



Nutrient Dense Hugelkulture:

An Experiment in Land Management at Woody End Farm

Goal: Take all of the surplus organic materials on the farm, add essential missing pieces and use them to create useful and productive land. Aim for high productivity of nutrient dense and healthy plants and animals with the least amount of maintenance possible. A tall order!

The Challenge:

- Mid 1700's family farm with very poor quality old pastures – grey podsol clay with very low pH (5.2), and not much of anything needed to grow decent crops of any kind except low bush blueberries. N,P,K, Ca, Mg barely register on a soil test.
- Parts of the land are very dry and parts are very wet. There are several dug wells and drainage ditches crossing through the open fields near the house and barn.

Resources (all that surplus organic material and more):

- The ice storm of December 2008 left piles and piles of wood. All tree canopies around the house and fields were shattered. Seven huge piles were burned and still there is wood! All woodsheds are full and still there is wood!
- Manure from 1 horse, 10 goats and 4 ducks. All of the manure is from healthy animals provided with all minerals needed for optimum health. All manure is mixed with wood fiber (shavings or sawdust) and hay.
- Decent quality loam available for purchase in the area – Sterling Peat's peat/loam blend.
- Stone dust that has been observed to grow decent plants – Pandolph Perkins (although a good basalt stone dust might be better)
- Minerals and soil amendments available at The Good Earth Farm and Garden Center
- 38 years experience with growing plants, an odd twist of thinking and lots of books!

Take all of these resources and what do you get?

NUTRIENT DENSE HUGELKULTURE BEDS!

Hugelkulture (HK) beds are versions of the mid European concept of mound culture – piling up woody plant material, covering it with compost, manure or other organic material and planting in the middle of it. It could also be looked at as a take-off on the concept of nurse logs – burying logs near stressed trees in order to provide both a source of nutrients for beneficial fungi associated with trees and water for both the fungi and the tree roots as the logs decay.



Nutrient Dense Farming is way of looking at food production that maximizes the health of the food produced and thereby increases the health of who ever eats that food. It uses the tenets of organic, ecological, biological, bio-dynamic, re-mineralization and other kinds of farming & gardening to produce the best quality food and it documents that vitality through independent tests like brix readings – other test instruments coming soon.

The HK beds at Woody End Farm start with the basic mound approach and add the concepts of nutrient density crop growing to create (we hope!) biologically active, water managing, minerally dense, low maintenance beds. We'll use some direct investment in materials (loam, minerals etc.) a minimum investment in equipment (hired use of a tractor with a front-end loader) and with the end result of maximum production level per developed square foot. The beds should be able to sustain at least two growing levels at

a time – double cropping.

What we're using today on and in the HK beds: (This is from the day we built our first bed)

- Layer 1:** Larger logs – some very large – coated with dolomite (Ca/Mg) limestone (already laid out with lime spread).
- Layer 2:** Compost – pretty fresh – worked deep into the open areas between the logs – provides the nitrogen for the wood's decomposition and also adds the phosphorus and potassium found in manure. We've been adding calcite lime to the manure as it's cleaned out of the barn or we would be adding it at this point.
- Layer 3:** More logs – smaller now and worked into the grooves if they still exist – also working to balance the height of the final bed
- Layer 4:** More manure – mostly composted this time – and we'll add the calcite lime because it's from an older pile that didn't get the lime added during removal from the barn.
- Layer 5:** Small branches to complete the integration of wood through the bed.
- Layer 6:** Topsoil – from Sterling peat – their peat/loam blend – at least six inches if we have enough – 4" otherwise.
- Layer 7:** Stone dust – from Pandolph Perkins – between 1/8" – 1/4" – to help break up the "new loam crust" that always happens and to add that raw mineral component.
- Layer 8:** Minerals and microbe boosts – alfalfa meal, rock phosphate, greensand, azomite blended together on a tarp (wear a dust mask if necessary) and worked into the loam layer with a cultivator.
- Layer 9:** Shredded leaves and grass clippings provided by a local landscaper. We won't do this today. They'll be delivered as he cleans down his sites – added as they arrive.

