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CATEGORY ARCHIVES: EVALUATION OF TECHNOLOGIES TO IMPROVE THE COMPETITIVENESS OF THE STOCKER CATTLE ENTERPRISE IN NEW YORK

Week 11: Forages, Fencing, and Farewell North Country

Posted on **August 27, 2015** by **Conor John McCabe**

For my final week at Extension I was paired with Charlie to help manage the ELF. At the beginning of the week the two of us built more fence, using the electro-net, for the ewes so that they could be moved into a new paddock. It had been quite a while since they had last been moved so pulling the stakes out of the previous pasture was quite difficult because they had grown into the thick grass. But I managed to successfully remove all of the fence posts and bundled them into one pile so that they could later be picked up by the tractor.

Over the course of the week, I was also in charge of processing the forage samples by calculating the percent dry matter. Betsy will continue this process for the remainder of the study after I'm gone. There are an expected two more sampling trials to be completed at the ELF and three more to be completed at Asgaard. The reason the study started so late is because we had to wait for the lambs and kids to be weaned from their mothers before we could put them out on pasture. The reason the animals were not weaned until mid-July is because they were born at the end of April because it is too cold out in the earlier months for the offspring to survive. Also, the mothers could not go out on pasture because they most likely already have high parasite counts due to the fact they have been exposed to more environmental factors over the course of their lives than the lambs. However, Betsy and tatiana will finish the study up with help from local college students and will keep me up to date with study results and any conclusions they are able to come to when they are performing analysis of the data.

With the summer coming to a close and now finally looking back on it, I have to say that I thoroughly enjoyed my rewarding experience. I learned a tremendous amount of information about the local agriculture production system, parasitology, and overall flock management strategies. I would highly recommend this position to anyone who is interested in sheep management, getting involved with research, or would like to explore the North Country and learn about other parts of New York. I would like to thank Betsy and Charlie for their help at the ELF and to Dr. Baker and Dr. Stanton for letting me help with their grants over the summer. So with that I say so long to Canton and a grand hello back to Ithaca!

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 10: Sheep Love Birdsfoot and Goats do too

Posted on **August 27, 2015** by **Conor John McCabe**

To begin my last week of sampling at the ELF, Betsy and I took advantage of the cooler weather and we proceeded to take down a large amount of fencing for the ewes that had been up for almost a month. Due to the fact that the fence had been in the ground for so long, it had grown in with the grass and it took several forceful pulls to remove the stakes from the ground. Once all of the fencing was bundled up and moved out of the field, it was my job to process the forage samples and place them in the drying ovens. Although this process is fairly straightforward in that all I had to do is empty the forage sample into the tray and record the mass, it is quite easy to input the wrong amount or put the data in the wrong cell on the spreadsheet.

The next day tatiana, Betsy, and I packed up the van and headed east back to Asgaard Dairy Farm. On our way to the farm, the clouds surrounding our car

— Weighing the Forage Samples to Calculate Dry Matter

looked very threatening and then the skies opened and it began to pour. With the windshield wipers on full blast it looked like we were going to get soaked, standing outside sampling against the wrath of Mother Nature. However, as soon as we arrived in AuSable Forks, the rained discontinued and we were left with only an overcast sky. Realizing our serendipitous weather we quickly filed out of the van and began fecal sampling the goats. I was sent out to the next portion of birdsfoot pasture and was assigned to take four more pasture samples for dry matter analysis. Upon completion of forage sampling, Betsy and tatiana had completed their fecal sampling and it was time to weigh the goats because we only had an approximation using measuring tape last time.

However, our method of weighing the goats was a little non-conventional to say the least. In order to record the goat's mass we set them in a feed sack and hung it from a scale that was attached to a wooden tripod Dr. Stanton brought up with her. Some goats were easier to get in the bag than others as can be seen in the video below. I would then read the numbers from the scale as the goats thrashed around in the bag. Once this was completed we released the feed sack from the scale and the goat climbed out of the sack. A few goats jumped out slower than others because they seemed to like the cozy environment of the feed sack. Upon termination of this project we headed over to the green street pasture to sample the goats on conventional pasture.

— Weighing the Study Goats on a Tripod

Again I was assigned to collect forage samples for further analysis and I trekked out into the field to collect four different samples. The grass was highly nutritious with different species of clover and vetch. Furthermore, by the time I had finished sampling they had finished collecting fecal samples and it was time to weigh the goats again. Using the same method, we put these goats in a feed sack and hoisted them up to the scale to be weighed. Once all data was collected, we packed up the van and headed back to Canton having escaped the rain and leaving entirely dry.

— Walking the Sheep Back to the Barn

The next day it was back to sampling at the ELF and to begin we brought the lambs up to the barn from their pastures by building an alley and leading them back to their pens. However, we made sure to keep the birdsfoot and conventional pasture lambs separate to prevent us from having to sort lambs out at the end. We then commenced with sampling the conventional pasture lambs and then followed them with the birdsfoot lambs. Without the need to weigh the lambs we were finished up by 11 AM. However, we had to sample the eight lambs on the hay and grain treatment in the loafing barn. So we walked over to the loafing barn and it was my job to individually catch all eight of the lambs belonging to this treatment group. Once captured, tatiana would obtain a fecal sample and then we would spray paint the lamb so that we would know not to catch it again. After we finished, tatiana packed up her supplies and headed back to Ithaca to drop off the fecal samples from Asgaard and the ELF at the vet school. Betsy and I then ran the study lambs back out to their pastures and headed home for the day after an exhausting two-day sampling cycle. As you can see in the pictures below, the sheep and goats both love the Birdsfoot Trefoil, which can be identified by its yellow flowers.

Coming into work the following day Betsy wanted to deworm the ewes one last time before I left for the summer.

Therefore, we brought the ewes into the barn and set up a holding area so that they would be confined to a small area. Betsy and I then went around the pen and FAMACHA scored all of the ewes looking to treat those with pale eye lids. In total we treated approximately 20% of the flock with dewormer and the ewes should not have to be treated until next spring. Overall the flock appeared to be in good health as very few of the ewes needed treatment.

