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Bootleg Lime

The quality of agricultural lime applied to fields, pastures and hay ground is assured through the Agricultural Liming Materials Control Service (ALMCS). To be called agricultural lime, samples are analyzed to determine fineness, calcium carbonate equivalent (CCE), and the magnesium (Mg) content. Effective neutralizing material (ENM) and effective magnesium (EMg) percents are calculated from the initial analysis.

The minimum standards are at least 90% of the material must pass through a U.S. number eight sieve and have a minimum 65% CCE. Products not meeting minimum specifications cannot be sold as agricultural liming materials. The process is more completely explained in the guide sheet [G 9107 Missouri Limestone Quality: What is ENM?](#)

Unfortunately, there are individuals who want to get around the rules. A recent example in central Missouri was a quarry trying to sell lime without an ENM. Without the ENM, a farmer can not be sure of the amount per acre needed to correct the soil's pH.

A similar situation in 2006 was traced to the same quarry. In the earlier case, the ALMCS checked a pile of the limestone. An initial test showed only 30% of the material in question would pass through the #8 sieve. Joe Slater, director of the ALMCS commented that, "it would be better for the farmer to put it on a road than in his field".

There are problems associated with using "bootleg lime" on a farm field. As mentioned above, the farmer does not know how much to apply and it takes years longer for the coarse material to react in the soil. While some acid will be neutralized, the desired pH will likely never be reached. Continued slow acid neutralization can combine with subsequent lime applications possibly forcing the pH higher than needed or wanted. To sum it up, it is a waste of time and money to use bootleg lime.

A list of registered agricultural lime producers and the ENM of their agricultural lime as well as a link to the Plant Food Control Service is available at: <http://aes.missouri.edu/pfcs/aglime/index.stm>. Sources for agricultural lime can be found from all over Missouri and surrounding states. These quarries are assessed an annual fee so the ALMCS can assure the quality of lime for farm use.

For more information on liming see:

- G 9102, Liming Missouri Soils:
<http://extension.missouri.edu/explore/agguides/soils/g09102.htm>
and
- G 9107, Missouri Limestone Quality: What is ENM?:
<http://extension.missouri.edu/explore/agguides/soils/g09107.htm>

Author: [Jim Jarman](#), Agronomy Specialist

Stink Bug Numbers Increasing In Missouri Crop Fields

There are an increasing number of stink bugs in Missouri crop fields and scientists are researching the problem. Stink bugs come in several colors or species. Stink bugs are a damaging pest on other legumes in Missouri, such as cowpeas and green beans. Up to now, stink bugs have been considered a minor field crop pest that would rarely do sufficient damage to justify chemical control.

Stink bugs are "shield shaped" insects with a piercing, sucking mouth part that probe plant stems, leaves and pods to suck out their juices. Damaged plants are generally found on the edges of fields, typically in the first 25 to 30 rows. Some brown stink bugs have been found in the center of some fields, but not at economic thresholds.

Damaged soybean plants often exhibit delayed senescence in which the entire plant remains green after nearby undamaged plants dry down. This can cause harvest delays or green soybean contamination. Increased numbers of stink bugs in soybeans can mean more problems in corn and grain sorghum crops as well. Stink bugs will attack seedling corn and milo by piercing the base of the seedling plants. Some saliva remains at the feeding point, causing the death of the terminal growing point, deforming leaves, stimulating suckering and making plants unproductive.

About three years ago, MU entomologists would catch one to three adult stink bugs a night in black light traps in soybean fields. Recently, the numbers have reached as high as 60 per night. The numbers are even higher in Arkansas, Georgia and Louisiana. This increase could be attributed to a combination of factors, including more no-till practices, which allow fields to go undisturbed providing insects, like stink bugs, more opportunity to reproduce. Warmer weather and the normal fluctuation of insect populations also might explain the proliferation of the pest. Farmers planting more glyphosate-tolerant crops and allowing weeds to grow later into the spring can give stink bugs more places to hide and multiply.

Producers can get a jump on stink bugs by beginning to scout at emergence and continue scouting every seven to fourteen days through the growing season. Admittedly, that's tough to do for most farmers due to time constraints. A majority of insect damage to most field crops occurs on seedling plants from the time of emergence through early growth stages. Use a sweep net or shake cloth to survey for an accurate estimate of stinkbug numbers in each field.

In general, stink bugs are tough to kill with insecticides because they tend to hide deep in the foliage. Later in the season adequate coverage is difficult to achieve in this area. Early spraying should provide better control by suppressing populations before they reach damaging levels. Nozzle selection and configuration is especially important for control later in the season.

Source: [Wayne Bailey](#), 573-882-2838 and [Jim Jarman](#), *Agronomy Specialist*, 573-642-0755.

Taxation Tidbit: Are You Bartering? If So – Are You Reporting?

Barter is the oldest form of doing business. Most farm businesses utilize a few barter transactions every year. "You help me [plant, harvest, work cattle, etc.] and I'll help you [plant, harvest, work cattle, etc.]. If the exchanges are of the same type and amount, then it's the same income and same expense on the same tax return, and while it should be reported, many of these casual bartering transactions are not. However, when a bartering transaction involves unlike kind exchanges, recognition and reporting are important and will have tax consequences.

Barter Income: If you are paid for your work in farm products, other property, or services, you must report as income the fair market value of what you receive. This is barter income. For example, if you help a neighbor build a barn and receive a cow for your work, you must report the fair market value of the cow as income. The tax basis for property you receive in a barter transaction is usually the fair market value that you should report as income.

