



Planting on Septic Leach Fields

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Do you rely on a septic system to treat your household wastes? If so, you're probably interested in protecting the investment you have in your system. Properly operated and maintained, a septic system can last for at least 25 to 30 years. It is important to understand how systems function, and how your landscaping decisions may affect the longevity of the leach field.

Elements of a septic system

Septic systems receive household wastes from toilets, sinks, showers, dishwashers, washing machines and other indoor water uses. Biological action within the septic tank helps break down organic wastes. With time, however, inorganic wastes such as sand, plastic, or synthetic fibers, and slowly digested wastes such as grease, will build up as a layer of sludge. Regular pumping to remove tank sludge is essential to proper system performance. If the sludge is allowed to accumulate, it may spill out into the soil absorption area.

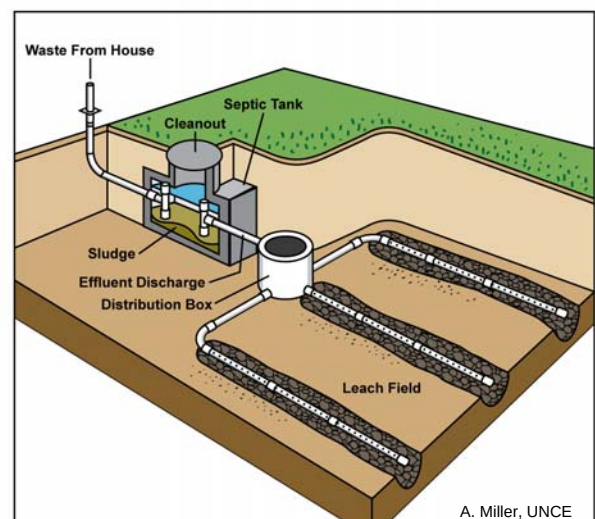
This part of the system, also called the leach field or drain field, most commonly consists of a series of parallel perforated pipes buried in the ground about 12 inches to 18 inches deep. The pipes are set in gravel trenches that allow treated effluent to seep into the ground.

Once in the soil, pathogens, nutrients and other organic materials are removed from the wastewater by several processes, including

breakdown by soil organisms, adsorption (sticking) of pathogens to the surface of soil particles, and uptake by plants. The soil organisms rely on oxygen to survive, so the leach field area must drain adequately to stay aerated. However, if the system drains too rapidly, the risk of groundwater contamination increases.

Mound systems

Some systems include an aboveground leach field, called a mound system. The mound is a drain field that has been raised above the natural soil surface. These designs are used when a high water table does not allow placement of pipes in the native soil, or when the soil drains either too quickly or too slowly. These systems function much like in-ground



Elements of a septic system

systems, but the mound itself must be stabilized to avoid damage to the field from erosion or disturbance.

Considerations when planting over the leach field

The leach field is the most expensive part of the system, and you will want to protect it from damage. It is desirable to plant over the leach field to stabilize the soils and landscape the area. Plants help remove nutrients and moisture from the soil, and also retard erosion. Careful planning can provide an attractive area without damaging the leach field.

Plants should be selected according to their rooting habits and water needs. Plants with large, deep roots may clog pipes or gravel and can even break the lines, damaging the system. Instead plant shallow-rooted, drought-tolerant grasses or herbaceous vegetation.

Irrigation over the leach field area is not desirable, as the added water may prevent evaporation of effluent and increase risks of groundwater contamination. Select drought-tolerant vegetation to decrease irrigation needs. Low-maintenance grasses and perennial flowers are best for use on the leach field or mound system.

When planting, minimize tilling and establish plant cover as quickly as possible to lessen the likelihood of soil erosion. You may need to provide supplemental irrigation during the first growing season until the plants are established, but long-term irrigation and/or fertilization must be avoided.

