

Landscaping On or Near Septic Drain Fields

Septic systems are designed to move waste water away from a home or building allowing the solids to separate from liquids. While the solids are decomposed by bacteria in a holding tank (Fig. 1) outside of the home, the liquids, or effluent water, flow out of the tank through a series of perforated drain pipes, allowing the percolation of waste water out and away from the home into an area known as the drain field (also called a leach field). The liquid is then filtered by sediment and rock layers while microbes continue decomposition of the effluent before it filters down into ground water. Proper construction and maintenance of the drain field is essential in ensuring the process works correctly to limit the harmful bacteria and pollutants subsequently entering the ground water. Environmental pollutants, such as nitrogen and phosphorous, serve as nutrient sources for algal blooms along coastal waters and pollutants in lakes, rivers, streams, and springs. Ingestion of these microbes can lead to a host of serious health problems. Even the most efficient septic system removes approximately 30% of the nitrogen waste leaving the rest to infiltrate waterbodies and ground water resources. Septic systems are common throughout most rural areas and their care and maintenance are essential to the health of people, wildlife, livestock, agricultural commodities, and water resources.

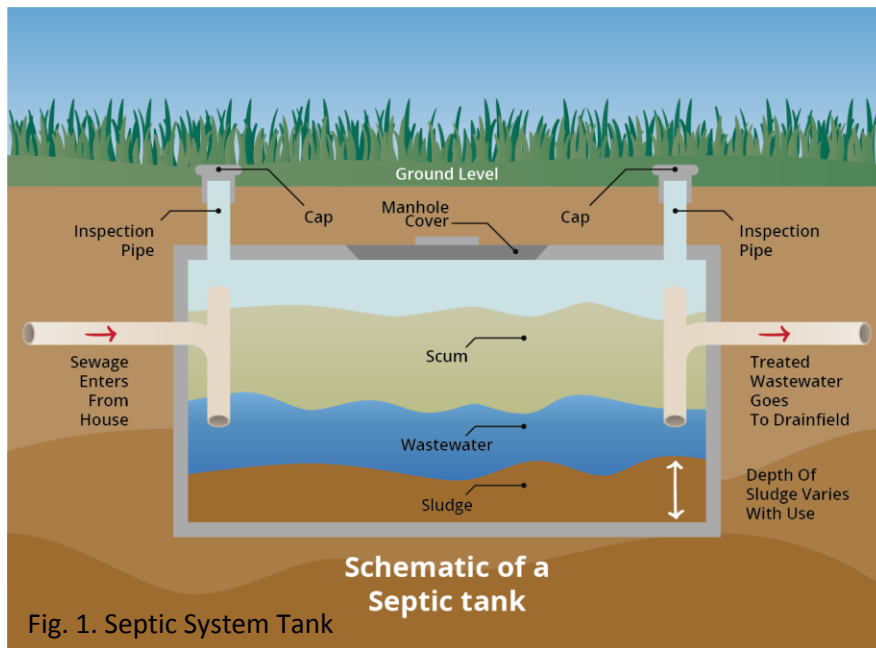


Fig. 1. Septic System Tank

The drain field normally runs under surrounding areas of land, deemed desirable for landscaping, so care must be taken to ensure the plants on and around the drain field do not penetrate or interfere with the function of the drain field. Furthermore, oxygen is required by the beneficial bacteria breaking down harmful waste products in the drain field, so over-

compaction or excessive traffic across the drain field must be avoided. Runoff from roofs and gutters should be directed away from the drain field and irrigation systems should not be aimed

at or installed in these areas. Sprinkler heads should be directed so that irrigation water stays at least 10' away from the drain field. The more water moving across and down through the drain field, the less opportunity there is for pollutants to be filtered before moving into the groundwater below. Time is a necessary component in effective waste filtering of septic systems. Having a detailed blueprint of the drainfield is critical in helping avoid costly damage to the system and the environment when landscaping, installing irrigation, or doing any type of construction around a home or business with a septic system.

Landscaping the drain field is possible and can help prevent erosion. The right plants can help regulate some of the gas exchange required for the system to work properly as well. However, only shallow rooted plants are acceptable on and near the drain field. Plants with large, deep roots, tap roots, or plants that have a woody root system structure cannot only prevent the system from functioning properly, but they can damage the system by growing into the pipes, requiring expensive repairs and even back ups of waste water into and around the home. Turfgrasses are the most common and easiest to establish and maintain around septic systems. They have relatively shallow and fibrous roots. In comparison to other types of plants, turfgrasses tend to be less expensive and can require lower maintenance as long as the right type of grass is chosen for the location. Wildflower mixes (specific to Florida) used in conjunction with turfgrasses can provide a beautiful area with little to no maintenance, but stay away from planting any sort of large or tall grass species as these can have expansive root systems. Bamboo species, pampas grass, etc. should not be planted due to their deep, expansive roots. St. Augustinegrass (Fig.2), bahia, zoysia and bermudagrass are all acceptable over drain fields. Edible crops and vegetable gardens should not be planted on or near the septic tank or drain field as there is a chance that dangerous bacteria or pollutants can potentially enter into the food chain. Plus, the added fertilizer and irrigation in gardens will only add to the nutrient load making its way through the drain field. Furthermore, some root vegetables could damage the system below or attract large animals, such as deer or wild hogs, leading to more compaction or even bare soil over the drain field from feeding activity.

If turf cannot be planted or isn't desirable, the use of herbaceous plants such as the cast iron plant, milkweed, aster, bluestem grass, plumbago, pink Muhly grass, perennial peanut (Fig.3) etc. are all great options to plant on or around the drain field. Planting the right plant in the right place is critical in the function of a septic system but also the longevity of the plant itself. Don't plant sun-loving plants in shady spots and vice versa, or plants that can't tolerate wet conditions in an area that stays wet frequently.



Fig. 2. St. Augustinegrass Lawn (UF/IFAS Comm.)



Fig. 3. Perennial peanut (UF/IFAS Comm.)

Since the drain-field pipes can be just a few inches beneath the soil and 18-36" wide, with pipes 8 to 10 feet apart, avoid the following when landscaping on or near a septic drain field:

- Adding more soil to the area
- Tilling the area for planting
- Mulching any of the drain field area (plastic, bark, rock, or any type of mulch)
- Plants that require supplemental fertilizer or irrigation
- Using landscape fabric
- Digging with shovels or tools below 6" in depth
- Planting trees or shrubs of any kind on or near the drain field

Tree roots can easily grow 2-3 times the diameter of the width of the canopy, so planting a large tree that might be 30 feet in diameter within 20 feet of a drain field is a recipe for septic system failure. Careful examination of the drain field blueprints can help prevent costly mistakes.

Remember to avoid any sort of modifications above ground that might impact the drain field below. Plants with shallow roots can help by preventing erosion and even filter some pollutants, but plants with deep, expansive root systems or those requiring a lot of maintenance or division over time can cause septic failure. Avoid compacting the soil above a drain field by not driving across the area or using it for heavy activity, and don't dig into the drain field risking severe septic system damage.

References:

Dickert, G.M. 2010. Landscaping Over Septic Drain Fields. Clemson Cooperative Extension.

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