

The Use of Limestone Gravel Could Be a Labor Saver

Most of the soils or mixtures used in Colorado greenhouses were originally low in calcium and magnesium. The treated irrigation water presently in use may be quite acid, depending upon what fertilizer chemicals are added. Every pound of ammonium nitrate added to the soil will neutralize about one-half pound of dolomitic limestone, while a pound of diammonium phosphate takes one pound of dolomite out of action. When we consider that we add 12 to 15 pounds of ammonium nitrate per 100 square feet per year, this adds up to quite a bit of limestone that must be added to replace that lost through leaching and neutralization.

While calcium deficiency is rarely seen in Colorado greenhouses, the practice of adding 5 to 10 pounds of ground limestone, or more, per year per 100 sq. ft. is common. When mountain soils or artificial mixes low in calcium are used, this amount of calcium may not be enough.

For several years plants have been grown at CSU in volcanic scoria with a high degree of success. We especially like this medium for nucleus stock. More recently we have grown excellent carnations, snapdragons and roses in scoria. This medium is especially well aerated and easily handled but it is inert so all essential nutrients not contained in the water supply must be added. We have found that calcium is the nutrient most frequently limiting even though we add ground limestone as often as twice a year.

To correct this calcium hunger and we assume to supply all the calcium and magnesium the plants can use, we have added large chunks of limestone rock to the pots or benches of scoria. We have further assumed that so long as these chunks are visible, plants will get adequate calcium. For at least three years this has proven correct.

The point to this should be readily apparent. Instead of liming greenhouse benches by hand, or applying ground limestone before planting, why not apply a wheelbarrow or two of chip limestone to each bench before tilling and steaming? It is not known how long such an application would last but 5 years is certainly a conservative estimate. Since the active surface area of this much chip limestone is small compared to the ground material, there should be no danger from too much on chrysanthemum, carnation or rose. It is doubtful that one half inch of this material would be too much.

Chip limestone in any size is available from quarries near Denver or Colorado Springs, or from suppliers of road building materials. If limestone rock is sufficiently hard that it does not crumble with weathering, it should contain from 50 to 99% calcium carbonate. Limestone samples contain varying amounts of dolomite which add to the magnesium supply in the soil.

Pure dolomite is made up of almost equal parts of calcium and magnesium carbonates. Thus, the magnesium carbonate content of a limestone sample may vary from 50% to almost nothing. Most Colorado limestones contain appreciable dolomite.