

# Minka Farm Parasitology Report April 2017

By Melanie Runkle, Kathryn Hamilton, Margie Gurganus, and Russell Nichols

## History

Minka Farm is a privately owned, Animal Welfare Approved beef cattle farm in Efland, NC. The farm has 91 head of cattle, meat goats, chickens, sheep, donkeys, horses, dogs and cats. The cattle range in age from 2 month old calves (20 born in the 2017 season) to 9 year old cows. There are 2 bulls on site that are located on a separate pasture away from the herd. One new bull is added every two years. Before being introduced to the herd during the breeding season, the new bull is quarantined for 30 days. All cow replacements are raised on the farm. The breeding season spans the months of May, June, and July. During this period, the 91 head of cattle are split into three groups of approximately 30 cows each.

The farm is comprised of approximately 20 pastures of varying size that the cattle are rotated through according to the height of the pasture grass. Cattle are rotated to a new pasture before the pasture grass gets below 3 inches in height and pastures are rested for at least one month before use. The grass height and cattle are monitored daily. Normally, the cows stay on the pasture for less than one week, with the upper limit being 1.5 weeks. The exception to this, is during the winter months when the cattle remain on one sacrifice pasture for 2.5 to 3 months. The herd is rotated more often when all of the cows are in together as opposed to when they are separated into breeding groups. The pasture is seeded with fescue and clover every 3-4 years. The only issues noted with seeding the pasture with fescue are occasional coat problems, including the loss of one cow's switch. No necrotic issues have been noted.

In addition to pasture grass, the cows are fed a mineral supplement containing Altosid which helps with fly control. Other fly controls used in the past include ear tags. All of the cattle are vaccinated for Blackleg (*Clostridium chauvoei*) twice a year in the spring (cows only) and fall. The cows, minus the calves, are also vaccinated once a year in the spring for common cattle respiratory diseases (CattleMaster).

Minka Farm has not dewormed their cattle for three years, but previously they used Valbazen. They have fecal egg counts performed once or twice a year by NC State students, but cannot use this information in their breeding decisions because the data does not correspond to individual animals. Instead, breeding decisions are based on frame score and history of dystocias. BCS is recorded annually, with cows only bred at a BCS of 5 or 6.

Since the cattle at Minka Farm show no clinical signs of illness, we performed the fecal tests (via the double centrifugation technique) as a surveillance test to quantify the strongyle-type eggs in the fecal matter that indicate infection with *Ostertagia* and *Cooperia* species. We paid particular attention to the cows with D tags, as last fall they had high fecal egg counts for strongyle-type eggs. We also recorded the presence of coccidia, *Capillaria sp.*, and *Strongyloides sp.* in the herd.

**Results-**

<b>Cow ID</b>	<b>Age</b>	<b>Strongyle Type EPG</b>	<b>Strongyle Type EPG from 12/16</b>	<b>Coccidia</b>	<b>Strongyloides</b>	<b>Capillaria</b>
B54	3	1		-	+	-
B73	3	1.5		-	-	-
B77	3	0		-	-	-
B83	3	1.5		-	-	-
C3	2	1.5		-	-	+
C6	2	1.5		-	-	-
C15	2	0.5		-	-	-
C21	2	0.5		-	-	-
C27	2	6		-	-	-
D5	1	144.5	481	+	-	+
D10	1	16	160	-	-	-
D11	1	1		+	-	-
D14	1	4.5	2	-	+	-
D19	1	23	229	-	-	-
D25	1	222		-	-	-
D27	1	1.5		-	-	-
E105	<1	0		-	++++	-
W4	8	3.5		-	-	-
W26	8	0.5		-	-	-
X12	7	5.5		-	-	-
X6	7	1.5	2.5	-	-	-
Y8	6	2.5		-	-	-
Z6	5	0		-	-	-
Z22	5	0		-	-	-
Z32	5	1	1.5	-	-	-

## **Discussion-**

The focus of this year's testing was on the "D" calves. This past fall, they had higher strongyle-type egg counts than have been noted in previous years for calves of 6 months old. At this sampling, the D calves are approximately one year old. They were in good physical condition with a healthy BCS and a healthy coat, showing no clinical signs of parasitism.

Overall the number of strongyle-type eggs decreased markedly in the D calves. Some calves' fecal egg count numbers dropped as much as tenfold. However, there was one D calf that had a high strongyle-type egg count of 222. This decline in fecal egg count is most likely due to an age-related immunity to parasitic nematodes. This immunity develops as the calf ages until the immunity is at full strength by the time the cow is two years of age. Two D calves also had coccidia oocysts present in their feces, but at a very low level that would not be pathogenic to the animal. We believe there is no need to deworm the D calves because their fecal egg counts have dropped due to their acquired immunity and the calves are not showing clinical signs of parasitism.

The rest of the cattle had very low fecal egg counts of strongyle-type eggs. The coccidia oocysts in the feces of two of the cows are not concerning because they are not present at a high enough level to cause any pathogenesis. Clinical signs associated with a coccidia infection include, weakness, weight loss, and anorexia. The same is true of the intensity of *Capillaria sp.* in the feces. Lastly, the *Strongyloides sp.* are also not present at a high enough number to be concerned about the entire herd, however, E105 had an extremely high number of *Strongyloides sp.* in its feces. This is probably due to transmission of the parasite to the calf through its dam's milk. The clinical sign of *Strongyloides sp.* infection is diarrhea in the young calves, so we recommend to closely observe the calves for clinical signs of parasitism.

Overall, the rotational grazing and pasture management strategy that Minka Farm employs is an effective parasite control measure that is reflected in the low fecal egg counts of their herd. This is due to the fact that the cattle are not reinfected by the parasites that they shed in their feces since they do not remain on the same pasture long enough for the eggs to develop into infective larvae. Also, even if there were infective larvae on the pasture, keeping the grass longer than 3 inches long prevents the parasites from reaching the top of the grass that the cow mainly consumes. We recommend that the farm protocol be maintained by managing grass height, rotational frequency, and resting periods. At this point, we do not recommend deworming any of the animals that were sampled. In the future, we advise Minka Farm to monitor their calves for diarrhea and selectively deworm those who present with *Strongyloides sp.* induced diarrhea.