Due to the fact that Betsy would be going on vacation next week, we set up two new pastures for the lambs to graze in for the next week. We also created extra paddocks so that Betsy and Charlie won't have to create as many paddocks when I'm not longer at the ELF. I also spent the remainder of the day taking forage samples from the new paddocks, which I will put into the drying oven the following week so that we can calculate dry matter composition.

To end my last day working with Betsy, we put together a new sheep scale

that the ELF had recently purchased. This scale is much smaller than the other one the farm owns so that it can be picked up by local producers and used at their respective farms. Betsy also plans to weigh the lambs in the loafing barn with this scale because it is much easy to transfer than the other scale where we had weighed the lambs earlier this summer.

— Sheep Scale that will be Used by Local Producers and the ELF

Next week will be my last one here at the ELF and I will be helping out Charlie with whatever needs to be completed. I'll also be simulating Betsy's job in her absence to make sure that all of the lambs are in good health and the study is running well. Check back next week to see what I accomplish in my last week at the ELF and to see how well I fair in Betsy's position.

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 9: The Temperatures and Study Heat Up

Posted on **August 25, 2015** by **Conor John McCabe**

For my ninth week at Extension, the temperatures started to climb into the upper 80s and lower 90s. Considering this region gets as cold as 40 below zero during the winter months, this heat wave felt exhausting to many locals

and made it difficult to work outside. To begin our work on Monday, we had to run water line out to the lambs in the birdsfoot trefoil and conventional pastures. Also, because the lambs in the birdsfoot pasture are completely exposed to the sun, we set up a portable awning to provide instant shade for both the lambs and the guard dog Matty, who will be accompanying them.

After everything was set up, it was finally time to move the lambs out of the barn to their respective pastures. After being pent up in the barn since last Wednesday, they were ready to bust out and consume some fresh pasture. Below is a video of the lambs going out to their new pasture. (The red tent in the background is the awning the birdsfoot lambs will use as shade.) The birdsfoot lambs eagerly went into their new pasture and started picking away at the forage and appeared to enjoy it despite the fact they had never seen birdsfoot in their life. The conventional lambs were slightly more hesitant to go into their pasture due to the fact that the grass was above their heads and they couldn't see more than five feet in front of themselves. However, we slowly coaxed them into their new paddock and they went back to eating grass just like before. Betsy and I then set up the fence charger with a portable battery and the study lambs were safe for the rest of the day. After all of this work and weeks of preparation, it is rewarding to finally see the study animals going out to pasture and see the study begin.

The following day, we went back to work preparing the loafing barn so that we could move the rest of the lambs over to their new location. To prepare the barn, Extension purchased a dozen hog panels from a local feed store as well as a literal ton of grain for the lambs. My job was to then cut the ends of the panels so they would fit the length of the gate, as they were just a tad too long. Using a large set of wire cutters, I sliced off the ends one by one as necessary and the panels were then attached to the gates with zip ties. By the afternoon, it was way too hot to continue working outside so I went down to the agronomy lab and started to weigh out samples to figure out the percent dry matter of the birdsfoot pasture and the percentage of legumes in the conventional pasture. Agronomist Kitty O'Neil had taken the forage samples late last week so it was my turn to put the samples into the drying oven to produce the data. The work was slow going due to the fact I had to separate 40 samples and still had 8 more that I would need to complete the following day.

Since it had become so hot outside, Betsy and I prepared ice treats for the guard dogs.

Having several inches of hair in the winter is certainly advantageous for these Great Pyrenees in this region but it's a burden during the summer months when the temperatures creep up into the 90s. The dogs really enjoyed their treats as it was a refreshing way for them to relax.

— Matty Enjoying Her Ice Treat

Wednesday morning we got off to a quick start with the help of Charlie as I was able to cut all of the hog panels down to size and he quickly zip tied them onto their respective gates. We then lined up the sheep feeders down the middle, hooked up a water system and by the end of the morning, the barnyard was all ready for approximately 60-70 lambs to be moved over. However, by this time the temperature was climbing into the mid-80s so we decided to opt to move the lambs over the following morning. That afternoon I went back to the agronomy lab to separate out the remaining samples. When complete, I came back to the Extension office and due to the fact that it was so hot, Betsy and I stayed inside the office and I worked on entering this year's lambing records into the computer system.

— The Gates were Lined with Hog Panel

The following day I had the privilege to visit Mapleview Dairy, which is a 2,500 cow operation in Madrid, NY. I was thoroughly impressed with the management strategies they implemented at the farm and I headed over to the ELF afterwards. Our goal for the day was to move the remaining lambs over to the loafing barn so they could begin their new hay and grain diet. Betsy and I set up a lane from the sheep barn over to the loafing barn and we guided the lambs to their new home. We then fed the lambs grain and they quickly acquired a ravenous taste for it and were lined up at the trough to get their fair share of grain. Charlie then brought over two round bales and we set up panels around them for the

— Lambs Lined Up at the Trough

lambs to eat. The lambs looked like they were enjoying their new home and we left them to fill their bellies with hay.

To finish up the week, the lambs out on pasture had already depleted their current feed

levels and it was time for them to be moved to a new section. Betsy and I then built additional fencing using the electro-net and I proceeded to take forage samples from the pastures. I completed this process by using a set of hedge trimmers and trimmed everything inside a 20” X 20” square down to sheep grazing level and separated birdsfoot trefoil from non-birdsfoot trefoil plant parts. The forage is becoming so tall that two, two gallon bags are filled by each square sample. I proceeded to take four different samples from the new birdsfoot and conventional pasture. The samples were put in the refrigerator and will be dried next week.

— Matty and Her Sheep

To finish the week, the ram’s nails had grown exceptionally long and had not been trimmed since the early spring. Therefore, Betsy and I made it over to the sheep barn and proceeded to lift up each foot of the ram and trimmed the underside. His nails had grown over and they were as tough as rocks due to the fact he’s been inside the barn at all times. However, after I slowly chipped away, large chunks of nail begin to peel off and all that remained were four neatly trimmed feet. The ram was definitely relieved and thankful for the service we had provided for him as he walked around trying out his more comfortable feet.

