

AGRICULTURAL LIME AND GYPSUM COMPARED		
	Agricultural Lime	Gypsum
Chemical names:	Calcium carbonate – CaCO ₃	Calcium sulfate – CaSO ₄ 2H ₂ O
Common names:	Ground limestone – up to 100% CaCO ₃ Sugar beet lime – 80 to 90% CaCO ₃ Dolomite lime - 80 to 90% Ca CO ₃	Gypsum – varies in purity Land plaster – varies in purity
Expense:	Bulk delivered – approx. \$11/T	Bulk delivered – approx. \$30/T
Uses:	<ol style="list-style-type: none"> 1. Raises pH of acid soils by increasing exchangeable calcium and neutralizing hydrogen ions. May be desirable below pH of 6. 2. As a source of calcium in low calcium soils. 3. Occurs naturally in some alkaline soils but will not effectively reclaim them unless sulfur or sulfuric acid is added. 4. May slightly improve water penetration in acid soils (pH 6 or lower) but the improvement decreases as the pH rises. No improvement at pH 7 or above. 	<ol style="list-style-type: none"> 1. Will not neutralize acid soils or effectively raise pH. 2. As a source of calcium and sulfate sulfur (18.6% sulfur in pure gypsum). 3. Reclaims alkaline (high sodium) soils by replacing sodium with calcium. 4. May improve water penetration² by flocculating soil particles at any pH when: <ol style="list-style-type: none"> a. very pure (low salt) water is used for irrigation; b. the sodium absorption ration (SAR) of the irrigation water or the surface 6 inches of soil is greater than 10 times the electrical conductivity (EC) of the irrigation water; c. if the SAR of the soil exceeds 10 during the rainy season.
How much to apply:	<ol style="list-style-type: none"> 1. As a source of calcium: try incorporating 1 T/A. 2. To raise pH one unit, incorporate 1.2 – 2.3 T/A 	<ol style="list-style-type: none"> 1. As a source of calcium or sulfur: try incorporating 1 T/A 2. To reclaim alkaline soils, incorporate 2-3 T/A and leach. 3. To improve water penetration, try broadcasting, not incorporating, 1-2 T/A or add 200-1000 lb./acre-foot to irrigation water
<p>¹ Other less commonly used liming materials include hydrated lime, burned lime, and Dolomite.</p> <p>² Gypsum won't change clay soil to a well-drained soil. It has no effect on plowpans, claypans, or hardpans. Therefore, if water penetration is slow due to physical problems such as these, gypsum won't help.</p>		