When maintaining the vegetation, avoid the repeated use of heavy machinery. Plan to mow grasses only a few times a year to reduce fire danger. Keep people off the leach field, except to do routine maintenance or repairs. These areas should never be used for play fields.

What about trees?

Never plant trees with invasive roots, such as aspen, beech, birch, cottonwood, cypress, elm, full-sized pine, poplar, maple (especially red and silver), walnut, or willow, over the drain field

area. These trees should be kept at least 50 feet away from any leach field. Shrubs with extensive root systems, such as *Caryopteris* (bluebeard or blue mist spirea), are also not advised.

Trees that can be planted somewhat closer include ornamental trees (cherry, crabapple, dogwood); hemlock; red, scarlet and white oak; and small, shrub-type pines such as Mugo pines. Keep these trees as far away from the leach field as the mature height of the tree, or at least 20 feet.

Can I plant a vegetable garden over the leach field?

It is tempting to consider placing a fruit or vegetable garden over the leach field, to take advantage of the extra moisture and nutrients provided by the in-ground effluent. However, it is not recommended that vegetable gardens be planted over leach fields due to potential health hazards and possible damage to the leach field itself.

One of the greatest concerns when planting a garden over a leach field is the potential for contamination of soil and produce by disease-causing pathogens, such as viruses and bacteria. Never plant root crops over the leach field. Pathogens can be expected to travel short distances through the soil, especially in sandy soils. Root crops, such as carrots and potatoes, that grow in the soil are the most likely to pick up contamination from the area above or downhill from the leach field. It is not possible to determine if a crop has been contaminated by its appearance.

Leafy crops that grow close to the soil surface could also experience contamination from irrigation water splashed onto the foliage. The taller the crop, and the greater the distance from the ground, the lower the risk of contamination.

Before proceeding with a vegetable garden over a leach field, consider a few other things. If you have a water softener, chances are your system adds salt to the septic system every time it regenerates. The salty effluent water released into the garden area could harm salt-sensitive plants, such as beans and peppers. You also need to consider the other household chemicals you use and their possible effect on plants and produce.

Gardening practices could also potentially damage your leach field. Rototilling, plowing, deep digging or fence post placement could harm the drain lines. Construction of irrigated, raised beds is also discouraged, as these add soil depth and may interfere with normal transpiration from the soil. Irrigating over the leach field adds water right where you don't want it! Ideally, evaporation over the area should be maximized to reduce chances of contaminating groundwater supplies. It's best to put your vegetable garden in another area.

Tips to keep your septic leach field functioning properly

In addition to regular pumping, protect leach fields with these steps:

- Keep excess water off the leach field area. Direct surface water runoff away from the system.
- Limit activities that will compact leach field soils. Avoid driving across the area. Likewise, large animals, such as horses or cows, can cause compaction and reduce the effectiveness of the system.

- Be careful about what goes down the drain. Avoid the use of hazardous cleaners and excessive amounts of grease or oil.
- Spread out your water use. Avoid using large amounts of water on any single day to prevent premature flushing of the tank.
- Minimize garbage disposal use.
- Don't flush substances that do not readily decompose, including cat litter, feminine sanitary products and cigarette butts.

Citations

- Day, S.D. and E. Silva. 2000. Planting on Your Septic Drain Field. Virginia Cooperative Extension Publication No. 426-617.
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- Truckee Meadows Water Authority. 2001. Landscaping in the Truckee Meadows. www.tmh2o.com.
- U.S. EPA. 1999. Decentralized Systems Technology Fact Sheet: Mound Systems. EPA 832-F 99-074.
- U.S. EPA. 1999. Decentralized Systems Technology Fact Sheet: Septic Tank – Soil Absorption Systems. EPA 832-F 99-075