— Trimming the Ram's Feet

Make sure to check back next week as tatiana will come up to the farm again and we'll complete my last round of fecal sampling for the summer at both Asgaard and the ELF. Make sure to check back next week and see what accomplishments I've made.

-Conor McCabe
Beef Cattle and Sheep & Goat Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 8: The Sampling Continues

Posted on **August 13, 2015** by **Conor John McCabe**

To begin my eighth week at Extension, we were faced with the task of moving the sheep feeders over to the loafing barn. We are about to wean the lambs from their mothers this coming Wednesday so we needed to set up a place to put them. These feeder lambs will

be fed a combination of hay and grain and should hopefully put on weight quickly and then the majority of them will be sold for meat a few months later. These wooden feeders were built several years ago and are equipped with feed troughs on both sides and a center walkway down the middle to allow the person feeding grain to walk

— Sheep Feeders Lined Up in Loafing Barn

without down this aisle without being run over by hungry lambs.

To start this process, Betsy and I pried boards off the feeder so that we could get the tractor in there and move these bulky feeders out of the storage unit. Charlie then brought the tractor over and we were able to move all five feeders over to the other barn. After the feeders were in their new location, Betsy and I took to cleaning them out and lined them up down the center so that we can easily feed the lambs once they are moved.

The following day tatiana Stanton came up from Cornell and we were off to Asgaard Goat Dairy to fecal sample their meat goats. Upon arrival at the farm, we drove out to their birdsfoot trefoil plot where their goats were recently put out on to graze. The same study that we are testing at the ELF in reducing internal parasites in the lambs using birdsfoot trefoil is also be implemented on this farm. These goats were by far easier to work with than the lambs at the ELF because they had all been bottle raised and have received lots of human attention; therefore they're relatively easy to catch. As soon as I would select a goat for the study, tatiana or Betsy would come over and obtain a fecal sample. Sometimes the goats would have lots of poop, sometimes they would have none but I've never seen someone so excited about poop as Betsy and Dr. Stanton were. An example of this can be seen in the video below when Betsy takes a fecal sample. We would then follow the same procedure as we have

completed at the ELF by FAMACHA scoring the goats and then spray painting their number on their back. Since we did not have a scale for the goats, tataina used a measuring tape to measure the girth of their chest. This measurement of the girth of the goat's chest positively correlates with the weight of the goat, which will be calculated later by Dr. Stanton with the use of a formula. After we were finished with the birdsfoot goats, we drove out to the control group of goats in a conventional pasture located a couple miles away on Green Street.

— tatiana Measured the Chest Girth of the Goats

Once we arrived at the pasture, we performed the same procedures as we did with the previous group by finding goats, collecting fecal samples, FAMACHA scoring, and spray painting their number on their back. We tried as hard as we could to pick goats of the same size, age, and sex as the goats on the birdsfoot to prevent bias in the data between the control and treatment groups. Afterwards, we packed up our equipment in the van and headed back to the ELF. Betsy and Dr. Stanton will continue coming

here every two weeks to collect samples until they have completed at least four sample periods, which means they will continue sampling after I'm back at Cornell. Below is a video of the Green St. Goats

— Goats were Spray Painted After Sampling

The following day was set to be very busy as we were back to work sampling lambs and collecting more data for the ELF's portion of the reducing internal parasite study. The

procedures were almost the same as two weeks prior as we brought the lambs into the barn and then proceeded to catch the study lambs (already identified by the mark on their back) so that we could collect a second fecal sample and FAMACHA score. However this time, we spray painted the number on their back in a color according to the treatment group they were assigned to; blue was conventional pasture, green was birdsfoot trefoil pasture, and red was hay and grain. Once all

lambs were sampled; Dr. Stanton, Betsy and I proceeded to grab the lambs and move them over to a separate pen away from the ewes. This was our method of weaning, and we followed it by letting only the ewes into the barnyard. We then prevented the lambs from escaping out into the barnyard by tying panels across the barn gates to prevent escapees; however we later found this to be unsuccessful.

— I Held the Lambs While Betsy Fecal Sampled

— Treatment Color Coordinated Lambs: Blue on Left, Red in Middle, and Green on Right

In fact, when we showed up the next morning to check on the sheep, a dozen lambs had busted out of their enclosure and were roaming the barnyard staying close to their mothers. In order to get them back in, we had to open up the barn and run all the sheep in, separate out the lambs, then let the ewes out while preventing other lambs from escaping. Yet it turned out to work out alright as we successfully sorted out all the lambs while preventing any from escaping again.

That afternoon Chris Watkins, the director of Cornell Cooperative Extension, and other high ranking officials of

Extension came to the farm to learn about the work I was performing over the summer and what my experience so far had been. The meeting went

really well as I explained the internal parasite project Betsy and I had been working on as well as other activities I had participated in at the farm. Chris and his team and I then discussed possibilities for future summer interns from Cornell at the farm to see where the CCE program could go at this location because this is the first year they have had Cornell interns. To end the day, Betsy and I ran the ewes back out into pasture from the barnyard so that the lambs wouldn't be tempted to bust out of the barn again. We also moved the four piglets, with the help of Amy, from their outdoor fenced-in area to the barn so that their feed intake could be more closely monitored. They had lost a lot of weight and the kids were not always watering them, so we figured we could more closely monitor their feed intake if they were indoors. This process went quite smoothly despite the fact that the pigs' screams, once they were handled, were ear piercing and could be heard throughout the farm. I sure wish I had had some ear plugs after picking up those four piglets.

— The Piglets were Moved Inside the Barn

Due to the fact that the sheep were ready to get our to their treatment pastures, we spent all day Friday setting up fencing for the conventional and birdsfoot pastures. This process took all day but these areas were ready for the sheep to go into the following Monday. However, the loafing barn still needs to be made lamb-proof by setting up panels across the gated areas so that the lambs would not be able to crawl out. This process is sure to take a while but hopefully we can get the lambs moved by mid-week. Make sure to check back next week to see us move the lambs out to their treatments!

