

REEDY FORK FARMS REPORT--MAY 2, 2013

History

Reedy Fork Farms has been an organic dairy since 2007. They began milling organic feed marketed for several different species (poultry, swine, beef, and dairy) in February of 2011. There are several groups of cattle housed separately that move pastures as they mature and join the milking herd or are marketed for organic beef.

Calves are dehorned and castrated before two months of age. All replacement heifers are coming from the farm's own stock. Each calf hutch contains sawdust bedding and wooden sides. The bedding is completely removed after the calf is moved from the hutch, and there is typically at least one week elapsing before another calf is placed into the hutch. After the calving season, which begins in the fall and usually ends in the early spring, the hutches will sit for several months without any calves in them. The calves are weaned around three-months-old and moved to a small pasture near the calf barn.

The other pastures are organized based on the following scheme:

- Three to five-month-old calves
- Six to seven-month-old calves
- Eight to fourteen-month-old calves (Yearlings)
- Bred heifers
- Lactating cows

Both steers and replacement heifers are present on pastures with exception of the lactation pasture, which housed lactating cows and a single bull used for live breeding. The pasture of yearlings had *Dictyocaulus viviparus* present in fecal samples collected two years ago. Most of the pastures house a certain age group, with cattle being advanced to the next pasture as they mature. The lactating cows were provided free-choice kelp, small amounts of grain, and were grazed on pasture planted with rye, sorghum, sudan, and oats. Eventually, the milking cows will be rotated around the pasture in established paddocks using hotwire that is easily mobilized. Many of the pastures had running streams present.

Vaccinations included an 8-way Clostridial vaccine and Once PMH for calf pneumonia (Merck product labeled for 2cc dose given SQ to protect against *Mannheimia haemolytica* and *Pasteurella multocida*) that are administered at approximately three to five months of age. Currently there is no use of deworming products. An organic deworming product containing oregano, garlic, and essential oils was last used in 2007. Essential oil fly repellent is applied to the cows based on total fly burden. Fly Vac used experimentally in cooperation with North Carolina State University.

Current Health Concerns

- Pneumonia in newly weaned calves
 - Multiple calves had a productive cough and nasal discharge in the 3-5-month-old pasture

- Pneumonic calves were removed from the 3-5-month-old group and placed with a lactating cow in the bred heifer pasture
- *Moraxella bovis* (Pink Eye)
 - Previous outbreaks had been noted by the owner
 - One cow exhibited central ulceration of her left eye suggesting *M. bovis* infection
 - Two cows presented with cloudy, blue eyes that were also suggestive of infection from *M. bovis*

Sample Collection

Fecal samples were taken from all calves in stalls. From each additional production group, fresh representative samples were taken from anonymous and tagged individuals.

Testing

Samples were processed using a double centrifugation technique. Strongyle-type eggs were counted via microscopic examination, and the total eggs per gram calculated. Any additional ova or parasites were noted.

Results

Table 1. Parasite ova identified from fecal samples collected from calves housed in the calf hutches.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
352	N*	N	N	N	P**
534	N	N	N	N	P
371	N	N	N	N	P
458?	N	N	N	N	P

Table 2. Parasite ova identified from fecal samples collected from calves that were 3-5 months of age housed together in a small pasture near the calf hutches.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
346	N	N	N	N	N
371	N	N	N	N	P
345	N	N	N	N	N
349	N	N	N	N	P
530	0.5***	N	N	0.5	N

533	N	N	N	N	N
534	0.5	P	N	N	P
PS 1****	N	N	N	N	P
PS 2	N	N	N	N	N

Table 3. Parasite ova identified from fecal samples collected from calves that were 6-7 months of age housed on a multiple acre pasture.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
536	N	N	N	N	N
PS 1	N	N	N	N	N
PS 2	1	N	N	1	N
PS 3	N	P	N	N	N
PS 4	N	N	N	N	N
PS 5	N	N	N	N	N
PS 6	1	N	N	N	N
PS 7	2.5	P	N	N	N

Table 4. Parasite ova identified from fecal samples collected from steers and heifers that were 8-14 months of age housed on a multiple acre pasture.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
429	N	N	N	N	N
466	N	N	N	N	N
287	N	N	N	N	N
328	7.5	P	N	N	N
303	5	P	N	N	N
250	N	P	N	N	P
258	3	N	N	N	N

302	27	N	P	N	P
PS 1	N	P	N	N	N
PS 2	22	N	N	N	N
PS 3	N	N	N	N	N
PS 4	4	N	N	N	P

Table 5. Parasite ova identified from fecal samples collected from calves, cows, steers and heifers housed on a multiple acre pasture designated for bred heifers. Most of the steers and heifers were greater than 14 months of age. There were a few pneumonic calves and lactating cows present.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
Bull calf	28	P	N	0.5	P
Nursing cow	5	N	N	N	N
E18-15-9	3.5	P	N	N	N
434	0.5	N	N	N	N
338	3	P	N	0.5	P
PS 1	N	N	N	N	N
PS 2	N	N	N	N	N
PS 3	N	N	N	N	N
PS 4	N	N	N	N	N
PS 5	2	N	P	N	N
PS 6	2.5	N	N	N	N

Table 6. Parasite ova identified from fecal samples collected from cows that were in lactation and grazing a multiple acre pasture.