Plants for Use Over Septic Leach Fields in Western Nevada

Species	Common Name	Water Use
Flowering Plants		
<i>Achillea</i> species	Yarrow	Low
<i>Agastache cana</i>	Bubblegum mint	Low
<i>Alcea rosea</i>	Hollyhock	Moderate
<i>Antirrhinum majus</i>	Snapdragon	Moderate
<i>Armeria maritima</i>	Sea pinks	Moderate
<i>Artemisia</i> species	Sage or wormwood	Very Low
<i>Aster</i> species	Aster	Moderate
<i>Aurinia saxatilis</i>	Basket-of-gold	Low
<i>Coreopsis</i> species	Tickseed	Low
<i>Dianthus</i> species	Pinks	Low
<i>Echinacea purpurea</i>	Coneflower	Moderate
<i>Eriogonum umbellatum</i>	Sulfur-flowered buckwheat	Very Low
<i>Eschscholzia californica</i>	California poppy	Low
<i>Gaillardia x grandiflora</i>	Blanket flower	Low
<i>Gaura lindheimeri</i>	Gaura	Moderate
<i>Geranium</i> species	Handy geranium	Moderate
<i>Gypsophila</i> species	Baby's breath	Moderate

Species	Common Name	Water Use
<i>Hemerocallis</i> hybrids	Daylily	Moderate
<i>Heuchera sanguinea</i>	Coral bells	Moderate
<i>Iberis sempervirens</i>	Candytuft	Moderate
<i>Iris germanica</i>	Iris	Low
<i>Kniphofia uvaria</i>	Red-hot poker	Moderate
<i>Lavandula angustifolia</i>	Lavender	Moderate
<i>Lilium</i> species	Lily	Moderate
<i>Linum</i> species	Flax	Low
<i>Nepeta racemosa</i>	Catmint	Low
<i>Oenothera</i> species	Primrose	Low
<i>Papaver</i> species	Poppy	Moderate
<i>Penstemon</i> species	Beard tongue	Moderate
<i>Platycodon grandiflorus</i>	Balloon flower	Moderate
<i>Rudbeckia fulgida</i>	Black-eyed Susan	Moderate
<i>Salvia</i> species	Sage or Salvia	Moderate
<i>Saponaria</i> species	Soapwort	Moderate
<i>Sedum</i> species	Stonecrop	Low
<i>Senecio cineraria</i>	Dusty miller	Low
<i>Stachys byzantina</i>	Lamb's ears	Low
<i>Tanacetum</i> species	Painted or Michaelmas daisy	Moderate
<i>Tulbaghia violacea</i>	Society garlic	Low
<i>Veronica spicata</i>	Spike speedwell	Moderate
Grasses		
<i>Calamagrostis x acutiflora</i>	Feather reed grass	Moderate
<i>Helictotrichon sempervirens</i>	Blue oat grass	Low
<i>Panicum virgatum</i>	Switch grass	Low
Ground Covers		
<i>Campsis radicans</i>	Common trumpet creeper	Moderate
<i>Cerastium tomentosum</i>	Snow-in-summer	Moderate
<i>Clematis</i> species	Clematis	Low
<i>Delosperma cooperi</i>	Hardy purple ice plant	Moderate
<i>Euphorbia</i> species	Spurge	Low
<i>Helianthemum nummularium</i>	Sunrose	Moderate
<i>Lathyrus latifolius</i>	Perennial sweet pea	Low
<i>Lonicera</i> species	Honeysuckle	Low
<i>Mahonia repens</i>	Creeping mahonia	Moderate
<i>Phlox subulata</i>	Moss pink	Moderate
<i>Polygonum</i> species	Polygonum	Low
<i>Santolina</i> species	Lavender cotton	Low
<i>Vinca minor</i>	Dwarf periwinkle	Low
<i>Wisteria sinensis</i>	Chinese wisteria	Low
<i>Zauschneria californica</i>	California fuschia	Low

Plant characteristics from: *Water Efficient Landscape Guide*, Truckee Meadows Water Authority,
http://www.tmwlandscapeguide.com/landscape_guide/interactive/index.php