

Reedy Fork Organic Farm Parasite Report Spring 2017

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

History: Reedy Fork Organic Farm has a herd of 200 cattle with 75-80 cows currently milking. All replacements are raised on the farm. Bulls are the only animals that are brought in from other farms once a year. The bulls are quarantined for a few days then are incorporated into the herd. The cattle on the farm are Jersey/Holstein crosses. Cattle are grouped by age into different pastures. Other than the milking cows, the cattle are kept in groups of 10-25. There are also 1600 laying hens on the farm that are not in contact with the cattle. The hens are moved to different areas periodically to rest the fields where they have been placed.

Reedy Fork produces all of its own feed. The rations fed to the cattle consist of corn, wheat, soy, and sorghum silage. Cows get 10 pounds of grain per day. Kelp is supplemented which helps with the pink eye issue. Additionally, they are supplemented with Grazier's Choice (redmond minerals, kelp, calcium, phosphorus, diatomaceous earth). The pastures are seeded with fescue. The milking cows spend a few days on each pasture, determined by weather and pasture condition, then are moved to a new pasture. Calves and heifers are not rotated as often. The only vaccination the cows receive is the pneumonia vaccine in late summer or early fall. An organic-approved dewormer drench is used periodically if clinical signs of parasitism (poor BCS, pot belly) appear. Hoof health is maintained with hoof trims and copper sulfate baths once per month. Fly control consists of an ectophyte spray and a fly vacuum in the milking parlor.

Most of the cows are dried off during the summer months and calve in the fall, with all of the cows freshening by October. The farm has decided to freshen more of the cows in the fall and winter months because it receives a premium in the winter for organic milk. The cows are milked twice a day.

Results

Cow Age Group	Strongyle Type FEC (eggs/g)	Strongyloides	Coccidia	Trichuris
Hutch 409	<25	-	-	-
Hutch 411	<25	+	-	-
Hutch 412	<25	+	+	-
Hutch 708	<25	-	+	-
Hutch 709	<25	-	-	-
Hutch 710	<25	-	-	-
2-4 mo	<25	-	-	-

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2-4 mo	25	-	+	-
2-4 mo	<25	-	+	-
2-4 mo	150	-	+	-
2-4 mo	<25	-	+	-
4-8 mo	25	-	-	-
4-8 mo	<25	-	+	+
4-8 mo	<25	-	+	+
4-8 mo	<25	-	-	-
4-8 mo	<25	-	-	-
4-8 mo	75	-	+	-
4-8 mo	<25	-	-	-
6-12 mo	125	-	-	-
6-12 mo	50	-	-	-
6-12 mo	25	-	-	+
6-12 mo	<25	-	-	-
6-12 mo	75	-	-	-
6-12 mo	25	-	-	-
6-12 mo	75	-	+	-

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10-18 mo	75	-	-	-
10-18 mo	<25	-	-	-
10-18 mo	<25	-	+	-
10-18 mo	25	-	-	-
10-18 mo	100	-	+	-
10-18 mo	700	-	-	-
10-18 mo	125	-	-	-
10-18 mo	<25	-	-	-
10-18 mo	25	-	-	-
10-18 mo	<25	-	+	-
10-18 mo	25	-	+	-
10-18 mo	75	-	-	-

Chicken Group	Ascarid	Capillaria
1	-	-
1	+	-
1	-	-
1	+	-
2	++	-
2	++	+
2	+	-
2	-	-

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3	-	-
3	++	+
3	++	+
3	++	+

Discussion

Fecal samples were collected from five different cattle enclosures representing five age groups and from the three chicken houses. The cattle fecal samples were analyzed using a McMaster technique (Due to the sensitivity limitations of the McMasters technique, results of “no eggs seen” are recorded as “<25”). The chicken samples were processed with centrifugation before characterization of the parasites. Overall body condition of the animals was good, though a couple of thinner calves with pot bellies were noted.

Strongyle-Type Eggs (*Ostertagia* and *Cooperia*):

Ostertagia (*Ostertagia ostertagi*) levels were low in all of the enclosures, with a couple of individual exceptions. Higher levels were seen in the 10-18 month old enclosure, with one individual sample at 700 eggs per gram. Counts were lower than for similar age groups in the Spring and Fall of 2016. Cattle with a fecal egg count of 100 can be dewormed, but you can also wait to see clinical signs before deworming. Therefore, the four animals with fecal egg counts of 100 or greater should be monitored for clinical signs and dewormed as needed. Clinical signs to expect with an *Ostertagia* infection are anorexia, watery diarrhea (especially in calves), bottle jaw, and decreased weight gain and bone growth. *Cooperia* can also cause enteritis, but is not as pathogenic as *Ostertagia*. Clinical signs tend to be greater in young animals, so the 2-4 month old with an egg count of 150 should be monitored more closely, if it can be identified. Since age resistance to *Ostertagia* in cattle should be reached by two years, if any cattle currently in the 10-18 month range continue to have high counts at 2 years of age, you should consider not breeding them.