Barter Expense: If you transfer property to an employee in payment for services, you can deduct as wages paid the fair market value of the property on the date of transfer. If the employee pays you any amount for the property, deduct as wages the fair market value of the property minus the amount received. Farm in-kind (commodities) wages are not considered cash wages and are therefore not subject to Social Security and Medicare taxes or income tax withholding. Several i's must be dotted and t's crossed in order to ensure commodity wages are not reclassified by the IRS as cash wages. Work with a tax specialist if you desire to utilize commodity wages in your employees' compensation package.

Treat the in-kind wages deducted as an amount received for the property. You may have a gain or loss to report if the property's adjusted basis is different from its fair market value. For example, if you transfer 500 bushels of corn to an employee as a bonus and the corn was priced locally at \$4.00 per bushel – then you should report \$2,000 as a wage expense and \$2,000 as income from disposition of corn. However, employees receiving in-kind wages will have income to report with no equal off setting deduction.

Author: [Parman Green](#), *Agriculture Business Management Specialist*

Soil Testing Reveals Impact of Gardening Practices

Gardeners often take soil samples if they are having a problem, doing a landscape project, or when it pertains to an area of great interest— i.e., vegetables or roses. Usually only one sample is submitted, sometimes two, and rarely three or more.

Have you ever wondered how much your soil might vary across your garden and yard? As an avid gardener living at the same place for 10 years, I thought my yard would provide a good demonstration. I've done what other gardeners with a range of interests might: improved the soil in the annual flower beds, started a raised bed vegetable garden, established numerous trees, planted berries and an orchard, hauled in dirt to make a berm to plant perennials, and built a patio with a rose garden.

For my one acre residence and yard, the soil is all the same type, Mexico-Urban land complex of 1 to 3 percent slope. A gardener might describe it as a heavy and poorly drained soil with a substantial amount of clay. To improve the drainage and texture I have focused on increasing the organic matter, especially in the raised areas for the annual flowers and vegetables, and for the roses, where the soil seemed especially sticky.

The raised area with the perennials was purchased soil that came from 'east of town,' so it could test a little different. Around the trees I always mulch, and for the lawns I do as little as possible, and let the lawn clippings drop. The table below provides the results for eight samples on the most critical factors that could vary on a similar soil.

Examples of Soil Tests From James Quinn					
Sample Area	pH	Organic Matter	Phosphorous (P)	Potassium (K)	Calcium (CA)
Annual Flowers	6.8	6.8	Excess	Excess	High
Vegetables	6.8	5.2	Very High	Medium	Medium
Roses	6.0	5.8	Excess	Excess	Medium
Perennials (berm)	5.9	3.8	High	Very High	Medium
Orchard	6.3	3.6	High	High	Medium
Small Fruit	6.9	5.5	Very High	Excess	High
Shade Trees	6.0	4.6	High	Very High	Medium
Lawn	6.3	3.5	High	High	Medium

The results match the amendment efforts. The lower levels of organic matter are in the lawn, orchard and perennials, where little to no effort was made to modify the soil. Organic matter was highest in annual flowers where the soil was consistently amended with peat moss, humus and bark for the longest duration. The MU Guide, G6955, Improving Lawn and Landscape Soils, <http://extension.missouri.edu/explore/agguides/hort/g06955.htm> advises a minimum of two percent organic matter for lawns and five percent for garden plantings. The only soil needing a higher organic matter level was in the perennial garden. Given there is lawn around the shade and orchard trees the 3 - 4 percent organic matter level in these areas is reasonable.

The soil test reports recommended no additional K, P or Ca was needed for any of the areas sampled. Lime was recommended for the perennials to raise the pH to 6.0. Nitrogen recommendations are based on organic matter. If it is sufficiently high, then the natural breakdown (mineralization) of the organic matter will provide sufficient nitrogen. No nitrogen was recommended for seven of the eight areas. The exception was for the lawns, where some nitrogen is always advised as the growth and constant clipping of grass requires additional nitrogen to support lush growth.

Early spring is an ideal time to take and submit a soil sample. Many gardeners do not submit soil samples because of the time and expense involved. As this case demonstrates, the cost of purchasing fertilizer was avoided by knowing the nutrient levels. If you haven't taken a sample for a while, review the publication Garden, Landscape and Lawn Soil Testing: <http://soilplantlab.missouri.edu/soil/gardensoil.htm>

Water quality is degraded when fertilizers are over-applied in urban landscapes. Nitrogen and phosphorus are generally the nutrients of most concern. For several samples in the table, P and K levels are rated very high or excess. This does not mean these levels will cause any harm to plant growth, but no further additions are required. If fertilizer is applied at the wrong time (e.g., during rainy spring weather) these nutrients may be lost in the runoff.

Two common sources of synthetic nitrogen available to gardeners are urea and ammonium sulfate, and should be considered when K and P are not recommended. However, fertilizers are often sold in combination to provide multiple elements, with the N, P and K percentage indicated by numbers (e.g., 12-12-12 for N-P-K). These should be avoided when fertilizing the lawn area in this example, as P and K both tested high.

Organic fertilizers with N almost always contain P and K as well with blood meal being an exception. MU Guide 6220, Organic Gardening Techniques, is a good source of information on organic fertilizers frequently used by gardeners: <http://extension.missouri.edu/explore/agguides/hort/g06220.htm>

Authors: [James Quinn](#), Horticulture Specialist, and [Manjula Nathan](#), Director MU Soil Testing & Plant Diagnostic Service Laboratories

Soybean Rust (SBR)

SBR was found in Iowa! A recently released report from Iowa indicates that rust pustules and spores were found on a single leaf retrieved from a bin of 2006 soybeans. The soybeans were harvested in Mahaska County in southeast Iowa. Highway 63 passes through Mahaska County. It is now along the Mississippi River and is due north of us. Such a find indicates there were probably other randomly located SBR fields between our Bootheel region and southeast-central Iowa.

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