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

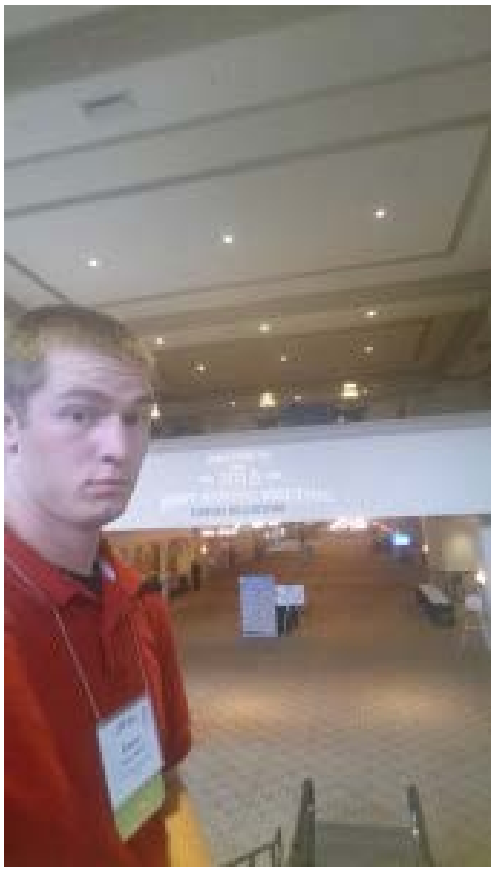
Week 7: A Short Florida Vacation

Posted on **August 2, 2015** by **Conor John McCabe**

During the seventh week of my time at extension, I traveled Monday through Thursday to Orlando, FL for the Joint Annual Meeting between the American Dairy Science Association and the American Society for Animal Science. The meeting opened me to several areas of research in livestock production and I met several other undergrads,

professors, and members of the livestock industry. I would encourage anyone who is interested in animal science or research at any level to attend as they will gain an enormous amount of information from several different areas of livestock production.

To cap off my week on Friday Betsy and I started by completing our weekly activity of opening a new paddock for the sheep to graze. They were dwindling down to their last few blades of grass and were in dire need of fresh grass.



— 2015 JAM Conference

We

— Beef Farm that will Host Regional August Beef Meeting

then went over to a local beef farm to find a prospect farm for the region's local beef producers' meeting to educate and advance the management of beef in the Northern New York area and to advocate for the beef pooling project. The farm turned out to be an excellent find with 37 Devon and Hereford cows that he crosses on Angus bulls to produce efficient, well-balanced steers and heifers. The regional beef meeting will then take place on August 6th and should draw 20-30 producers. Finally to end the day, I was put in charge of taking down the A-frame wooden pig structure. The ELF is no longer involved in the production of swine so they no longer have a need for this shelter structure. Therefore I went to work taking down the A-frame and within an hour and a half it was only a pile of screws and wood boards. Below are before and after pictures of the swine A-frame dismantlement.

Next week we'll be continuing the fecal sampling with the lambs at the ELF as well as starting the fecal sampling on the goats at Asgaard Goat Dairy in AuSable Forks, NY. Then hopefully we'll be able to move the lambs at the ELF out to their treatment pastures. Make sure to check back next week and see what progress I've made.

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 6: The Sampling Begins!

Posted on **July 31, 2015** by **Conor John McCabe**

During my sixth week at extension things started to pick up the pace in terms of the sheep and goat fecal sampling. To get ready for the fecal sampling at the ELF on Wednesday, Betsy and I prepared the facilities by setting up a lane to bring the sheep back to the barn from the pasture and prepare the scale so that we could weigh the study lambs.

Once we finished setting up for the sampling, we had to perform a necropsy on a lamb that Betsy found dead the morning before in her pasture, in order to find the cause of death. Betsy suspected that the lamb had died from tapeworms because she had found fecal samples with tapeworms throughout her pasture at home. Also, adult sheep tend to not be susceptible to tape worms and it is only found in the lambs. Therefore, we began to open up the lamb to search for the plausible cause of death. Once we arrived at the intestines of the lamb, we opened them up and the small intestine was just full of yellowish long worms that were blocking the intestinal lumen. Betsy kept pulling them out and the worms came out by the tens. It was safe to say that the cause of death in the lamb was by tape worms.

— Tapeworm seen between Betsy's fingers

Finally Wednesday came around and it was time to start picking lambs for the study. Small ruminant extension specialist tatiana Stanton came up from Cornell to help us proceed with the sampling procedures. Once we got the sheep inside the barn, Betsy and I started identifying lambs to use for the study. We aimed for the average sized

lambs so that we wouldn't have a large discrepancy in weights and blocked the sample lambs by sex so that half would be rams and half would be ewes.

After deciding a lamb should be included in the study, Betsy would obtain a fecal sample. (above is an example of Dr. Stanton taking a fecal sample on a lamb). The fecal samples, once all collected, were sent back to Cornell with Dr. Stanton to the vet school to be processed for the number of parasite eggs present. After the sample was collected, we would FAMACHA check the lambs using the same 5 point system that we performed a couple weeks ago on the ewes to look for lambs that may be anemic.

Furthermore, we spray painted the lamb's identification number on their back so that we can identify which lambs are on the study for future sampling dates. (An example of this can be seen in the video below). Finally the lambs were placed in the holding pen until we accumulated our 40 lambs for the study. Upon collection of the sample lambs, we gave them each a booster immunization that would complement the vaccine that we gave the lambs two weeks prior. The lambs were then translocated to an adjacent pen and we began the process of individually weighing the study lambs. My job for this task was to move each of the lambs into the scale once it was open and then Betsy would balance out the scale and read out the weights. (An example of the weighing process is present in the video below). The study lambs will be weighed every two weeks when we sample to asses weight gain or loss. The data will help us determine if the lambs who are not receiving birdsfoot trefoil or copper oxide wire particles are negatively affected by increased amounts of internal parasites, which causes neutral to negative weight gain.

— The lambs were FAMACHA scored

Once the lambs exited the scale, Dr. Stanton gave them copper-oxide wire particles with a bawling gun if they were assigned to a specific treatment group.

