

Irrigation System Design and Management Increases Efficiency on Northeast Missouri Cut Flower Farms

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Due to Covid-19 the importation of cut flowers was greatly reduced creating a flower shortage for floral shops and retailers. This cut flower shortage resulted in increased demand for locally produced cut flowers initiating the request for irrigation systems on northeast Missouri cut flower farms in 2020 and 2021.

Program Objectives

- To improve knowledge and understanding among cut flower producers on design and use of irrigation systems.
- To enhance the competitiveness of Missouri cut flowers through more sustainable, diverse and resilient specialty crop systems.
- To increase production of cut flowers through improved water management.
- To increase the profitability and viability of Missouri's cut flower producers.
- Teach gardeners and small-scale producers how to use irrigation to increase efficiency of water management in their gardens or operations through workshop participation.

Teaching Methods

- Producers were selected and irrigation systems installed on their farms with their involvement.
- Producers were taught how to install and use an irrigation system in their operation.
- The farms became demonstration sites to host and teach irrigation workshops.
- A demonstration site was also set up at the Adair County Extension Center in a lavender research plot, which allowed for hands-on training for Master Gardeners.
- Workshops were held to demonstrate irrigation setup and use in a cut flower production system.



Evaluation

- Evaluations were given to program participants at each of the workshops.
- 91% of participants rated the workshops excellent.
- 77% of participants had no to very little knowledge of irrigation systems before attending a workshop.
- 97% of participants learned some to a lot after participating in a workshop.

Program Outcomes and Impacts

- 87 individuals from 12 Missouri counties and two states (Illinois and Kansas) attended the workshops held in 2020 and 2021.
- Workshop participants networked with the producers and MU Extension specialists to gain knowledge and skills.
- Program participants indicated they learned the importance of having drip irrigation in a small scale cut flower operation; the parts of an irrigation system and how to put it together; how to space irrigation lines on rows, increased knowledge about cut flower production; and much more.
- Producers indicated the irrigation system cut their watering time in half.
- Producers indicated the irrigation system cut their water bill by fifty percent.

QUOTES

"It really helped when we had Covid and barely had the energy to turn the water on and off. We would have lost all the plants if we were watering the way we had been before the drip irrigation. It allows us to grow on a much larger scale than we would be able to otherwise." --producer

"I've never seen a cut flower farm so it was interesting to see bed setup and flowers in rotation. The irrigation demonstration was great!"
--workshop participant

Program Activities

- Dan Downing, Dr. Joe Zulovich and Dr. Jianfeng Zhou received a \$40,000 Missouri Department of Agriculture Specialty Crop Block Grant to create irrigation demonstration sites in Missouri. They included regional horticulture specialists in their projects.
- Jennifer Schutter was involved with demonstration sites and coordinated irrigation workshops in northeast Missouri.
- Two cut flower producers in northeast Missouri were selected to have irrigation systems set up on their farm to increase water efficiency in their operation.
- An irrigation system was also set up on seven, 60' lavender rows in a research plot at the Adair County Extension Center in Kirksville, Missouri.
- Workshops were held at both farms, one in 2020 and one in 2021.
- Participants learned the parts of an irrigation system, how to set up an irrigation system, and the advantages of using one to increase production and water efficiency.
- Follow-up with producers at the end of the season revealed the impacts the systems had on their operation.
- Workshops and training with irrigation setup will continue during the summer of 2022 at the lavender research plot at the Adair County Extension Center.