

Can bedding plants thrive with recycled water?

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To conserve dwindling water resources, municipalities are encouraging the use of "recycled water", municipal wastewater that has been extensively treated and deemed safe to reuse for irrigation and other purposes. Using recycled water can be cost-effective and helps conserve the potable supply. In areas of the U.S. where production of bedding plants means income and jobs, commercial growers are looking for ways to use reclaimed or recycled water for irrigation, but using recycled water does not come without challenges. The water can contain high levels of salt, presenting obstacles for commercial operations. New research from Texas A&M University provides bedding plant growers with important data about ten common species/cultivars.

"As more low-quality water is used for landscape [irrigation](#), demand for salt-tolerant bedding plants will increase in arid and semiarid regions. Currently, little information is available on salt tolerance of bedding plants", explained Genhua Niu, lead author of a new study published in *HortScience*. The researchers sought to quantify the relative salt tolerance of 10 bedding plant species and cultivars whose performance ranged from acceptable to excellent under limited irrigation conditions in a semiarid desert environment. In the study, the same 10 species and cultivars were irrigated with water at various salinity levels in two experiments conducted in a summer shadehouse or a winter greenhouse.

To maintain a desirable compact growth habit in ornamental plants, growers traditionally prune ornamentals or treat them with growth regulators. Interestingly, some herbaceous perennials, groundcovers, floricultural crops, and landscape woody shrubs became more compact when irrigated with low to moderate salinity, showing that reclaimed water may play an important role for landscape irrigation where the supply of high-quality water is limited. "The salinity tolerance

range or threshold for optimal growth and quality of landscape plants needs to be identified for efficient and sustainable use of reclaimed water", stated Niu.

For the study, bedding plants were irrigated with saline solution to simulate the composition of local [reclaimed water](#). The salt tolerance of plants varied with species and cultivars. Ornamental pepper 'Black Pearl' was most sensitive to salt stress based on its greater growth reduction in both experiments and high accumulation of chlorine in leaves compared with other plants.

"In general, the bedding plants tested in this study are moderately tolerant to salt stress and may be irrigated with saline water up to 4.0 dS-m² with little reduction in aesthetic appearance. It is possible that plant response to salinity stress may be modified by soil type in a landscape situation", the study concluded.

More information: hortsci.ashspublications.org/content/abstract/45/4/628

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