	[redacted]	Soil Test 7/16/24 Analysis 7/23/24	NOFA/Mass [redacted]	
	Targets for Minerals and Micronutrients		Recommendation	Comment
	Sample ID	Paddock #1		
	Lab Number	47		
	Sample Depth in inches	6		
	Total Exchange Capacity (12+)	6.62		Low, but this will increase as you add the soil primer referred to below.
	pH of Soil Sample: (6.3-6.5 pH)	5.5		Low, the limestone will enable this to be raised to a level where more minerals are available to the forage.
	Organic Matter, Percent (5-10%)	4.9		OK, organic matter will enable more water to be stored, forage to be healthier and for more resilence to drought. The soil organic matter is also a home to microbes that make the minerals available to plants. The soil primer will help bring this level up.
Anions	SULFUR: (75 p.p.a.) ppm=2*ppa	40	35 lb Gypsum	LOW, sulfur is recommended in the form of Gypsum.
	Mehlich III Phosphorous: as (P_2O_5) * 0.4364 = P lb/acre (150 ppa)	173	1200 lb of Fertoz Soft Rock Phospate	Ok, Fertoz Soft Rock Phospate is recommend to make this often unavailable mineral more available to plants
Exchangeable Cations	CALCIUM: Desired Value	1800		
	Value Found	1428	1100 lb of Hi-Cal Ag Limestone	LOW, Dolomitic limestone and Hi-Cal limestone are recommended.
	Deficit	-372		
	MAGNESIUM: Desired Value	200		
	Value Found	81	3600 lb Dolomitc Limestone	LOW, Dolomitic limestone contains both Calcium and Magnesium
	Deficit	-119		
	POTASSIUM: Desired Value	206		
	Value Found	93	1500 lb of Potassium Sulfate (SPRING)	LOW, Potassium Sulfate is recommended and will be applied in Spring, since your pasture should be established, this will not be tilled in.
	Deficit	-113		
	SODIUM: lb/acre	84		
Base Saturation	Calcium (60% to 70%)	53.93		
	Magnesium (10 to 20%)	5.1		
	Potassium (2 to 5%)	1.8		
	Sodium (0.5 to 3%)	2.77		
	Other Bases (Variable)	6.4		
	Exchangeable Hydrogen (10 to 15%)	30	Rejuvenate 5 gal, Sea-Shield 5 gal, Spectrum 5 acre	Regenerative Soil primer recommended to be sprayed on pasture in fall and spring.
ce Elements	Boron (3 ppm)	0.35	Forage Foliar Blend from AEA (SPRING) 5 gal	LOW, most of the trace elements are low from Boron to Silicon. Forage Foliar Blend from Advancing Ecoagriculture is recommended to applied as a liquid foliar spray diluted with water according to the label instructions. This can be added to the primer in the spring.
	Iron (50-75 ppm)	103		
	Manganese (80-90 ppm)	8		LOW

Trac	Copper (4 ppm)	0.66		LOW
	Zinc (8 ppm)	1.23		LOW
	Aluminum (ppm)	1723		
Other	Cobalt (2 ppm)	0.051		LOW
	Molybdenum (1 ppm)	0.03		LOW
	Selenium (0.5 ppm)	0.5		OK
	Silicon (50 ppm)	6.9		LOW
	Estimated Nitrogen Release #N/acre	99		OK
	EC	0.09	BioCoat Gold Seed inoculant - 4 oz per 100 lb of seed or 4 oz per acre Depending on the seed you choose - 25 to 35 lb per acre	Forage Seed from Albert Lea and enough Bio Coat Gold Seed inoculant from AEA to coat the amount of seed that you will plant.

If this is a worn out pasture, you may consider whether it needs to be reseeded. Generally the seed companies recommend doing this in August. The amendments need to be tilled into the top 6 inches of the soil, so seeding directly after application in August is best. Biocoat Gold is recommended as a seed inoculant and is mixed in with the seed in the seeder. The soil's major minerals: Calcium, Magnesium, Sulfur and Potassium are deficient, so the first priority is to bring the levels of these up to balance. Dolomitic limestone is recommended for adding Calcium and Magnesium. Additional Hi-Calcium limestone should be used to bring the Calcium level to the desired level. Gypsum is recommend to build Sulfur. These limestones will raise the pH up to a level that is needed for pasture growth between 6.3 and 6.5. Once the seed is established, a fall primer to add biology to the soil is recommended. Once minerals are balanced, biology is required to help make those minerals available to the plants. The regenerative soil primer should be applied AFTER the forage has established. This can be done with a back pack sprayer of the 4 gallon variety, unless larger equipment is available to you. The soil primer is made up of Rejuvenate, Sea-Shield and Spectrum which are diluted in water and sprayed over the grass in a fine mist. These products are found at Advancing Eco-Agriculture in Ohio. Late March/early April: since Potassium can leach out of the soil over the winter, it is recommended that it be applied in the spring. Following Potassium application, repeat the same primer you used in the fall, but at the forage foliar blend to it. If you have any bare spots, over seed with forage seed. The major minerals are available through Fedco Growers Supply and Progressive Growers in West Wareham, MA. Albert Lea is a good company to order seed from, they have some seed that is specific for grazing horses. Advancing Eco Agriculture or AEA is the source of the BioCoat Gold seed inoculant and liquid nutrition products.

Think about your soil having three components: chemical (minerals and trace elements), physical (aggregate sizes, # of earth worms, ability for water to infiltrate) and biological (microbial biomass, bacteria to fungal ratio) In order to grow high quality food we need to focus our soil improvement efforts on these three components. Tracking these three components over the years will enable you to see the difference in your plants and produce. Soil testing and added minerals and micronutrients that are deficient is the first chemical pillar. Addressing the physical and biological aspects of your soil will give you additional garden success.

Physical Pillar: Soil Health Assessment DIY. This manual will walk you through ways to test the physical aspects of your soil. https://www.nofamass.org/wp-content/uploads/2021/05/NOFAMass-Carbon-Proxy-Test-Manual.pdf

Biological Pillar: We recommend a seed inoculant that is applied to seeds within your seed packages, just a pinch will do. BioCoat Gold or Myco Seed Treat and Peas and Legumes Inoculant for those varieties. The Spectrum and Rejuvenate are great for a soil inoculant at transplant, but Spectrum does not contain Mycorrhizal fungi like Biocoat Gold. Both will enable you to increase the biology in the garden. The biology is what makes nutrients available to the plants.

APPLICATION: Please take care not to apply dry amendments on a windy day, wear a mask and safety glasses so that small particles do not end up in your eyes or lungs.

Let me know if you would like to discuss on the phone.

Thank you!

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