

Minka Farms Parasitology Report Spring 2018

(A certified organic Grass-fed Beef producer)

[Report for Selective VMP 991 135]

History:

Minka Farm is located in Efland, NC and is owned by Brian Harry and Dr. Kimberly Harry. Dr. Harry stated that Minka Farm's goal was to make a profit and provide healthy food to its customers. Our visit to Minka Farm focused on their beef cattle herd but they are also a home for sheep, goats, horses, donkeys, chickens, guineas, cats, pigs, and dogs. The cattle herd is about 100 head and made up of angus crosses. The 100 head are made up by 15 calves, 21 yearlings, and about 64 cows. In general, the only animals entering the herd are new bulls every two years. Prior to coming to the farm, they have a breeding soundness exam. They are then quarantined in a separate pasture for 30 days and tested for BVD and Johne's disease. New animals are not dewormed. The farm selects for breeding based on frame size, in which a size 5 is desired. Once the calves are weaned, which occurs in January, they are separated in a pasture for about 4-5 months when they can then be returned to the pasture with the other cows.

The cattle are fed on pasture from the spring through January. Then, they are moved to a sacrificial pasture until spring where they are supplemented with hay. Throughout the year, they are provided with a mineral supplement that contains pass through fly control agent from Southern States. The forage is a mixture of tall fescue, clover, and other native grasses.

Rotation time is determined by the height of the grass. The average height of the pasture forage is about 3 inches when the animals are moved. Normally it takes about 3-5 days to reach the 3 inch parameter. This rotation schedule occurs from April to January when the threat of transmission is highest. Since Minka Farms does have other animals on its pastures they make sure the cattle are rotated through the small ruminant grass pasture but otherwise the cattle are maintained in their designated pastures. There are about 20 pasture lots, each 5 acres, which are all separated from one another by fences.

During our visit, Dr. Harry did not have any concerns about her cattle but their small ruminants have a high Haemonchus load leading to high FAMACHA scores and they lost one kid last year. Dr. Harry tries to FAMACHA score her small ruminants once a month but due to difficulty in restraining them she does it as often as she can but mainly determines their parasite load based on BCS. If a small ruminant consistently has a high FAMACHA score they are culled. **When the cattle present with symptoms indicative of disease Dr. Harry does not hesitate to intercede with antibiotics or pain medication but will let the slaughter plant know that the animal in question is not antibiotic free.** The cattle are kept for about 30-36 months and are then sent to the slaughter plant. To date, Minka Farms has not been docked for anything, except a tumor near the rumen.

The herd, except new calves, is vaccinated for respiratory diseases and black leg in the spring with a killed vaccine. In the fall (at weaning), all cattle are vaccinated for blackleg. The fly control use is based on the need. In the past, they have used ear tags, predator flies, pass through in mineral mix, and pyrethrin sprays if the flies are really bad. **The herd received its last dose of anthelmintic in 2012 and since then has not received any anthelmintic due to low parasite load burden and to avoid parasite resistance. Minka Farm's feces are collected once every year by NCSU CVM students and the burden of parasite has decreased with each year. This demonstrates a resistance to the parasites as the cattle age.** Our time at Minka farms was spent collecting feces from the beef cattle herd and the chickens.

Results:

Table 1: Results for fecal samples from the yearling pasture for ova identified by fecal flotation at 10x. NOS represents No Ova Seen and Unk represents unknown.

Cow ID	Strongyle Type EPG	Coccidia	Strongyloides /Nematodirus	Capillaria
D21	11.5	NOS	NOS	NOS
E101	42	NOS	NOS	+
E103	60	+	NOS	NOS
E105	47	++	NOS	+
E107	55.5	+	NOS	NOS
E109	43	+++	NOS	NOS
E111	39	NOS	NOS	NOS
E114	121	+	NOS	NOS
E115	24	+	NOS	+
E116	52	NOS	NOS	+
E118	72	NOS	NOS	NOS
E119	129	+	Nem +	NOS
E121	59	+	NOS	+
Unk. 1	18	++	NOS	+

Table 2: Results for fecal samples from the large pasture (mixed ages and sexes) for ova identified by fecal flotation at 10x. NOS represents No Ova Seen.

