

Updated Lime Requirement Recommendations for Oregon (7/22/2021)

The Oregon State University Soil Fertility Program has completed a formal evaluation of the Sikora buffer to replace the SMP buffer for estimating lime requirement in Oregon. This study was conducted to provide a non-hazardous lime requirement testing alternative to the hazardous waste producing SMP method. Twenty-four acidic soils from Oregon were tested for actual lime requirement using a lab incubation of lime and soils. The actual amount of lime needed to reach pH targets of 5.6, 6.0, and 6.4 was highly correlated to the SMP buffer ($r^2 = 0.91-0.93$) and the Sikora buffer pH ($r^2 = 0.91-0.93$). These correlations are the basis for new updated lime recommendations for both Sikora and SMP buffer pH methods (Table 1) and will be used to update OSU extension guides containing lime recommendations. The new SMP recommendations are included for the time being for the remaining labs still using the SMP method, but may be phased out over time as more labs switch to Sikora. We thank the Oregon Tall Fescue Commission for providing the necessary support to complete this project.

Table 1. Updated OSU lime recommendations for Oregon^a.

Lime requirement test value	New Sikora Recommendations			New SMP Recommendations		
	Target soil pH			Target soil pH		
	pH 5.6	pH 6.0	pH 6.4	pH 5.6	pH 6.0	pH 6.4
Recommended lime application to attain target soil pH^b (t/a)						
6.7	0	0	0	0	0	0
6.6	0	0	0	0	0	0
6.5	0	0	0.5	0	0.5	0.5
6.4	0.5	0.5	1.0	0.5	1.0	1.2
6.3	0.8	1.0	1.7	0.9	1.5	1.9
6.2	1.2	1.6	2.3	1.3	2.1	2.6
6.1	1.6	2.1	3.0	1.7	2.6	3.3
6.0	1.9	2.6	3.7	2.1	3.1	4.0
5.9	2.3	3.1	4.3	2.4	3.7	4.7
5.8	2.6	3.6	5.0	2.8	4.2	5.3
5.7	3.0	4.1	5.7	3.2	4.7	6.0
5.6	3.4	4.7	6.3	3.6	5.2	6.7
5.5	3.7	5.2	7.0	3.9	5.8	7.4
5.4	4.1	5.7	7.6	4.3	6.3	8.1
5.3	4.5	6.2	8.3	4.7	6.8	8.8
5.2	4.8	6.7	9.0	5.1	7.4	9.5
5.1	5.2	7.2	9.6	5.5	7.9	10.2
5.0	5.6	7.8	10.3	5.8	8.4	10.8
4.9	5.9	8.3	11.0	6.2	9.0	11.5
4.8	6.3	8.8	11.6	6.6	9.5	12.2

^aMinor method modifications have been shown to alter lime recommendations by 0.4-0.7 t/a. Soil standards from NAPT or other soil standardization programs can be submitted along with your soil sample to determine if a lab modification correction factor is needed.

^bRecommended lime application rates are based on an application of 100-score lime and 6-inch soil sampling depth. For example, if your Sikora lime requirement test value is 6.0 and you want to raise your soil pH to 5.6, apply 1.9 t/a of lime.