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LANDSCAPING A DRAIN FIELD

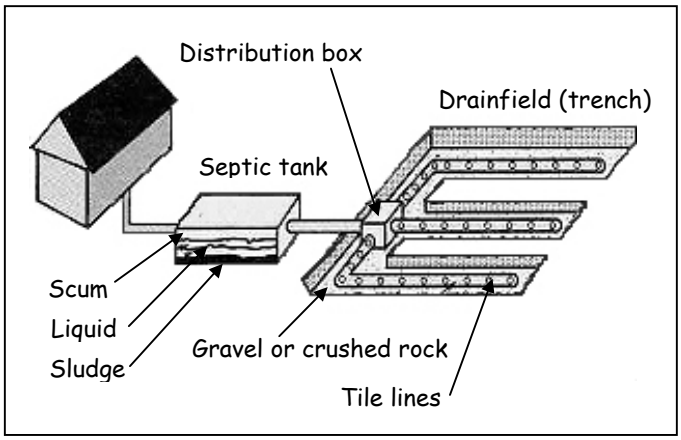
As rural living becomes more popular, rural homeowners may be unaware that their household waste (from toilets, sinks, showers, laundry, and dishwashers) doesn't just disappear into a pipe and go somewhere to be treated, as it did when they lived in the city. Instead, they will likely have a septic system connected to their homes that will need proper operation and maintenance to avoid serious problems.

What Does Landscaping Have To Do With a Septic System?
Gardeners are happiest when they are working in their yards and gardens. But they may be subject to unhealthy conditions in a new environment, such as country home. Untreated household waste that is not properly processed can contain hazardous bacteria and contaminate groundwater, lakes, and ponds. Worst of all, it smells! A well-designed and maintained septic system will eliminate all these problems.

A septic system is simply a private sewage treatment plant. There are many variations of the basic system depending on soil, terrain and environmental issues. Installing appropriate plants can help the septic drain system to function at its best by removing excess moisture and nutrients from the soil. Plants help provide oxygen exchange and contribute to the evaporation necessary in the drain field areas. Plant cover is also important to reduce soil erosion.

What is a Drain Field and How Does a Septic System Work?
Simply put, a septic system consists of a holding tank to receive the waste and begin initial treatment, and a network of pipes to receive the liquids into a drain field for further treatment. As the waste enters one side of the tank, heavier solids sink to the bottom, becoming "sludge", and lighter materials float on the liquid above the sludge, becoming "scum".

Bacteria within the tank digest some of the scum and sludge, turning it into gas or liquid. As new liquids enter the tank, the partially treated liquid drains out through the opposite side of the tank and into a series of perforated pipes laid in gravel-lined trenches – the drain field.



(Illustration Courtesy of United States Environmental Protection Agency and Thomas H. Miller, University of Maryland Cooperative Extension)

The gravel acts as a medium for aerobic bacteria and other organisms to feed on the sewage. In the soil below the disposal trenches, pollutants, including disease-causing bacteria, are filtered out. Soil bacteria destroy some of the pollutants. Other pollutants become bonded to clay particles.

While these mechanisms remove many pollutants, some trace constituents such as nitrates may reach ground water tables if they are not far below the surface.

As sludge builds up in the bottom of the tank, it will become necessary to have the tank pumped to remove the excess before it builds up to the point of overflowing into the drain field pipes and clogging them. Pumping the tank is usually required every three to five years, depending on the input levels.

The size and location of the septic tank and its associated drain field are established according to the size of the home being served. It is critical that the homeowner know this information, because the various components must be protected from damage to insure the proper functioning of the system.

Recommended Plants

Grasses or low-growing groundcovers are most commonly recommended for the drain field area. It is best to plant shallow-rooted, drought tolerant varieties to avoid overloading the soil with extra surface water. Perennial rye, fescue, kinnickinnick, blue oat grass, and some ferns or hostas are also appropriate. Avoid using plants such as English ivy, which can be quite aggressive.

Often the drain field is located in a part of the landscape where it would be desirable to plant trees, shrubs, or flowers to set off the house and lawn. However, trees and shrubs are risky choices for the drain field because the woody roots of these plants are likely to clog and damage drain lines. Especially notorious for line clogging are water-loving trees such as willows and poplars.

Because drain fields require sunlight and air circulation, too much shade from trees can interfere with proper operation of the system. If planted, trees should be at least as far away as their estimated root spread at maturity. For example, a weeping cherry might be expected to grow about 25 feet tall, so it should be planted a minimum of 25 feet away from the drain field. Some smaller, less aggressive woody species that may be suitable for planting near the drain field include boxwood, holly, crabapple, or dogwood.

A meadow look with a mix of native grasses and shallow-rooted flowers or perennials can be very attractive and good for wildlife. Bulbs and wildflowers are easy plants for the drain field. Crocus and daffodils naturalize easily, are reasonably drought tolerant, and return year after year. Other ornamental species that may be suitable include bee balm, columbine, chrysanthemum, coneflower, daylily, peony, clematis, and roses.

Sometimes the ideal place to put a vegetable garden seems to be over the drain field. Because of the possibility of bacterial and viral contamination from the sewage effluent distributed through the soil in the drain field area, edible crops aren't recommended. Vegetable gardening requires frequent cultivation and digging in the drain field area is inadvisable. Any root vegetables planted in this area may be directly exposed to septic tank effluent. The best plan is to use your drain field for ornamentals and plant your vegetables elsewhere.

Other Considerations

No matter what you plant, it's important to avoid damaging the drain lines, which may be as shallow as 6 inches below the surface. Be cautious when tilling the soil for your plants – avoid rototilling or double digging.

If planting perennials, use varieties that require minimal dividing to keep from disturbing the soil too frequently. Wear gloves when working the soil to protect from contamination with any harmful organisms present in the soil.

Salt levels in the soil above a drain field can often be high, so it helps to plant salt-tolerant varieties. As a plus, the use of fertilizers for plants growing over a drain field may be reduced because some of the salts are in the form of nitrogen, phosphorus, and potassium.

Living with a home sewage treatment system can be challenging, but careful planning and planting will meet the challenges in addition to providing a beautiful landscape.

Sources:

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4. Benton County, Oregon, Environmental Health Pamphlet, Septic Systems - A Homeowners Guide to Operation and Maintenance
5. University of Maryland Cooperative Extension, Septic Systems and Their Maintenance, by Thomas H. Miller