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2012 Farm Plan Update

This our second season with the entire farm certified organic. Our only products that are not certified are our honey and our breeding stock in the hog project. We also have three nonorganic rare breed hogs that were raised on the Maverick Ranch in South Dakota. We have raised these hogs using organic practices since we brought them to our farm in September of 2011. We plan to butcher all three this summer. The meat will either be consumed on the farm or sold as nonorganic old-breed pork.

High Tunnel Number Two

All of the berry plants in Tunnel Two will have been under organic practices for one full year and will be eligible for certification by harvest this season.

Berry Production

We should have a few new organic berry crops this season available for wholesale this year. Our blackberry planting should produce a substantial amount of fruit for the first time this year. Our specialty raspberry planting should also produce a good volume of purple, yellow, and black raspberries.

Apple Production

We planted an additional half acre of late season disease resistant apple varieties in block 13. The nursery stock was grown here in our nurseries. We also cut down the remaining disease susceptible McIntosh trees in block 9 West. We topgrafted the stumps to a new scab immune variety called Galleria. Now block 9 west consists of the disease resistant Honeycrisp and the scab immune variety Galleria. This block will now require fewer fungicides.

Meat Production

We are expanding our meat production in 2012. We will continue to experiment with flash grazing through our orchards and gardens. In 2011 we constructed energized pasture fences between the new woven wire deer fences and the borders of the orchard blocks 4, 11, 14 on the south side and 8, 10, and 12 on the north side. We plan to complete the fencing on the north side of the farm this spring giving us easily accessible pastures around much of the fruit production area.

Hogs

In 2011 we purchased eight old breed hybrids from a specialty breeder in Missouri. These hogs were raised organically and flash grazed in the orchards or held in pastures on the farm. Six of the hogs were butchered and two were held for breeding. In September we acquired eight rare purebreds and four hybrids from the Maverick Ranch in South Dakota. Two of them were butchered in 2011. Our herd currently consists of the following:

2 American Guinea sows
1 Ossabaw Island sow

4 Ossabaw Island gilt
1 Large Black cross sow
1 Gloucestershire old spot cross bore
3 American Guinea x Ossabaw Island hybrids (plan to butcher this spring)
4 liters of piglets farrowed in March and April (22 piglets' eligible for organic certification)

Chicken

We plan to produce around six hundred organic range chickens this year. We plan to raise four groups of 150 that will be rotated around the farm. We will raise a combination of old heavy breed birds and French Freedom Rangers. We plan to process four times and the meat will be sold as organic.

We plan to keep a flock of around 30 layers to produce eggs for on-farm use.

Other Poultry

We plan to raise 50 water fowl that will be used to weed strawberry beds and rotate through other areas of the farm. We also plan to raise 30 turkeys to be rotated around the farm.

Forage and cover crops

In 2012 we plan to grow about five acres of cover crops and forages for our animals. We have purchased seed for field corn, oats/peas, sudan sorghum, crimson clover, and some pasture blends. The exact location of each plot of each crop has not yet been determined. These small plots will be planted in blocks, 1,2,3,6, 10, 11, 14, 15, 17, 18, and 19.

Deer Fence

In 2011 we completed the replacement of energized fencing with ten foot woven wire. All our tree fruit blocks are now protected by woven wire fencing. Blocks 17 and 19 are not yet fenced. We have a small strawberry planting in block 19. The remainder of block 19 and block 17 will be used for cover crops and forage crops.

Pest Control

We are attempting to reduce our impact on the environment by integrating the use of compost teas into our disease control program. Our current program depends on the use of micronized sulfur and liquid lime sulfur to control apple scab, rust, and sooty blotch. While these compounds are allowed under the NOP rules they can be disruptive to the microorganisms in the soil and on the trees. Our current system is designed to minimize the use of these mineral compounds but is still very dependent on them. We are going to try to replace the sulfur based compounds with several applications of compost tea

Jackie and I participated in two classes at the Rodale Institute taught by Dr Elaine Ingham. We took one class on making compost teas and extracts and second class using the microscope to do qualitative analysis of the tea and soil samples. After extensive reading on the subject and two days of course work we feel confident that we can produce and assess good quality teas and extracts.

Concept

Teas and extracts are created by using highly oxygenated water to steep high quality compost. Rapidly moving water and air bubbles pull the beneficial microorganism from the compost and concentrate them in the water. After a few hours of extracting the organisms a nutrient is added to the tea and it continues to mix and aerate for another day. This (brewing) time stimulates the beneficial organisms to grow and reproduce in the nutrient rich oxygenated environment. The brewing also stimulates the aerobic bacteria and fungi to produce the biofilm that binds them to plants.

Most pathogenic bacteria and fungi thrive in an anaerobic environment and are either killed or forced into dormancy during the brewing process. At the same time the beneficial aerobic organisms thrive. The tea is kept in a highly aerated state right to the point it is sprayed onto the trees. A good quality tea has a great diversity of microorganism. The organisms that are best suited to the environment in the orchard at the time of application will grow and thrive on the plant surfaces. These beneficial or inert organisms will populate the surface of the leaves and fruit and outcompete the disease organisms when they try to infect the tree.

Strategy

We will be brewing teas using a variety of commercial organic composts and nutrients to develop a recipe that produces the proper ratio of bacteria and fungi to combat apple scab and other diseases. We will focus our applications during the most critical periods in the development of the disease organisms.

This year the teas will be brewed using commercial organic poultry compost and worm castings. We will use organic fish hydrosate, Naturall CS molasses, and Crockers Fish Oil as brewing nutrients. We will evaluate these different brews using the microscopic qualitative assessment developed by Dr Ingham. We have also started mulch piles using large amounts of woody material to create a slowly decomposing fungal rich material that can be blended with the materials for organic composting in the future.

We have selected four blocks of apple trees consisting of about six acres to test the teas. Sulfur products will be completely eliminated from the disease control program in these blocks. A second orchard sprayer will be designated for applying the compost teas. Most microorganisms are highly sensitive to sulfur. Separate sprayers should eliminate the risk of sulfur residues in the sprayer harming the organisms we are trying to propagate.

Long Term Goals

If the compost tea program proves to give consistent results, we will expand its use to other blocks. If the program cost less but gives a lower packout of the highest quality apples, we should be able to do a cost benefit analysis and potentially convert the entire orchard to a compost tea program. For now we will use this program on about 1/5 of the orchard and in the process reduce our application of sulfur products.

Other uses for compost teas

While the use of compost tea to control apple diseases in the Midwest is untested, the benefit of teas on vegetables and small fruit is well documented. We will be applying compost teas to the greenhouse, high tunnels, and berry beds throughout this growing season.