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CONSERVATION CORNER: A GUIDE TO GRAY WATER USE

submitted by the Office of the State Engineer's Water Use and Conservation Bureau

(SANTA FE, New Mexico) -- Most New Mexicans have already experimented with gray water use, when they have performed the simple task of carrying a bucket of shower water outside to water plants, bushes and trees. Using gray water, fresh water supplies are saved by not applying drinking water to landscape plants. With growing populations and a limited water supply, the efficient use and reuse of our scarce potable water supplies has assumed greater importance in our state. Given that more than half of the water that's used indoors can be reused as irrigation water, it is well worth looking at how simply and easily one can make use of at least some of their gray water.

There is no "one size fits all" when it comes to designing gray water systems. All gray water systems need a water source and a way to get the water from that source to the point of use. Accessibility to a gray water source, such as a washing machine or bathtub water, and how far away the gray water use areas are will dictate how easy and how cost-effective the system will be to install and maintain. It's important to note that installing a system on an existing home will be more costly and more complicated than developing one for a new home. Retrofitting often involves longer runs of pipe and other supplies, due to the fact that a gray water system was an afterthought and not contemplated in the original building plans. With new construction, dual plumbing for both gray and potable water pipes is the most economical way to make use of gray water. It is recommended to make every attempt to design, install and maintain a gray water system so that it does not require the water to be treated. For further information and examples of gray water systems, refer to the Office of the State Engineer's *New Mexico Gray Water Guide*.

Once a system is installed, there are many things to take into consideration: proper gray water use, detergents and soaps, appropriate plant materials, and irrigation issues. Here are some important watering instructions, specifically for gray water use:

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- All plants benefit from an occasional flushing of rainwater or tap water to remove salts and other deposits in the soil, but consider the age and hardness of the plant material in deciding how much or how often to provide gray water to them.
- Avoid over watering with gray water or overloading sensitive or recently planted materials.
- Use a storage tank or have multiple gray water use areas to ensure that the root zone is half dried out before re-irrigating.
- Have a hose bib or flow valve on the storage tank to control the rate of application and prevent runoff.

When considering which detergents work best with a gray water system, look for the following chemical characteristics:

- Alkalinity/Acidity – refers to the relative ph of soil. In this area, lowering the ph of the soil to make it less alkaline is generally desirable and beneficial to plants. **(Adding white vinegar to the laundry's rinse cycle will help lower the ph of gray water.)**
- Boron – a plant micronutrient and most soils provide adequate amounts of this chemical. Concentrations only slightly higher than those considered beneficial can cause injury or death to plants. **(Avoid soaps that contain borax.)**
- Sodium – can act as a plant poison by reducing the plant's ability to take up water from the soil. It can build up in the soil gradually increasing its toxicity. **(Avoid soaps that are high in salts and sulfates.)**
- Chlorine – is undesirable for plants in large amounts, but it is generally expended in the washing process. **(If possible, avoid the use of bleach.)**

In general, native plants, desert-adapted plants and tough drought-tolerant plants will do best with gray water irrigation. Gray water is typically alkaline, so avoid using it on acid-loving plants. Consider planting trees such as New Mexico olive, locust, juniper and piñon; and, shrubs such as chamisa, four-winged saltbush, and privet.

There are a few special irrigation considerations that need to be taken into account when applying gray water:

- Disperse gray water around the yard and garden to avoid buildup of harmful ingredients in the soil.
- Do not apply to potted plants or young seedlings, unless fresh water is alternately applied to dilute the gray water.
- Do not use gray water on food crop except for fruit or nut trees.

To obtain a copy of the Office of the State Engineers' *New Mexico Gray Water Guide*, call 1-800-WATER-NM, or go to the website at www.ose.nm.us, or email waternm@state.nm.us

The Office of the State Engineer is charged with administering the state's water resources. The State Engineer has power over the supervision, measurement, appropriation, and distribution of all surface and groundwater in New Mexico, including streams and rivers that cross state boundaries. The State Engineer is also Secretary of the Interstate Stream Commission and oversees its staff.

The Interstate Stream Commission is charged with separate duties including protecting New Mexico's right to water under eight interstate stream compacts, ensuring the state complies with each of those compacts, as well as water planning.

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