

T. A. Yazwinski and C. A. Tucker. Poultry Helminthiasis or, Every Bird gets the Worm. A paper presented at the North Carolina Turkey Industry Days Conference. Sept. 19 & 20, 2007. Wilmington, N.C.

Every farm animal is subject to parasitism; symbiotic relationships wherein we share our food with others before we can get it. In the case of the commercial turkey, the primary parasites are coccidia and *Ascaridia dissimilis*. Although commercial turkeys host only one worm species, the worm's population in the host exists in 4 discrete sub-populations; second, third and fourth stage larvae and adults. *Ascaridia dissimilis* is extremely tenacious both in the environment as well as in the turkey. Eggs persist in the house for years. Worm burdens in the bird are extremely responsive to host immune status and challenge dynamics.

Three parasiticides are "commonly" used in commercial turkey production: piperazine, levamisole and fenbendazole. In numerous studies at the University of Arkansas, piperazine has been shown to be non-efficacious in decreasing ascarid burdens. A few adult worms may be passed after treatment, but the vast majority of the worms remain in the bird after treatment. We are in the midst of evaluating levamisole (17.6 mg/kgBW) at the current time. In the treatment of natural infections in Michigan, levamisole was demonstrated to be 50-80% effective; levels of activity insufficient for effective worm control. Side-by-side with levamisole and in many other studies, fenbendazole at 10 ppm in the feed has consistently been demonstrated to be > 98% effective for the treatment of *Ascaridia dissimilis*. Reflective of worm removal, birds treated with fenbendazole display improved feed efficiency and rate of gain.

On occasion, commercial turkeys may be accidentally infected with the chicken cecal worm, *Heterakis gallinarum*. The turkey quickly kills the worm, but prior to expulsion, the worm releases the protozoa *Histomonas meleagridis* in the cecum and blackhead disease ensues. In addition to other factors, we have shown that the source of *Heterakis* is a determinant in the degree of severity of blackhead in the turkey.

Worms are certainly not the major obstacles to profitable turkey production, but ascarids most certainly cause lowered feed efficiencies, weight gains and bird performance. Future studies at the University of Arkansas will focus on worm control as well as investigate the detrimental effects of ascaridiasis specific to immune competence and gut function.