Eight lambs of the 40 are assigned to each treatment to equate to a total of five treatments. The five treatment groups are: birdsfoot trefoil pasture, birdsfoot trefoil pasture with copper oxide wire particles (COWP), conventional pasture, conventional pasture with COWP, and grain fed with COWP. The ELF had success with reducing internal parasites using the treatment of COWP in their study of reducing internal parasites last year. Therefore we want to see if the addition of copper oxide wire particles and birdsfoot trefoil is the most effective treatment or if the birdsfoot combats the effectiveness of the COWP. These different treatments should give us lots of data to be able to compare the treatment groups and hopefully find organic dewormers for sheep farmers in Northern New York as well as the Northeast portion of the United States.

— Betsy administering copper oxide wire particles with a bawling gun

The remaining non-study lambs were ran through the blue pen and supplemented with COWP as well as a booster vaccine. The copper treatment was given to the remaining lambs because it was found to be a successful dewormer in the study last year. The reason we gave the lambs the treatment at this stage in their life is because the COWP are slowly released in the gut and the mother's milk helps with the absorption of the particles. These lambs will be weaned in two weeks so the milk will help with the absorption and should help fight internal parasites to their greatest potential.

On Thursday and Friday to finish out the busy week, Betsy and I met with Ron Kuck, the livestock educator of Jefferson County to discuss upcoming livestock events through the rest of the summer and for the time after I'm gone in the region. The next day, Friday, I had a conference call with Betsy, Ron, and other members of the Northern New York Extension Team as well as Dr. Baker with a meeting on the beef pooling project that will take place this fall. The idea of this project is to create pools of cattle in the northern counties of New York in groups of approximately 20 and then these cattle will be sold at a livestock auction in Dryden, NY, down by Ithaca, with expected higher prices than could be achieved by selling the cattle locally. The long term goals for this project are to promote genetic gain in the Northern cattle herds while increasing profits for these local farmers.

Lastly, in order to measure the amount of dry matter in the remaining fenced off fields for the sheep we used the Rising Plate Meter. Dry matter is a high indicator of the amount of feed available for the sheep to eat on a pasture. This Meter determines the amount of dry matter by walking across the field and pushing the meter down into the pasture and the stick will push upward and increase the number of clicks on the meter. The number of clicks will then increase, which is related to the amount of dry matter. Betsy then used a program made by the University of Missouri by sketching out the pasture on a geographical satellite map. The program then determined that there was enough dry matter in the field to last the sheep five days in both paddocks. Hopefully this holds up because then we won't have to build as much fence for the sheep!

Next week I will be traveling to Orlando, FL for the Joint Annual Meeting animal science meeting between the American Dairy Science Association and the American Society of Animal Science. This is my first time

— The Raising Plate Meter

attending the meeting and it should present several types of research across livestock species and am highly looking forward to it. Therefore, I will be out of the office for the majority of the week. Make sure to check back next week to see what I completed in my short week in the office.

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 5: Fencing; The Official Sport of the North Country

Posted on **July 8, 2015** by **Conor John McCabe**

To begin my fifth week at Cooperative Extension of Saint Lawrence County, I completed a series of farm tours with the ELF agronomist Kitty O'Neil. Betsy was out of the office on vacation this week so I was assigned to whoever had projects going on. The three farms we visited all had their own questions and desired to resolve various crop problems that had occurred on their farm. The first farm we visited had a problem with a surplus of sedges growing within the pasture. Kitty recommended that the farmer investigate investing in a select herbicide that would kill out these sedges but would make sure to leave the desired plants unharmed.

The next farm we visited had a problem with bare patches in its corn fields. Corn had been planted there approximately 5 weeks beforehand, however nothing had ever sprouted. Therefore, we went out into the field and investigated the areas that were bare. Upon digging in the area where the corn seeds should be, we found seeds off and on but they appeared healthy and there were no apparent pests found consuming the seeds. These puzzling findings left us without any further conclusions and Kitty made the suggestion that the seeds were possibly not sprayed with pesticide when they were planted, which means that worms may have eaten the corn just after it was planted in the ground.

— Example of a sedge found

in the farmer's field

— The bare patches in the corn field.

The third and final visit we had was to a natural wildlife reserve that was lacking performance in its pastures that will be used for a cutting of hay. After analyzing the fields, Kitty recommended that the operators of the wildlife reserve have the soil tested and complete the recommendations that the tests concluded. Also, the addition of lime fertilizer would add fertility to the soil and could also possibly increase the fertility and production of the pasture.

— The hay field lacking production

Tuesday, Wednesday, and Thursday, were all filled with fencing new pasture for the sheep and creating an extremely large area for them to graze. The mosquitoes have become particularly bad this time of year and you can't walk through the field without being swarmed instantaneously by bugs. Even with heavy implementation of bug spray, the mosquitoes still swarmed around me and prevented Tuesday and Wednesday from being pleasant at all. In fact, I received over 20 mosquito bites on my left hand alone! Thankfully it heavily rained Wednesday night and the majority of the mosquitoes were washed away and there were few insects spotted on Thursday. Overall, 5 new paddocks were formed, which should be enough grass to feed the sheep for the next two to three weeks!

— The five paddocks that were built for the sheep. Two are closer towards the road and three line the left side.

Next week we'll begin the sheep research project at the ELF and will start identifying lambs to use for the study. Make sure to come back next week to find out what exciting progress I have made!

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 4: Sheep Vaccinations and Farm Chores

Posted on **June 29, 2015** by **Conor John McCabe**

To begin my fourth week at Extension, it was Betsy and I's job to deworm and vaccinate the entire sheep flock to provide them with immunity against current and future parasites and pathogens. On Monday, we brought in the sheep into the barnyard and completed the deworming procedures. The ELF has recently changed to only treating ewes that need deworming instead of deworming the entire flock. The reason for this is because the deworming medicine does not kill all of the internal parasites and leaves a small proportion of parasites who are resistant to the dewormer. Then those parasites already immune to the deworming medicine vastly replicate and then your sheep have a ton of untreatable internal parasites and you've got an even bigger problem on your hands. In order to identify which sheep needed the treatment Betsy used a method known as FAMACHA scoring. This scoring system was developed by a man in South Africa that looks at the eyelids of the sheep to look for signs of anemia. The sheep are given a score between 1-5 with a 1 being a bright red color eyelid and a 5 being ghostly white. In the

scoring system, those sheep that score a 3 or greater are given a dosage of 6 CCs of deworming medicine. Overall, we treated about 20% of the flock or 16 sheep and none of the lambs needed the treatment.

