

Determining effective methods of irrigation as water becomes increasingly scarce

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A recent study out of Texas A&M University focused on the practical applications of the global concern that potable water will become less and less accessible in the future. Melinda Knuth and her team engaged an examination of how to most efficiently divide this diminishing resource into uses (and sometimes re-uses) for what is needed to sustain human life and plant life in landscaping and horticulture.

Knuth's findings are detailed in the research "Consumer Perceptions of Landscape Plant Production Water Sources and Uses in the Landscape during Perceived and Real Drought" published in *HortTechnology*.

The implications showcased by Knuth are very important as well as very serious in that "future water resource availability may literally change the American landscape." And while the possibilities seem dire, the study attempts to ferret out better methods of managing the potential water shortage for the extended benefit of human and plant life alike.

Among the dominant suggestions studied for efficient water usage is that of relying on [recycled water](#) more for plant irrigation. Recycled water, or gray water, is that which has already been used in various household capacities, except for toilet and sewage needs.

The research unveiled that fact that the United States is not as advanced in its acceptance of using recycled water as are other countries due to specialized education and awareness campaigns. In order to determine the degree to which Americans needs to get up to speed on this

endeavor, Knuth and her team adapted traditional market research protocols to develop an online survey.

The survey was made up of five parts: 1) types and amounts of [plants](#) purchased, 2) questions concerning both herbaceous and woody perennials, 3) water conservation knowledge and behavior, 4) overall plant knowledge, and 5) demographic characteristics. There was also a comparison of respondents regarding the differing water/[drought](#) situations already evident across the United States. Knuth realized that people often perceive a drought situation when such is not truly accurate. And the attitudes toward water conservation between those who correctly perceive they are in a drought differs from those who correctly perceive they are not in a drought.

Knuth ultimately used 1543 respondents as a sample population, and from that group found there may be substantial benefit in describing alternative approaches to servicing the water needs of plants at the point of purchase. Currently US consumers prefer the idea of using fresh water for any watering needs. Knuth conducted a coinciding study to quantify the degree to which that is necessary.

In most cases, plants irrigated with recycled water saw no negative impact when compared to the same types of plants irrigated with pure, non-recycled water. However, there were some instances that revealed negligible or minimal impacts. Knuth found there was indeed a small category of more-delicate plants that require pure water to maximize proliferation.

Among the benefits of this study are a behavioral change that could help the human race prolong its survivability on earth, stretching its diminishing water supply while maintaining care for a broad range of plant life—both crucial for sustaining conditions for human life. Knuth adds, "This research is important because drought is far-reaching and

non-selective, making [water conservation](#) crucial. Understanding how homeowners behave in drought conditions, and lack of drought, can potentially affect which plants horticulture retailers provide, drive future water-conserving policy, and nudge consumers to more positive [water conservation](#) behavior."

More information: Melinda Knuth et al, Consumer Perceptions of Landscape Plant Production Water Sources and Uses in the Landscape during Perceived and Real Drought, *HortTechnology* (2018). [DOI: 10.21273/HORTTECH03893-17](#)

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