ID	Strongyles	Strongyloides	Capillaria	Nematodirus	Coccidia
No tag	N	N	N	N	N
736	N	N	N	N	N

91	5	N	N	N	N
111	5	N	N	N	N
740	3	N	N	0.5	N
348	1	N	N	N	N
PS 1	18	N	P	N	N
PS 2	N	N	N	N	N
PS 3	N	N	N	N	N
PS 4	N	N	N	N	N
PS 5	N	P	N	N	N
PS 6	1	P	N	N	N
PS 7	N	N	N	N	P
PS 8	3	N	N	N	N

*N=negative

**P=positive

***All numerical values represent eggs per gram (epg)

****PS=pasture sample

Identified Parasites

- Strongyle-type eggs: result from infection of young or unexposed cattle by several different intestinal nematodes, the most important and potentially harmful being *Ostertagia ostertagi* (brown stomach worm). Signs of infection with this parasite, which can be found in the abomasum, include watery diarrhea, loss of appetite, poor hair coat, and possibly bottle jaw and pale mucous membranes (from anemia), particularly in calves. The *Ostertagia* larvae can overwinter in cysts in the abomasum and return to activity in the warmer months, so pasture infectivity is highest in the warmer months of the year. The infective larvae are most likely to cause disease when ingested from the pasture by a young animal. This is the basis for the recommendation of putting older animals on the pasture prior to a group of younger animals or rotating younger animals to a different pasture until the larvae have died off, generally 6 months down-time.
- *Strongyloides* larvated eggs: This parasite is most commonly found in the upper small intestine of young dairy calves who acquire the larvae from skin penetration or ingestion from pasture or colostrum. Signs, although rare, can include loss of appetite, weight loss, and intermittent diarrhea depending on degree of infection.

- *Capillaria* eggs: This parasite is commonly found at low levels in cattle that have ingested it from pasture. It seldom causes clinical signs and is of little concern for cattle health and productivity.
- *Nematodirus* eggs: This parasite can be found in the small intestine of ruminants, where it causes diarrhea, dehydration, loss of appetite, poor weight gain, and poor haircoat in affected calves or unexposed cattle. Animals older than six months that have been exposed to an infection with *Nematodirus* typically have acquired immunity to this parasite and suffer no ill effects. The infective larvae are ingested from the pasture after hatching from eggs that are passed in the feces of infected animals.
- Coccidia ova: This parasite most commonly infects cattle less than a year old and is seen in higher levels when animals are stressed, especially due to crowding and cold weather. Associated signs are watery diarrhea and general unthriftiness; however, infection will usually resolve on its own. Cattle become infected when ingesting infective oocysts from pasture or calf stalls.

Recommendations

In regards to internal parasites, the findings of low counts of strongyle-type eggs (less than 100 eggs per gram) indicate that while low levels of infective larvae may be present on the various pastures, there are not significant enough levels of contamination to cause disease in your herd. The main parasite of concern in this category is *Ostertagia ostertagi* (brown stomach worm). It would be advisable to continue monitoring fecal samples for strongyle-type eggs in order to address any increases in egg count before pastures get overly contaminated with infective larvae. The findings of *Nematodirus* eggs indicate that a very low level of this parasite is present in the pastures. Based on the low egg count, your herd is not likely to experience symptoms of a *Nematodirus* infection at this time. The findings of *Capillaria* eggs are incidental, as the parasite is considered non-pathogenic. You should not expect any impact on health or production from the presence of *Capillaria*. The finding of coccidia, especially in the younger calves, is typical and will likely be a self-limiting infection. Keep an eye on infected calves for clinical signs, but no intervention is needed at this time.

There appeared to be low numbers of horn flies found on the backs and faces of the cattle, particularly the 8 to 14-month-old group. While these levels did not seem to bother the animals much in this cooler, rainy weather, it is important to use fly control particularly in the warmer months to decrease the ill effects on production from fly bother as well as prevent spread of pathogens such as *Moraxella bovis*, the bacteria that causes pink-eye.

It seemed that the weaned calves were already experiencing signs of pneumonia, indicating that environmental concerns or lack of immunity may be contributing to signs of disease prior to vaccination. Considerations to prevent this in future groups of calves would be to ensure adequate heating and lack of draughts in the calf stalls, ensure adequate immunity from colostrum as not all colostrum is of equal quality, and minimize the stress of mixing and moving

groups of calves. Checking for a lack of passive transfer of immunity from the colostrum can be done by your veterinarian and will help assess if colostrum management needs to be addressed.

Many of the cases of pink-eye appeared to have resolved, but some recommendations if this problem recurs is to provide adequate shade from UV light, prevent contaminants such as feed, dust, and pollen from entering the eye, and utilize fly control to prevent face-flies. In severe cases, it may be necessary for the veterinarian to suture the third eyelid closed to aid in protection.

Thank you for allowing us to tour your farm and learn more about organic dairy production.