— Sheep with FAMACHA scores 3 or greater received treatment

The next day it was time to vaccinate the entire flock, including the ewes, rams, and lambs, which accounts for over 200 sheep! My roles for this day were to refill syringes with 2 CCs of medicine, move sheep into place, and mark sheep so that we could identify which ones had already been vaccinated. Below are some pictures of my work in action. Betsy had the tough job of giving the vaccines and she was certainly exhausted by the time we finished.

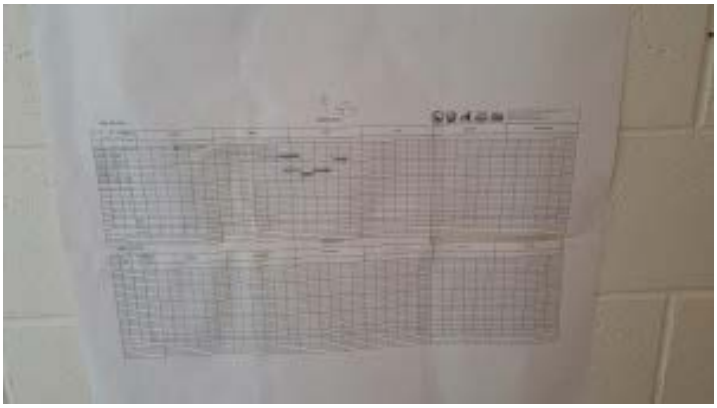
Wednesday morning turned out to be highly eventful because Jeff and I were given the difficult task of catching the single boar piglet. Out of the five, he was easily the fastest and he evaded us by darting around and between

— Preparing vaccines for the sheep

— Betsy gave the vaccines to the sheep

our legs. Finally to solve the problem, we grabbed two sets of panel so that we could trap the pigs in a corner. I then swooped down and grabbed him in a flash. He started screaming so loud that everyone across the ELF could hear him however he quickly settled down and passed out in my arms as he was extremely tired after being chased for so long. In the afternoon, I was set to work constructing a grazing chart so that Betsy and Charlie can track what pastures have been grazed and when; so that they can decide when to move sheep back to that pasture to maximize grass growth and limit parasites consumed by the sheep.

— The boar piglet I finally caught



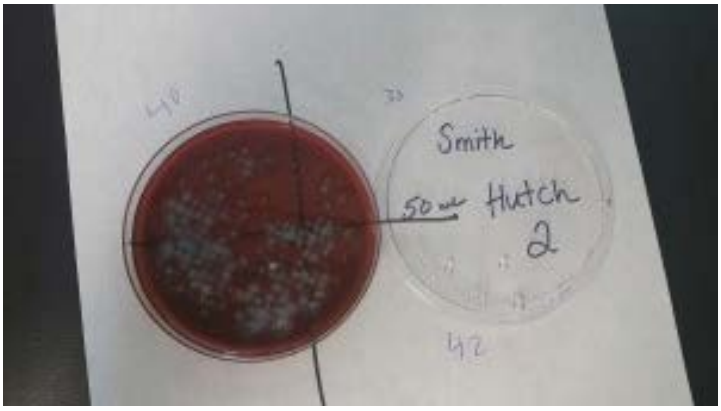
— Grazing chart to maximize pasture efficiency

Thursday was a busy day involved with moving the sheep to a new pasture. Again we set up another piece of pasture by constructing the electro-net so that the sheep would be contained and more so, so that coyotes could not get in. We then spent the afternoon taking down fence and moving the water trough out to the new pasture so that the sheep would be able to have free choice water. Charlie and I then hooked up a portable fence charger to again keep the sheep in and the coyotes out. Charlie then received a call from other farmers who were bagging silage and they needed help putting on an additional bag, so we headed out to the farm. We assisted the farmer close a

— Putting the silage bag on the bagger

full bag hay silage and then moved over to attach a new bag to the bagger. Silage bags have become more popular recently as they are movable unlike traditional vertical metal silos. I had never before seen a silage bag put on a bagger before and it was an interesting and detailed process they completed. The farmers were then able to go back to work by filling the silage bag so that they can feed it to their cattle during the winter months.

To end the week, I was



— The bacteria are stacked on top of each other

assigned to clean out the swine and calf pens, which were in need of being done considering they hadn't been cleaned in over a month. Although the job was tedious, the animals loved their fresh, clean bedding. Finally at the end of the day I was assigned to count bacteria samples for Kim Morrill, who is the Dairy specialist for the North Country. These samples were swabs taken from calf hutches and then incubated to let the bacteria grow inside the petri dish. Some of the samples had a dozen or so bacteria present while others had hundreds and it was difficult to identify where one bacteria ended and another began. However, I only had to count bacteria for ten samples and was done within an hour. Above is a picture of what one of the samples looked like and it is easy to see how the bacteria were sitting right on top of each other.

Next week Betsy will be out of the office on vacation, so I will most likely be doing a lot of work with Charlie on the farm in a shortened 4th of July week. Make sure to check back next week to see the progress I've made!

Conor McCabe
Beef Cattle and Sheep & Goat Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 3: Fencing, Birdsfoot Pasture Evaluation, and Sheep Procedures

Posted on **June 22, 2015** by **Conor John McCabe**

To start off my third week working for extension, a couple of school groups come to the ELF to learn about agriculture and what we do at extension. I joined forces with Amy, the 4-H community educator, on Monday and Tuesday morning to show elementary students around the farm. We viewed the High Tunnel, a green house without a controlled climate system, where the kids planted scarlet runners, the barn where the livestock are held and I presented on swine, and finally at the egg incubator where Amy showed the kids turkey embryos through a process known as candling. After a busy morning of learning about how the farm operates, it was time for the kids to have lunch and time for me to get back to work in the office.