Cow ID	Strongyle Type EPG	Coccidia	Strongyloides/ Nematodirus	Capillaria
C3	0	+	NOS	NOS
C11	1	+	NOS	NOS
D15	0	NOS	NOS	NOS
U8	0	NOS	NOS	NOS
Y14	0.5	NOS	NOS	NOS
Z36	0	NOS	NOS	NOS
Z114	114	+	NOS	NOS

Table 3: Results for chicken fecal samples from pasture containing horses and chickens for ova identified by fecal flotation at 10x. NOS represents No Ova Seen and Unk represents unknown as fecal material was collected from the pasture at random.

Chicken	Coccidia	Capillaria	Ascaridia	Small Nematode Egg
Unk. 1	+	NOS	+	NOS
Unk. 2	NOS	++	NOS	NOS
Unk. 3	NOS	++	NOS	+
Unk. 4	NOS	++	+++	NOS
Unk. 5	+	+	+	NOS
Unk. 6	NOS	+++	+++	NOS
Unk. 7	NOS	+	+	NOS
Unk. 8	NOS	+	+	NOS
Unk. 9	NOS	+	NOS	NOS
Unk. 10	NOS	+	NOS	NOS
Unk. 11	NOS	NOS	NOS	NOS

Discussion:

The goal of this year's sampling was to monitor overall cattle herd health. We wanted to pay close attention to the yearlings' fecal egg counts, as they have been high in the past. Both the yearlings and the rest of the herd had good body condition scores and no reportable health concerns. The yearlings had loose stool, which is attributable to the very lush pasture they are foraging on and is not of concern.

For the yearlings, the strongyle-type egg count averaged 46 eggs per gram of fecal material (EPG). The median egg count was 47 and there were two outliers of 121 and 129. Even these outliers are well below the cutoff for treatment of 200 EPG. We had a comprehensive collection of 13 samples from the 21 yearlings. Last year's collection showed a much lower average of 9, but had a much smaller sample size of 7 and two major outliers, one of which was above the typical recommendation to treat (222 EPG). *Coccidia* oocytes were found in about three quarters of the fecal samples (9/13) and *Capillaria* in about half of the samples (6/13). All *Capillaria* infections were minor and most *Coccidia* infections were minor. However, none of the yearlings show clinical signs of coccidiosis or capillariasis, which would include weakness, weight loss, and anorexia.

The larger pasture with mixed age cows, calves, and bulls showed very low levels of enteric parasites in the cows, with one exception. In cow Z114's fecal sample, we identified 114 epg of strongyle-type ova and a low level of *coccidia* oocytes. The sample we had was run twice to confirm this higher ova count. We would recommend re-running a fecal, particularly if Z114 shows any clinical signs of parasite infection. Due to the age of this cow, we would expect her to have immunity to strongyle-type parasites and an infection of this degree could suggest immunosuppression.

Minka Farm's pasture rotation allows the pasture lots to rest for several months in between, demonstrating a very well managed herd. This unique rotation schedule reduces parasite burden because the ova on pasture are not provided ample time to develop into infective larvae before the cattle transition to a new pasture. The EPG counts this year were tightly grouped. Considering the warm winter and the yearlings' age, this is acceptable as normal. We would recommend continued monitoring for signs of *Coccidia* and *Capillaria* pathogenicity, such as weight loss, anorexia, and weakness. *Coccidia* and *Capillaria* EPGs should be carefully monitored next year in E group cows and next year's yearling. Once the grass grows again, it would be ok to move the older cows and bulls onto the yearling pastures as they should be old enough to have immunity to the strongyle-type parasites.

In addition to collecting cattle feces, we obtained 11 chicken fecal samples to observe their parasite load. The source of the fecal material obtained is unknown because random piles of feces were sampled within the chicken pasture. However, *Capillaria and Ascaridia* were found in most of the samples. Only one nematode egg was discovered and Coccidia was only found in two samples. *Ascaridia* is hard to differentiate from *Heterakis* unless a necropsy is performed, thus if the chicken is not displaying symptoms of an enteric parasite it is most likely *Heterakis* or the *Ascaridia* load is low. Minka Farm's chickens were sampled back in Spring 2016 and were positive for *Ascaridia* and Coccidia. In general, parasites in chickens are not of concern unless they are showing clinical signs such as diarrhea or weight loss. The chickens appeared to be healthy and Dr. Harry did not report any previous or current health problems. At this point we do not recommend Minka Farms to do anything different with the management of their chickens.