

Rainwater Harvesting-Meeting Water Needs

The population of Texas is expected to double by 2050, according to the Texas Water Development Board. Because of a growing population and a shrinking water supply, it is vital to conserve water.

Rainwater harvesting is an efficient form of water conservation. Rainwater is captured, diverted and stored for future use. It is an ancient technique that is growing in popularity.

“The benefits are that the water is void of chemicals,” says Billy Kniffen, a water resource specialist with Texas AgriLife Extension Service. Since the rainwater is captured before it hits the ground, there are less contaminants to remove. It is low in sodium and has an almost neutral pH.

“You immediately feel and see difference in amount of soap and detergent on body, in appliances, and cleaning in general.” Rainwater is easy on appliances, excellent for landscaping, decreases utility bills, lessens stress on other water resources and reduces storm water which can carry pollutants into rivers and groundwater. It even tastes good if the system is set up for potable water.

Kniffen says the water in his home is made potable by filters and UV light. He harvests rainwater from the roof on his home and barn, about 5,900 square feet combined. This system catches approximately 2,900 gallons of water per inch of rain. This collected water is the only water source used on his property. “When you know you have a finite amount you waste less.”

To calculate possible collected rainwater:

Inches of rain X square feet of catchment area X .62 gallons collected per inch per square foot X .85 collection efficiency.

Some water will be lost through evaporation, splash off, or stay on the roof. A quarter inch of rain on a 1,700 square foot home would net about 224 gallons of water. Kniffen said people are surprised how much water can be collected.

“When you can explain or demonstrate the large amount from a relative small collection area, interest peaks.”

The TWDB peaks the public’s interest with the Texas Rain Catcher Award. The award is given for excellence in rainwater harvesting. Stroman Middle School in Victoria, Texas was recognized last year for their 220-gallon, non-potable system. Eighth graders and

community members built the system to irrigate a garden on school grounds. They installed a corrugated metal roof for more efficient run-off and placed a barrel below each corner of the roof.

Systems range from large to small depending on the person's needs. Basic equipment for any system includes gutters, pipes, first flush system, filters, pumps and a storage tank. Additional filters and disinfection equipment is needed for a potable system.

The cost of installing and maintaining a system varies depending on its use. The initial cost can be a deterrent for some. Space to store a tank can also be a concern as well as maintenance for more complex systems.

“Knowledge of simplicity and possibilities are some of the deterrents, money is another,” said Kniffen. “But a bigger problem may be local regulations and misinformation on the part of municipal regulators. That is why research and education is essential.”

For more information on rainwater harvesting, contact the Permian Basin Underground Water Conservation District at 708 W. St. Peter Street, Stanton, Texas, call 432-756-2136, or visit online at www.pbuwcd.com.