



SUGGESTIONS TO GARDENERS

• Your garden soil analyses will provide you with the most useful basic information on which to make your management plan. This would apply as much to a vegetable garden from which you hope to get a good supply of nourishing crops as it would to a lawn or flower bed which provide beauty and pleasure.

• The enclosed sheet shows the acidity (pH); lime needed - if any - to correct the acidity (L.R.); and the levels of phosphate (P), potassium (K), calcium (Ca), and magnesium (Mg) which exist in your soil and the relative fertility level (i.e.; very high, high, medium, low) for each. We use these ratings to recommend corrective fertilizers. If you're unable to find the recommended materials locally, call your County Agent. He or she can usually tell you how to supply the needed nutrients. Fertilizer bags show their nutrient content by three numbers for percent nitrogen, percent phosphate, and percent potash (e.g., 10-20-20).

• In gardening, the importance of good soil physical management cannot be overemphasized. Too often we get samples from soils which are in excellent chemical condition but which are in poor physical shape. This could be because of poor soil structure caused by compaction or excessive tillage, stoniness, or poor drainage or by excessive slope, exposure, or erosion. Such factors cannot be analyzed in the soil testing lab but could be evaluated on-site by your local WVU County Extension Agent.

• Soils in poor physical condition easily become dry and hard and are then slow to absorb air and water. You can improve this by using organic mulches or with ample supplies of compost or other decomposed organic material. Fresh organic material (such as sawdust and woodchips) is discouraged as it takes excessive nitrogen to break it down before it becomes a useful part of the soil. This may cause severe nitrogen deficiency in garden plants.

• Composts usually contain minerals not present in chemical fertilizer but essential to healthy gardens. However, they're usually low in the major nutrients and can't always substitute for needed lime and chemical fertilizer. In virgin or depleted soils, applications of properly prepared compost will increase numbers of micro-organisms and the organic matter content of the soil. Organic matter helps the soil retain moisture and nutrients and resist compaction and erosion. Soils in good physical and biological condition will also be able to put added fertilizer to more effective use. Deep soil tillage (e.g., hand-digging) every fall and use of winter cover crops will help prevent soil compaction and promote aeration for improved root growth and soil nutrient uptake.

• Such re-conditioning of soils is of course a lot simpler in garden beds than in established permanent lawns. It is more critical in soils that are high in either sand or clay. You should aim to raise the organic matter or humus content of your topsoil to around 5 percent. Manure is not discouraged, but it's difficult to obtain and handle. Its nutrient content is low, but excessive use of manures (also ashes) can lead to serious nutrient imbalances. Miracle products for soil treatment are expensive. Ask for positive proof to justify their claims or cost. Do not use sewage sludge unless it has been heat-treated.

• Poor growth in lawns and gardens may not be soil-related but caused by insects or diseases. However, experience has taught that pests are less prevalent where the soil is in good physical, biological, and chemical condition. Where soil organisms are in better balance, garden plants are more resistant. Try to avoid the use of pesticide chemicals around your home. Avoid applying too much lime or fertilizer as this could create chemical toxicity or imbalance; it may encourage pests and diseases in some crops, while the excess fertilizer salts can make the soil compacted and kill beneficial soil organisms. Soils with excess salts should be hand-spaded, composted, and watered to reduce adverse effects on crops. Sometimes crops fail due to exposure to pesticide chemicals or noxious fumes; however, we cannot test for such chemicals. The WV Dept. of Agric. Lab (348-2208) can do such analyses.

• To avoid garden disappointments, make it a habit to test or recondition your soil annually in late fall. You may contact your County Extension Agent or our office for further specific information (Willem van Eck or Larry Bennett (293-2219 or 6258)).

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