King Conservation District

THE LOWDOWN ON LIME

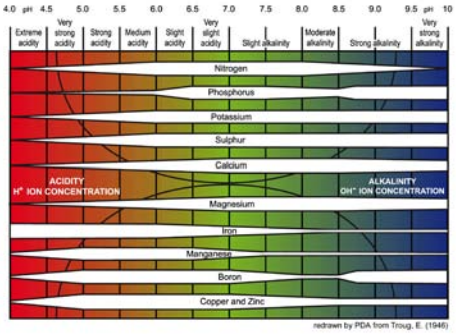
What is lime?

Agricultural lime is made from crushing limestone that contains high concentrations of calcium and magnesium. Soils in the Northwest are typically acidic due to factors such as rock type the soil comes from, topography and rainfall. To successfully grow crops and pasture, low pH (acidic) soils need to be raised to a pH level somewhere between 5.8 and 7 throughout the root zone (top 6-8 inches of soil). This can be accomplished through the addition of lime, which is something all crops and pastures in western Washington may require in order to stay optimally productive.

Limestone mine on Texada Island, BC, Canada

DETAILS

What results will I see when I apply lime?



Unlike fertilizers (which can actually cause problems when applied at the wrong time) lime can be applied anytime. Optimally, lime should be tilled into the soil before planting. However, for existing pastures it is best to apply lime during a rainy period so it breaks down faster. Aerating and/or mowing the pasture before applying lime will help the lime work its way into the soil.

Limestone is fairly water insoluble and will take time to break down. However, when you apply lime, you may see some immediate results. As the pH in the soil changes, nutrients such as nitrogen will become available to plants, giving them a lush, green appearance. Many nutrients are less available in acidic soil, while plant-damaging elements like aluminum and hydrogen are more available in acidic soil. Therefore, applying lime can reverse that scenario. It is more cost effective and healthier to correct pH before you determine any further fertilizer needs. Although lime will not kill moss or weeds, as your soil pH becomes healthier, you will notice they will be crowded out, especially if you keep your soil from becoming too compacted.

Common mistakes people make trying to correct pH are:

- Not getting a soil test
- Putting down all the recommended lime at once
- Over-fertilizing

One last piece of advice is to spread lime on a calm day and to get some moisture on your lime right away! The optimal time to spread your lime is right before forecast rainfall.

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How do I apply lime to my property?

For agricultural applications, limestone can be ground very fine so it can react rapidly with soil acidity to raise pH—the finer lime is ground, the faster it will work. Depending on the mechanics of spreading, most landowners will choose to use "limestone flour" or "fine grit."

Lime being spread with the KCD Broadcast Spreader

Since limestone becomes very dusty when ground so fine, some manufacturers offer "prilled", "pelletized" or "granulated" lime products. This means the very fine particles are bonded to a carrier product, such as clay, to help make the lime less dusty thus easier to spread. Just remember, use an agricultural lime (naturally occurring and minimally processed) and NOT a caustic lime product (a chemical compound) that can burn plants. Caustic limes are: calcium oxide, hydrated lime and quicklime. Visit *http://www.lime.org/* for more detailed information on the lime production process and types of lime available.

The PTO-driven cone broadcast spreader

Three Basic Steps for Applying Lime:

1. Test your pH and nutrient levels
2. Aerate or mow pastures
3. Buy and apply an agricultural lime

How much should I apply?

Your soil test results will have a recommendation for how much and what type of lime to apply. If your test specifies a high lime quantity, such as two tons per acre or more, spreading lime in two or three batches over the course of a year is more beneficial than a single application at the recommneded rate. It is preferable to spread less than two tons per acre in any one application. Depending on your specific conditions and soil test results, lime should be applied every one to three years.

To know how much lime to use, you will need to know what the pH of your soil is, what type of soil you have and what the nutrient levels are in your soil. These questions can be answered with a standard soil test. Your test results will tell you:

a) pH levels and corresponding lime requirements

b) Levels of available plant nutrients

c) Recommendations on nutrients needed to optimize yield

Contact the King Conservation District for information on our *free soil testing program*.

Unsifted lime powder fresh from the kiln

The range of J. A. Jack & Sons crushed/ground lime

Where does lime come from?

In November 2014, KCD planning staff took a tour of the J. A. Jack & Sons limestone processing facility in south Seattle. This company supplies most, if not all, of the limestone products available in the Pacific Northwest. Their primary mine is located on Texada Island near Powell River, northwest of Nanaimo in British Columbia. You can view additional pictures of the mining operation on their web site.

http://www.jajack.com/about.html

J. A. Jack & Sons supplies nearly all of the agricultural grade lime products for the greater Pacific Northwest. Trucks constantly cycle through the loading yard every day to pick up lime to deliver to farms and factories in the Puget Sound area and beyond. Limestone products are also shipped via rail car to other parts of the country. Visit their web site to see all of the specific products that they offer and the end products their limestone is used in.

http://www.jajack.com/Products.html

Where do I purchase lime?

Many feed stores sell lime by the bag under various labels such as "Dolopril" (a prilled calcium/magnesium product), "Calpril" (a calcitic lime if your soil doesn't need magnesium) and "Dolomite" (powdered lime). Anything with a derivative of "dol" in it will have magnesium. It is best to spread lime through some type of broadcast spreader. Sometimes drop spreaders will leave piles of lime, depending on which lime product you use. You can also purchase lime directly from J. A. Jack & Sons in Seattle. The amount of lime you need and the type of spreader you are using will determine the cost effectiveness of picking up the product or having it delivered. You can buy bagged product or get bulk either in a "tote" or loose.

KCD has a Broadcast Spreader Loan Program. To make a reservation, visit the information page on our web site to be added to the waiting list.

A lime spreader service for larger parcels

For larger acreages, spreading services are available from a couple of service companies in western Washington. Contact J.A. Jack and Sons in Seattle to find out who can service your area.