## System Should Suit Need

hoosing a home water treatment system can be confusing. The Federal Trade Commission offers information on several common types of systems appropriate for treating various water problems.

Water quality equipment should be installed in a definite sequence. If there is an acid condition, the water must be neutralized; then any iron, manganese or hydrogen sulfide must be oxidized and filter out. If hardness is present, it can be removed by a water softener.

Taste, color, odor and bacteriological contamination may be removed at several places in the sequence.

Systems or units can be as sophisticated or as simple as your water problem(s) require.

Common types to look for include these:

Physical filters: These are simple units designed to remove particles from the water such as grit, sediment, dirt and rust. While some can even remove small organisms such as cysts and bacteria, they cannot remove all diseasecausing organisms. They are inadequate to treat microbiologically unsafe water.

Activated carbon filters: These remove some organic chemical contaminants that may cause undesirable tastes, odors and colors and may reduce some inorganic chemicals such as chlorine. Some may specifically remove

lead. However, they typically do not remove salts or metals other than lead. They should not be used exclusively on water that contains harmful organisms, but may be part of a more complex treatment system.

Also, carbon filters may become saturated with chemical impurities or bacteria and have a limited lifetime. Filter cartridges should be changed according to manufacturer instructions. Ask the dealer if the filter can be replaced; how frequently replacement is necessary; how to know when it needs replacing; where filters may be purchased and at what price.

Activated carbon filters come in several forms: granular, powdered, powder coated paper and pressed carbon block.

Carbon filters registered as bacteriostatic does not mean the filters are adequate to control bacterial growth or to treat water that is microbiologically unsafe, such as fecally-contaminated water.

Reverse osmosis units: These units remove substantial amounts of most inorganic chemicals such as salts, metals (including lead), asbestos, minerals, nitrates and some organic chemicals. But when used alone RO units are not recommended for treatment of microbiologically unsafe water.

Be aware that 75 percent of tap water put into the RO system is wasted, so it may take 4 gallons or more of tap water to get 1 gallon of RO filtered water. Where water shortages are a problem, this unit may not be suitable.

The membranes through which the water passes are subject to decay and failure and must be replaced periodically. The tap on the tanks where the treated water is stored flows more slowly than that on a regular faucet.

Distillation units: These come in different shapes and sizes, but all vaporize water and condense it. This process removes most dissolved solids, such as salts, metals, minerals, asbestos fibers, particles and some organic chemicals. These may not remove all chemical pollutants and some bacteria may pass through. Distillation may be an effective water treatment, but the water heating adds to energy use and costs.

Ultraviolet disinfection units: These may destroy bacteria, inactivate viruses and leave no taste or odor in the water. However, UV units are not effective to remove most chemical pollutants from water. The Environmental Protection Agency also questions whether UV is effective against spores and

As with other types, the systems must be properly maintained. Dissolved and suspended solids from the water may build up, blocking the UV light from reaching the running water. Periodic cleaning is needed.

## Soil Testing Basic Step In Establishing Landscape

soil test is the first step in getting a new landscape off to a good start—whether your plans include a lawn, flower beds or vegetable garden.

A soil test can indicate what a property owner needs to do to make srue soil fertility and lime levels are correct. Proper pH and fertility is basic to success, said Wilton Harrelson, a technician with the Brunswick County Agricultural Extension Service. Without this, everything else is much more difficult.

Soil testing is a free service provided by the N.C. Department of Agriculture. Obtaining a sample is easy and simple. Soil testing boxes and a soil sample data sheet can be picked up either from a local garden or lawn supply center or from the extension office in Shallotte.

The data sheet gives directions for taking the sample. The sample itself may be returned to the garden center or extension office for forwarding to the state soil lab in Raleigh.

Preparing the sample takes a few simple steps.

Use a small planting trowel or scoop to collect samples at eight to 12 locations in your garden site or lawn. Simply collect a core approximately 7 to 7 inches deep from each location. Place the cores in a clean plastic bucket; detergents or other materials in the bucket could contaminate the sample and give misleading information.

Crumble up the soil cores and

Soil testing is a free service provided by the N.C. Dept. of Agriculture

shake the bucket to give a good mixture. From this mixture select a couple of handfuls to place in the sample box. Close the box and and carefully fill out the information sheet. Indicate what you plan to grow and what has been used (if you know) in the way of fertilizer and lime in the past year or so, as well as the crop grown.

Try to avoid irregular areas in your garden, such as places where drainage water stands, where ashes may have been dumped, garbage buried, or old bricks piled up. In other words, said Harrelson, try to include in this sample areas that are most representative of the garden

Under normal working conditions, about 10 to 14 days will be required for your soil sample to reach Raleigh, be analyzed and results returned.

A property owner who needs assistance in reading and interpreting the report may contact the county extension office at 253-4425, or a local lawn/garden supply dealer.

