



Amending soil with Gypsum Products (Code 333) Conservation Practice Job Sheet

Description - Using gypsum (calcium sulfate dihydrate) derived products to change the physical and/or chemical properties of soil.

Purposes (check all that apply)

- Improve soil health by increasing infiltration and improving physical/chemical properties of the soil.
- Improve surface water quality by reducing dissolved phosphorus concentrations
- Improve water quality by reducing the potential for pathogens transport
- Ameliorate subsoil Al toxicity

Where Used:

This practice applies where land application of gypsum products will be used to alter the physical and/or chemical characteristics of soil to help achieve one of the above purposes.

This practice apply to soils with CEC of greater than 5, soils with pH of greater than 5.8 (there is not a liming recommendation), soils with an extractable Mg more than 200 lb/ac.

It does not apply to organic soils or to remediate sodic soils.



Applications:

Application must be based on a current soil test and be made in conjunction with the implementation of an overall system to improve soil health and reduce nutrient loss risk. Therefore, broadcast applications are to be made on the soil surface and not incorporated, the implementation of nutrient management (code 590) and a system of crop management (residue management, crop rotation and/or cover crops) that will result in improving soil health will be needed in conjunction with this practice to enhance the soil health and water quality purposes.

There may be multiple sources of gypsum available that will meet the purposes of this practice. Generally gypsum will be mined or Flue Gas Desulfurization (FGD) gypsum. FGD gypsum is a synthetic product derived from flue gas desulfurization systems at coal-fired electric power plants. These gypsum derived products must have a particle size of less than 1/8 inch and meet all applicable local, state and federal laws for land application. Obtain a chemical analysis of the gypsum from the provider before applications are made.

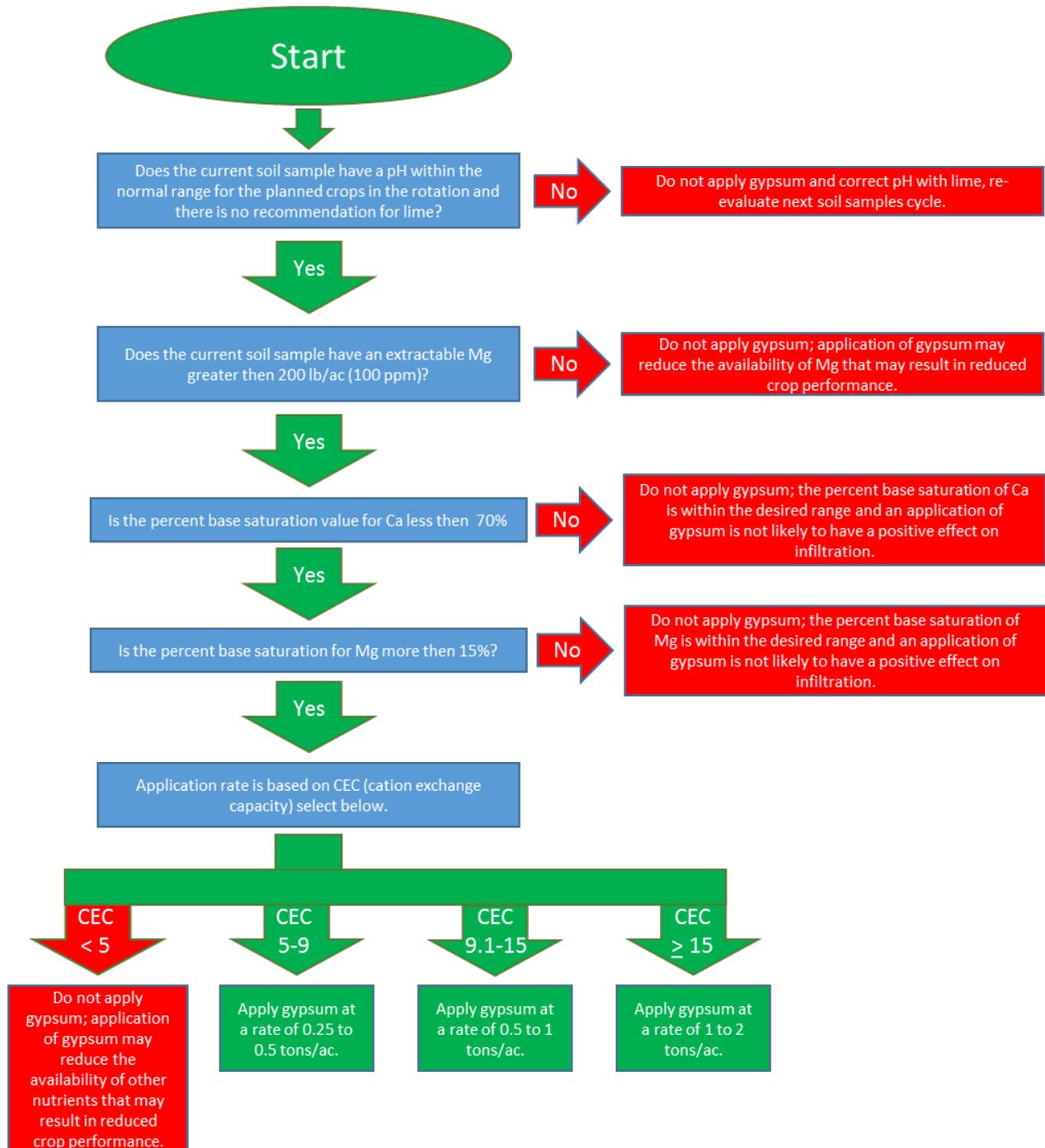
The soil samples taken that are going to be the bases for application rate and/or the need for the application must be representative of the entire management area. Field history, topography, soil type, past yields and other factors should be used to divide the landscape into areas with similar soil characteristics. Even after careful consideration to the field landscape and variability, no individual sample zone should represent more than 25 acres. For a detailed explanation of this process see "Soil Sampling to Develop Nutrient Recommendations" OSU Fact Sheet AGF-513-12 (http://ohioline.osu.edu/agf-fact/pdf/Soil_Sampling_to_Develop_Nutrient_Recommendations_AGF-513-12.pdf).

Application rates should be made in accordance with Fig 1. If applications are made at a rate greater than indicated in fig 1 the gypsum application may reduce plant uptake of other needed nutrients and may negatively affect crop yields. However additional applications may be needed to meet the desired purpose but should only be made after the next normal soil test cycle and a reevaluation of these results indicate an additional application is needed.



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Fig 1: Flow chart to be used to determine correct application rate of gypsum on non-sodic soils. Application should be based on a current soil sample, additional applications may be needed but should be based on the next soil sample after application (maintain current soil sample cycle). With additional applications start over with flow chart to determine correct rate.





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Producer:	Tract:
Fields:	

Type of product used: FGD gypsum Mined gypsum

Application timing: Fall Spring Summer fallow Other: _____

Fields	Sub-field	Area (ac)	Soil Test indicated Need	Application Rate (tons/ac)	notes
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
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			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		
			<input type="checkbox"/> Yes <input type="checkbox"/> No		

Maps displaying the needed parameters (pH, soil test Mg, percent base saturation of Ca and Mg, and CEC) to determine application rate and a map of the site specific application rate are attached. If attached the above table is blank.

For Questions Regarding the Application Contact: