

1. Sheep Pasture Improvement and Planting for Drought Resistance
Grant FNE 03-499

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2. Goals

After years of unproductive pastures I knew I needed to expend more energy and money as well as elicit professional help to improve my pastures, especially since we have experienced summer drought conditions in the fast five years. Simply spreading manure from the barn, occasionally spreading lime, and less occasionally plowing and seeding had not produced good results, especially in the last few dry years.

My goal was to improve and prepare the land in the best way, plant it with seed that could withstand dry summers, and produce two one-acre pastures that would not just start with promise then fade as a dry summer progressed. I did not want to be feeding hay even before summer came to an end as this greatly increases feed costs.

3. Farm Profile

Windy Hill Farm is a small twenty-two acre farm which gets lots of notice because it is one of the last working farms in a town that is rapidly growing as a suburban commuting community, the last stop on the train rails from Boston.

This land has been farmed since the seventeenth century, the first settlers just a couple generations descended from Mayflower stock; the land was purchased from Indians. Soil analysis shows the land to consist of Hinckley soil which retains little moisture and over the last 150 years production emphasis has changed: Subsistence farming, vegetables, orchards, chickens, thoroughbred horses.

We have raised sheep here since 1979. We keep a breeding flock of about three dozen animals. One third of the flock is registered English horned Dorsets for a meat lamb crop at Easter. Two thirds of the flock is a wool flock of Corriedale-Cotswold crosses which provide us with hand spinning and weaving fiber which we make into yarns and woven products to sell. We teach spinning, floor loom weaving, and Navajo tapestry weaving in a studio in a converted barn. As time passes the value-added aspect of our operation becomes increasingly important to our financial viability.

4. Participants

Before retiring my principal occupation was that of a high school English teacher, and farming was my avocation. I used to feel too insecure about my lack of knowledge in some aspects of farming to seek help,

fearing to appear inept. Getting this grant forced me to network for the first time; it has been an eye-opening experience. I now feel much more connected to people who can be of great assistance to me, and I am certainly less self-conscious about what I might not know. Many people have been helpful, but three in particular are mentioned here.

My technical advisor is Garret Keegan, an environmental engineer, who is employed by Prime Engineering here in Lakeville. His knowledge of chemistry and soils along with his creative capacity for problem solving and research were invaluable to me. He gave me many options and was very objective about all the approaches he offered. For example, he investigated a bio-solid product made from human waste and processed to be a natural organic product. Ultimately I decided against the use of this product.

Gary urged me to take soil samples from many different areas of the two fields I wanted to replant, as well as take several from areas which I knew were in good shape (such as my vegetable garden) for the sake of contrast. I took seven samples from the two pastures and two from areas I know are rich. Gary created a "fertilizer budget" chart showing what needed to be done in the four areas of the two fields to be planted. His thoroughness and advice at every stop of the way provided me with information and choices I would not have conceived of on my own.

Max Lawrence at Sunnynook Farm provided me with advice about soil, composting, and fertilizers. And while I did ultimately purchase compost from him, he never tried to push any of his own products or services. He made every effort to put me in contact with others who had products I could use.

Sam Shields of Blanchard Farm brainstormed with me taking time from a very busy schedule. He acquainted me with an organic pelletized chicken manure fertilizer which I used with success. Sam also made me aware of a Farm Viability grant which I have been successful in securing to help us improve our weaving studio.

The three people mentioned here gave me a quick and informal education that allowed me to ask pertinent questions of others at supply sources. This networking was of invaluable use to me.

5. Project Activities

*Two one-acre pastures were chosen for the project; I will call them Front pasture and Middle pasture.

*Each pasture was divided in half because of differences in soil. I will call them Front A and B, Middle C and D.

*Three soil samples were taken in Front pasture, two in A, one in B. A had only 3.8% organic matter while 4-10% is desirable. B had 3.9% organic matter but was much higher in nutrient levels. Two tons of calcite lime were recommended for this field.

*Four soil samples were taken in Middle pasture, two each from sections C and D. Organic matter was

4% in C and 5.2% in D. Nutrient levels ranged from low to medium. Two tons of lime were advised.

*Two soil samples were taken from two garden areas I have been working on over the years as a contrast to the samples from the fields. One area had a 5% organic matter level; the other was 10%. Nutrient levels were high to very high.

*35 yards of composted soil was delivered and spread in Front pasture with the heaviest concentration in A because B had received more barn manure. 35 yards of composted soil was delivered and spread in Middle pasture with the heaviest concentration in the spots that had tested lower in organic matter.

*Two tons of lime were spread in Front pasture. Unfortunately, through misunderstanding, only one ton of lime was spread in Middle pasture. (Another ton will be administered this spring.)

*Front pasture was rototilled to aerate the compacted soil and planted with 75 pounds of Pasture Green Agway seed, it was rolled, then spread with 300 pounds of pelletized chicken manure which is 10% humus and 60% organic matter.

