



West Virginia University

Extension Service

2088 Agricultural Sciences Building  
P.O. Box 6108  
Morgantown, WV 26506-6108  
304/293-6131 ext. 4224  
John.Jett@mail.wvu.edu  
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MEMORANDUM

To: Gardeners with "High" soil tests  
From: John Jett - Extension Specialist, Horticulture  
Re: Suggested practices to correct High pH and "Salt" levels

You will note that our lab analyses show your soil sample to have a high pH level and several of the nutrient salts are in the "very high" category. If your soil has a high organic matter level (near 5%), we have found that many plants can tolerate the high pH and salt level. However, many people find that all or several plant species show poor performance under these conditions, especially peppers and the root and tuber crops. High pH levels are caused by the excessive use of lime (high Ca), manure (high K), fireplace ashes (high K, often also Ca and Mg) or commercial fertilizers.

An easy way to get around this problem is to hand-spade the top 6" to 8" and turn the soil so the salts are mixed into a deeper zone. Also, the incorporation of compost into the topsoil once a year will greatly increase the organic matter and hence the structure of the soil. While you are cultivating, use a heavy fork and loosen the next 6" to 8" soil layer before you put the top 6" to 8" back in place. Now you have a freshly aerated zone of 12" to 18" in which roots can grow and water and nutrients can move freely. Now that you have done all this physical work, refrain from walking on your planting beds, especially in wet conditions, to minimize compaction. During planting, use a sheet of plywood or boards to stand on to distribute your weight or try raised bed gardening. Excessive use of roto-tillers is not recommended as they tend to destroy and compact soil structure. On large areas, disking and chiseling is preferable to moldboard plowing for the same reason.

You will find that crop production responds readily to good soil structure, which naturally improves soil fertility. If roots, air, and water are allowed to go deeper, plants are more vigorous, disease and drought tolerant, require fewer nutrients, and hence require less of your attention. Once tried, you will like this biodynamic approach to gardening.

Try to get in the habit of testing each field or each bed in your garden annually in late fall and keep your records in a folder for comparison. For those of you wishing to grow "organically," we have special information sheets. If you include a check for \$4 along with your soil sample to "WV Soil Testing," we can analyze your soil's organic matter. Do not add things to the soil without a recent soil test.

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Your county extension agent and I like to hear about your experiences, good or bad, so we can learn if our advice makes sense and so we can pass on your ideas to others.

Best wishes in your endeavors!

The West Virginia  
University Cooperative  
Extension Service,  
U. S. Department  
of Agriculture,  
West Virginia County  
Boards of Education and  
County Commissions  
Cooperating

**Center for  
Agriculture, Natural Resources, and Community Development**

Phone: 304 293-6131  
Fax: 304 293-6954  
[www.wvu.edu/~exten/](http://www.wvu.edu/~exten/)

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