Since young animals are more likely to have high worm counts and show clinical signs from *Ostertagia*, we recommend moving young cattle in a way to minimize their exposure. Cattle are exposed by ingesting larvae that live on pasture. It takes about 1 week for the development from egg to infective larvae on pasture. These larvae will be densest on pasture in the Fall after a wet summer or in the Spring after a wet winter. It would be best to move calves onto pasture that would not have many larvae. This could be done either by resting the pasture for 2-3 months or by moving the naïve calves onto a pasture that had been previously grazed by mature animals since adult animals over 2 years old have resistance to the worm and won't pass as many eggs in their feces.

Strongyloides:

Strongyloides was only found in the hutches of calves 411 and 412. Clinical signs that can occur with *Strongyloides* are congested lungs and diarrhea in younger animals. *Strongyloides* is often transmitted in the milk of the mother to the offspring. However, it can also be transmitted by

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skin penetration of infective larvae from environment. Skin penetration is likely the route in which the hutch calves became infected. To prevent reinfection by skin penetration, we recommend thoroughly cleaning the hutches to remove any debris that could harbor the larvae.

Coccidia:

Coccidia (most likely *Eimeria bovis* in cattle) was found in every age group. However, the numbers found were not very high and would be unlikely to cause any clinical signs. If Coccidia becomes overgrown, it can cause very serious clinical signs including weakness, weight loss, anorexia, and hemorrhagic diarrhea leading to anemia. Subclinical infections with Coccidia may cause reduced feed efficiency. The levels of Coccidia found on the farm are similar to, or slightly lower than, levels found on the farm in the past year. Coccidia usually becomes a problem with extremely crowded conditions, thus with current animal numbers and rotation of animals, this parasite should stay at low levels.

Trichuris:

Trichuris was found in two animals in the 4-8 month old group and one animal in the 6-12 month old group. *Trichuris* was not identified in samples in 2016, but was found in 2015 at similar levels to those currently seen. Clinical signs in heavy *Trichuris* infections are anorexia, weight loss, and anemia due to hemorrhagic diarrhea. However, levels are so low presently that no clinical signs are expected and *Trichuris* is not considered a problem on the farm.

Ascarids and Capillaria:

Ascarids (frequently *Ascaridia galli*) were found in samples taken from all three chicken houses. *Capillaria* was found in houses 2 and 3. Levels of both parasites were higher in houses 2 and 3 than they were in house 1. If the chickens in houses 2 and 3 are older than the chickens in house 1, this could be an age effect, as the older birds are likely to accumulated more parasites. Levels of these parasites were similar to levels recorded in Spring and Fall of 2016. *Ascarids* and *Capillaria* in chickens can cause anorexia, poor weight gain, and inactivity. In severe cases, the worms will block the intestinal tract and cause death. We recommend continuing to move the chicken houses to reduce exposure to *Ascarids* and *Capillaria*. It takes about 2 weeks for *Ascaridia* eggs to become on pasture. Ideally, if the chickens were to remain on the farm for significant periods, then it would be best to move the houses to new pastures every 2 weeks. Overall, since the chickens are not kept on the farm for very long as layers before being sold for meat, it is unlikely that levels of *Ascarids* and *Capillaria* will become major problems.

Conclusions:

Overall, parasite levels on Reedy Fork Farm were low and looked like they had improved since last year. The watery diarrhea that was observed in the 2-4 month old calves could be due to consuming lush vegetation after weaning, but could also be a sign of enteritis, especially since one sample returned an egg count of 150 eggs per gram, so that should be monitored. Levels of *Coccidia* and *Trichuris* were not high enough to cause concern. The *Strongyloides* found in the youngest calves may be able to be reduced by a thorough cleaning of the hutches, but again, levels are pretty low. For the chickens, we do not think that they are on the farm long enough for clinical signs from parasites to develop. If you wanted to reduce subclinical

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infections, the recommendation is to increase how often the houses are moved. To summarize, what we have found at Reedy Fork is consistent with good management practices. Thank you for the opportunity to observe the farm.