On the afternoon of those days, Jeff and I went to the extension agronomy lab, which is just down the road from the ELF and had been historically used by Cornell for agronomy research. Our mission at the lab was to take our Birdsfoot Trefoil pasture samples we had taken and put them in the drying oven for a few days. This drying oven is humongous as it can house 100+ full sheet samples at one time. The drying process would allow us to calculate percent dry matter as well as the percent Birdsfoot Trefoil in the pastures at ELF and Asgaard. The process was simple but tedious as we had to weigh out each tray as well as the tray after the sample had been placed on it. The sample was then moved to the drying oven where we left them to dry. In total, we had 72 samples to account for and then we let them dry in the industrial sized oven for three days. The oven can be seen running in the video below.

— Inserting the pasture sample into the drying oven to obtain results

— The pasture sample dehydrated after three days in the oven

At the end of the day Tuesday, Betsy and I went to her house to pick up two of her flock's guard dogs, Peaches and Candy, to bring in for extra protection for the ELF's flock. The dogs are both big, white Great Pyrenees and have proved to be excellent guarders of sheep. In fact, from a distance, these dogs look like sheep with their white coats blending in with the flock. The dogs were brought in for extra protection from the coyote populations around the ELF, which have been known to eat the lambs during the summer and fall months. Below is a photo of Candy and I after her first day at the ELF.

— A photo with Candy. One of the sheep guard dogs for the ELF

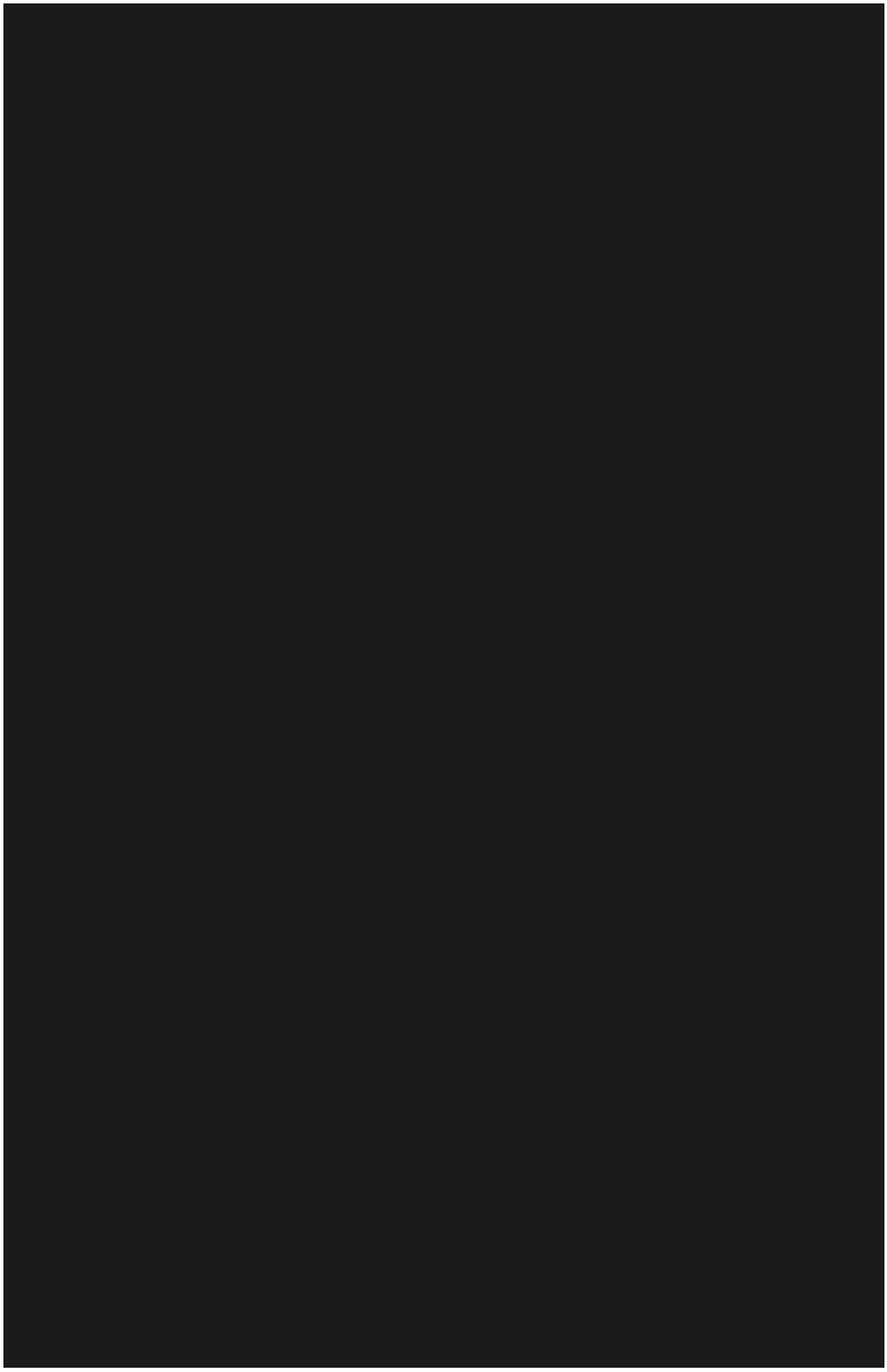
On Wednesday because Betsy was out of the office at a local foods meeting, I was assigned to work with Charlie, the farm manager, and helped him take down and build fencing in order to move the sheep into a new pasture. The sheep are certainly ecstatic whenever they are moved to fresh grass as seen in the video below. That afternoon, Charlie and I set up a detachable water tank so that it can be easily transferred as we move the sheep from pasture to pasture over the course of the summer. This will greatly ease the time necessary to move the flock when it gets unbearably hot and humid over the long summer months.

