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MEMORANDUM

TO:

FROM: Willem van Eck, PhD *W. van Eck*
State Extension Specialist
Soil & Water Resources
& Professor of Soil Science

RE: Soil Test Results for Ornamentals and Tree Plantations

Our WVU Soil Testing Lab has analyzed your soil sample(s) and the results are enclosed in this letter.

Please note that our lab procedures and analyses were set up to assist farmers and gardeners in the production of food and fodder crops by sampling and testing the plow layer of large fields and garden plots. Ornamentals and tree plantations are grown for a different purpose and often under very different soil and site conditions so that factors other than soil fertility determine plant growth and vitality. Our lab tests were calibrated for the average conditions found in our natural agricultural soils. Flower gardens, greenhouses and indoor flower pots often have highly organic and man-made soil mixes to which our routine lab tests are not especially adapted. The same applies to samples taken from the forest floor of our natural woods or from sites composed of "dirt fill". And if the tests are not appropriate, it is obviously impossible to give good soil fertility advice. Still, we want you to have the results because it is helpful to get at least "ball-park" figures and generalized suggestions. Our tests will at least tell you if your soil sample is way out-of-line (i.e., much too fertile or too infertile).

Our soil test results can not look at physical factors (e.g., texture, porosity, compaction, waterlogging, aeration, etc.). Good growth depends not only on adequate soil fertility but also on correct air and water conditions for the plant roots. Without water no nutrient could move into the plant, but too much water will kill its roots for lack of air. Many ornamentals and trees need rather modest soil fertility levels, but they can be very fussy about lack of water and air. Without visiting your garden, or greenhouse, or tree plantation, it is impossible to tell if your plants have the right physical conditions for good growth.

Here are some general suggestions and rules in assessing non-agricultural soils:

- (a) The coarse fraction (sand, perlite mica and similar coarse materials) gives soil mixes good porosity, water permeability and aeration; and they prevent compaction. But this mix will have very low fertility and little capacity to retain nutrients.

Helping you put knowledge to work

