fowl, 1975. Stromberg Publishing Co., Fort Dodge, Iowa.

⁴ Personal communication from Mr. Rafael Acevedo, guinea fowl raiser, Carolina, P.R.

cans, and plant debris, and enclosed by a Cyclone⁵ fence. Guineas roosted on acacia and other types of trees on both sides of the brook. Commercial chicken feed and fresh water were available to the flock at all times in feeders and waterers housed in a small shed located in the center of the range. The shed was amid decaying lumber. Areas of the range near the brook were wet and sometimes muddy, and earthworms,⁶ the intermediate hosts of *C. annulata*, were seen in large numbers when rocks and decaying plant matter were lifted. Besides the 200 unhealthy-looking guineas, about 15 to 20 robust native chickens were kept in the same range.

Physical examination of one of the two guineas revealed an emaciated and unkempt bird with matted feathers around the vent, and a rectal temperature of 41.5° C. Microscopic fecal smear examination revealed numerous *Capillaria* and some *Heterakis* eggs. The two animals were euthanized. The crops showed no apparent morphological changes, although there were many *Capillaria* present. The worms were not counted because they were destroyed when the mucosa of the crops were scraped. The mucosa of the gas-filled caeca was thickened and many petechial hemorrhages were observed. A total of 481 *Heterakis* worms were collected from the first bird and 60 from the second. The long, thin worms collected from the crop were identified as *Capillaria annulata* and the short and thick worms recovered from the caeca were *Heterakis gallinarum*.

Nine guinea fowls and a pullet were subsequently brought to the laboratory at different times. The guineas were given varying doses of Tramisol (*L*-Tetramisole) and phenothiazine. Five died 24 hours after treatment, and four survived. When the survivors were sacrificed 7 d posttreatment, many living *C. annulata* and *H. gallinarum* were recovered. The young robust pullet was euthanized and necropsied. Many *C. annulata* and *H. gallinarum* were found, but no apparent morphological changes were observed in the crop, the caeca or the carcass.

Under the management conditions described in this paper, guinea fowls were very susceptible to *C. annulata* and *H. gallinarum*, but not so the chickens. Effective chemotherapeutic agents against *C. annulata* and *H. gallinarum* are either unavailable or difficult to secure locally, and tedious to administer. Most drugs may cause a marked reduction in egg production or even death.

The experience gained in this case, leads us to recommend that guinea fowl commercial producers must observe a very strict cleanliness and an

⁵ Trade names are used in this publication solely for the purpose of providing specific information. Mention of a trade name does not constitute a guarantee or warranty of equipment or materials by the Agricultural Experiment Station of the University of Puerto Rico or an endorsement over other equipment or materials not mentioned.

⁶ Monnig, H. O., 1949. *Veterinary Helminthology and Entomology*, The Williams and Wilkins Company, 3rd Ed, Baltimore, Maryland.

active sanitation program. Birds should be raised in an easily-drained range divided into several plots to facilitate systematic rotation, and planted with the recommended forage for the area. Overstocking must be avoided, range rotation practiced, and guineas should never be raised together with chickens, turkeys, or any other related fowls.

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