Thursday morning was another day set to building more fence for the sheep's ravenous grazing habits. After we

were finished with the fencing, we headed back to the office with nothing left planned for the day but paperwork to be filed. Then all of a sudden, at about 2 O' Clock in the afternoon, Betsy received a call from a local farmer who had a sheep die overnight and the rest of her flock was not looking up to par. So Betsy decided that we would drive out to her farm and perform a necropsy (the equivalent of an autopsy on an animal) to figure out what caused the sheep to die. Upon arrival at the farm we went to view the flock and they looked frail and physically weak. We then went to the pen of the deceased sheep and begin opening its abdominal cavity to look for indicators that would suggest cause of death. However, after investigating the organs of the ewe, nothing could be found that would indicate signs of death besides swollen lymph nodes. After we left the farm, Betsy suggested that the farmer look to feed their sheep more hay and grain in order to build up the sheep's body condition to standard.

— Investigating the sheep's organs for possible causes of death

Finally to conclude the week, we started out Friday morning with another round of fencing in order to fence off pasture for the sheep to consume next week's pasture. Then we spent the afternoon weighing the pasture samples again in order to find the samples' dry masses. Calculations were then recorded after the masses were identified in order to find the percent dry mass and the percent birdsfoot trefoil in each pasture. Then to finish out the day; Jeff, Betsy, and I went to practice collecting semen from the ELF's rams. In order to do this we stimulated estrus in a ewe and used an artificial vagina (AV) in order to collect semen from the ram. Overall, we were able to collect about 7 milliliters of semen and looked at it under the microscope for evaluation. We found the sperm of the sample to be highly motile, which is encouraging because motility is a characteristic highly correlated with fertility. This session was only practice as the farm's future goal is to be able to collect semen from a ram and then overnight it to another producer anywhere in the U.S. to improve genetics and sources of income. The video below shows the common semen collection process used for rams.



Next week's plans include vaccinating and deworming the ELF's sheep and lambs, which equates to almost 200 animals and will certainly keep us busy. Make sure to check back next week to see what progress I've made!

-Conor McCabe

Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

Week 2: Birdsfoot, Beef, and Soybeans

Posted on **June 15, 2015** by **Conor John McCabe**

To start off the second week of my time at Cooperative Extension, I became quite familiar with the plant birdsfoot trefoil. This plant is a high-tannin legume, and for the purposes of the study it is believed to decrease internal parasites in sheep and goats. At the Extension Learning Farm there is an approximately 3 acre plot where birdsfoot was planted in the spring and the weaned lambs will graze there for purposes of the study in about a month. My job on Monday and Wednesday was to collect 400 square inch samples of this plot and separate the sample into birdsfoot trefoil and all other types of plant species. The plot at ELF is divided into four quadrants with two of them grown using organic fertilizers and the other two grown using inorganic fertilizers. I was assigned to capture six of these 400 square inch samples per quadrant to make a total of 24 samples from the entire plot. In order to cut the forage from the plot, I was given a pair of electric clippers and I worked with the other intern Jeff Du, and we were able to finish this sampling project by late Wednesday afternoon.

— Distinguishing Birdsfoot Trefoil From Other Plants

— ELF Birdsfoot Trefoil Plot

On Tuesday, because Betsy was out of town at a Sheep conference in Rochester, NY, Jeff and I went to sample the birdsfoot trefoil plot at Asgaard Dairy Goat Farm. On our travel to the farm in eastern New York, we stopped at the Lake Placid Olympic Center, which happens to be home to the “Miracle on Ice” where the major underdog U.S.A. hockey team beat the U.S.S.R. to shock the world. Asgaard is also included in the grant proposal and they have a similar three acre plot integrated with birdsfoot trefoil where they will later graze their wethers(castrated male goats) to test the effectiveness of the high-tannin legume’s ability to reduce internal parasites. However, the farm managers had already allowed their beef cattle to graze about a quarter of the birdsfoot plot, which allowed us to sample the difference in grazed vs. non-grazed portions. We took six samples from the non-grazed portion and six from the grazed portion. As you can see in the photos listed below and above, the plots have different species diversity as the one from Asgaard is lined by white flowers and the one at ELF is mainly green and uniform in plant specie distribution.

— Asgaard Birdsfoot Trefoil Plot

Wednesday morning a group of third graders was visiting ELF and they were given several presentations on different aspects of farm operation. I gave a presentation on swine and their role in the farm and how they are used as production animals in modern day agriculture. The kids enjoyed the presentation especially the sow and her five piglets, which each of them wanted to take home. However, I reminded them that these piglets will be about 260 lbs

in five months and they all quickly changed their minds.

— Presenting Swine for Third Graders

On Thursday, Betsy, Dr. Baker, and I went to Northern Limits Farm, which is a stocker cattle farm owned and operated by Joe Eisele. He owns over 300 stocker cattle every year during the grazing season and he runs them on pasture and sells them to feed lots to feed out to slaughter weight or sells them for beef. The study being performed on Thursday was measuring the effectiveness of implants on weight gain in stocker cattle. For the experiment there were 40 cattle selected with 20 of the cattle given the implant and 20 left as the control. The implant selected for this study was Revalor-G, which is a popular implant used in commercial operations to maximize weight gain by slowly releasing estradiol and trenbolone acetate into the blood stream. At first we weighed all of the cattle coming through the scale and then we randomly selected half of them to implant with Revalor-G by catching them in a squeeze shoot. The cattle will be evaluated in approximately three months to see if the use of the implant caused an increase in weight gain compared to the cattle without an implant. Below are photos of the cattle being weighed and a steer receiving the implant in its ear.

— Taking Initial Weights on Beef Cattle

— Injecting Cattle with Implants

Finally to end the week, I went with the regional cooperative extension agronomist, Kitty O'Neil to plant soybeans in a test plot as part of her research projects. The goal of this experiment is to evaluate the effectiveness and best performing type of soybean in the Northern New York environment. Overall, we planted seven different types of soybeans by using a small seeder that helped speed up the process immensely. Below is a photograph of the seeder in operation. The soybeans will be harvested in a couple months and evaluated for the most productive/efficient type of soybean that is best suited for the Northern New York region.

— Planting Soybeans

Next week I will be calculating the percent birdsfoot trefoil from the plot samples. Check back next week to see the progress I've made.

-Conor McCabe
Beef Cattle and Sheep & Goat CCE Intern

Posted in **Evaluation of Technologies to Improve the Competitiveness of the Stocker Cattle Enterprise in New York**

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