



Dewormer Resistance

on farms in the Mid-Atlantic area

Recently, research was conducted at Delaware State University to determine the most prevalent gastrointestinal worms of sheep and goats in the mid-Atlantic region of the U.S., and to determine which dewormers were effective or ineffective against parasites in this region. The states tested included Delaware (DE), Maryland (MD), Virginia (VA), West Virginia (WV) and Pennsylvania (PA). Thirty-three farms in this region (20 goat; 13 sheep) were tested for dewormer resistance with the larval development assay performed at Dr. Ray Kaplan's laboratory at the University of Georgia. This laboratory also conducted the larval identification to determine what parasites were on each farm. Fecal samples were collected rectally from at least 10 goats or sheep on farms in the mid-Atlantic and then shipped overnight to the University of Georgia for both tests. The *Haemonchus contortus* (barber pole worm) was the most common parasite found on 84% of the farms tested. This was followed by *Trichostrongylus colubriformis* (bankrupt worm). This finding suggests that use of the FAMACHA scoring system may be an effective means to selectively treat animals in this region because it measures the degree of anemia caused by the barber pole worm.

On all farms tested, benzimidazoles (white drenches, Safeguard®) were ineffective on 97% of farms tested. There was one exception where parasites on one farm only had

a low level of resistance to benzimidazoles. This test did not include Valbazen®, which is also a benzimidazole. Resistance to ivermectin (Ivomec®) was reported on 79% of farms tested. Resistance to the related drug, Moxidectin (Cydectin®), was reported on 48% of farms tested. The dewormer that still had some effectiveness was levamisole (Prohibit™) with only 27% of farms showing resistance to this dewormer.

The amount of resistance found is alarming; some of these farms have resistance to all three classes of dewormers. Therefore, it is essential to implement selective treatment techniques to prevent the further development of dewormer resistance. It is advisable that all producers determine the level of resistance in their own herd. This will allow you to choose a dewormer that is most effective to be included in your deworming program. This knowledge in an integrated parasite management approach (FAMACHA, fecal egg counts, pasture management, etc.) can allow one to more effectively control parasites on their farm.

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Pictured above: Elizabeth Crook (graduate student) collecting fecal sample for dewormer resistance testing on that farm.

This technical report was written by Elizabeth Crook and edited by Dr. Jackson-O'Brien

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