*Middle pasture had ten yards of cow manure and several months of stable and sheep manure spread, rototilled, and planted with 75 pounds of Blueseal Equigraze seed. (Both pasture seeds were chosen because they contained tall fescue which is good for intense grazing and which has deep roots for maximum water absorption.) The seed was rolled down.

*Each area A, B, C, and D had spots near driveways or lanes where New England wildflower seeds were broadcast.

6. Results

In the spring I put up a rain gauge which measured nine inches of rainfall in May and June. This greatly aided germination of the pasture seed. As summer wore on rain was spotty with less than four inches in each of July, August, and September. However, the grass came up lush and tall along with the wildflowers.

My original intention had been to let the pastures grow without being grazed the first season, but as the pastures in use suffered with increased heat and diminished rain as summer progressed, I relented and turned some of the sheep onto the new pastures for three days at a time as I rotated them successively through seven grazing areas. By September the two new pastures looked ragged, and I mowed them with a brush hog.

Front pasture seemed more productive, especially in the B area, perhaps due to the fact that this field had the full complement of lime recommended. Also this pasture has more shade and is less open to the

beating summer sun. Middle pasture did well but not for as long. The one load of cow manure that I could get was not sufficient, nor did this pasture get the second ton of lime it needed. Top dressing both pastures this coming spring will help.

7. Conditions

Front A and Middle D are near barn and stable respectively, so each of these areas gets more manure from barn mucking-out. These were the areas that did the best throughout the whole season and into the fall. I know I need to have a more equitable method of spreading manure. Much more organic content is needed everywhere.

8. Economics

I have never before spent money on investigation. Soil sampling was invaluable--a small expense providing a big benefit. While cow manure was once free or cheap, now that it is rare and must be trucked from thirty miles away, it is very expensive. Likewise, composted soil. Without the help of this grant I would not have done this project because I would have been intimidated by the costs. Because of inquiring about large amounts of compost, the manager at the local landfill has offered me large amounts of compost next spring at no cost. I will use this for top-dressing.

Last year (2002) diminishing pastures in August, September, and October forced the feeding of two bales of hay each day for a total cost of over \$800. This year no hay was fed out until November. As I replant other new pastures the savings will mount, not to mention improved nutritional value.

9. Assessment

The good results of my project have shown me the need of large infusions of composted soil on my land which is a dry gravelly kind of dirt. I will no longer depend only on the manure which comes from the barns; it is not enough. A tractor which has recently become available to me will be used in creating compost. Top-dressing and liming must be done with greater regularity. I always knew I had to "feed" my garden soil, but somehow I never saw the same needed to be done to the pastures.

10. Adoption

I see how one good pasture is better than three that are mediocre, so I will be putting in place a regular program of aerating soil, adding compost and manure, and augmenting with lime, winter rye, and organic pelletized chicken manure, the latter being manufactured close at hand and easy to handle. I hope at least

every second year to replant the older pastures in succession to make each of them more useful and productive. I am hoping the wildflower seeds scatter to provide even more spectacular spots of color.

11. Outreach

Not being a farming community any more, at first I was unsure how to tell others about my project. 2003 was the 150th anniversary of this town, however, and as a member of the Lakeville Arts Council I helped to organize an open studio tour as one of the anniversary celebrations. I saw this as an opportunity to talk to potential visitors about the integration of land improvement, flock of sheep, quality of fiber produced, and then the spinning and weaving process in the studio. Our final product, after all, depends on the symbiotic relationship among all these elements.

We had good publicity for the studio tour (farm and studio, in our case). Two local gazettes and two city papers carried pictures, information, and directions. Signs, posters, and maps directed visitors to the studios of the ten participants. At our farm we had sixty visitors. They had the opportunity to walk down a lane through the farm to the studio and hear about the two new pastures; they got to inspect the flock and look at raw unprocessed fleeces; finally they came into the studio and saw us demonstrate spinning and Navajo weaving; they were also able to look at our handspun wools and hand-loomed weavings. Based on our open house that day several people signed up for weaving classes, several sales of wool were made, and several sales of wool flock lambs were made to people with small homestead type farms. From lambs sold that day others have called to talk to be about how to make a small acre or two more productive and appropriate for raising lambs for 4-H or back-yard projects. We are planning another farm tour for the coming spring.

Based on my feeling of success in this project, I heard about another grant possibility from one of my cooperators, and I applied for and received a Farm Viability grant. Twice I have had farm visits from Rick Canole and other members of Southeastern Massachusetts Agricultural Program (SEMAP) who see my start with the SARE grant as an important beginning to take my farm from being the hobby and lifestyle of a family of teachers to being an economically viable community asset that could grow into a family business that features the value-added products that we spin and weave.

Submitted by Richard S. Tripp on January 22, 2004.