



# Small Scale Solutions for your Farm

## Low-Cost Irrigation System



### Do You Have Problems with:

- Crops wilting and dying from lack of water
- Droughty soils
- Poor quality crops
- Lost income from dry weather
- Spending too much time and effort irrigating by hose, buckets, or improper equipment



Micro-irrigation is efficient

A low-cost irrigation system can be as simple as a series of troughs or gutters moving water by gravity, or it can involve a pump and pipelines to move water to sprinklers or a drip system.

### Purposes and Benefits of an Irrigation System

- Give you the ability to provide water and soluble fertilizer when your crops need it.
- Allow your crops to grow to their maximum potential.
- Help your crops resist diseases, harmful insects, and temperature extremes through cooling and frost protection.
- Help irrigate crops when dry weather and drought persists.

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## Sprinkler Irrigation

- Sprinkler Irrigation systems spray water into the air through a system of nozzles.
- Properly spaced, the sprinklers apply the water evenly over the irrigated area.
- Sprinkler systems are less efficient than drip systems.
- Wind will affect the application uniformity of the irrigation.
- Sprinkler systems generally require high volumes of water at high pressure.
- Household wells of around 6 gallons per minute (gpm) can only supply enough water to run about 2 sprinklers at a time. By using portable sprinklers and moving them, you should be able to irrigate 1/2 acre.
- Larger fields will require a larger supply of water (large well, or pond), a pump and portable or permanent piping network. You can zone the field to make better use of the pump and water supply.



Drip irrigation system

## Drip Irrigation

- Drip irrigation systems deliver water to your crops at a slow rate, without wetting large areas of the soil and the plant.
- Pond or stream water will require expensive filters to prevent clogging of the system.
- Drip systems using well or city water usually require less filtration.

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## Low-Cost Irrigation Systems

Water can be pumped in pipes or carried to the field in tanks. An irrigation system may use valves to separate fields into zones. This allows a limited water source to provide water to a large field by watering one zone at a time.

### Associated Costs

- Cost can vary based on the availability of water and the type and size of the system.
- Getting water can cost a lot if you need to drill a well or build a pond or be on city/county water.
- Small systems which are operated by manual labor and gravity flow can cost as little as \$500 and irrigate a small garden.
- Pressurized systems like sprinkler and micro/drip require pumps and piping that can cost anywhere from a few hundred to a couple of thousand dollars an acre.
- All irrigation systems will cost you time to operate and manage the system and the water. **Dividing solid set irrigation systems into smaller zones can be accomplished by use of an irrigation manifold**



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## Technical and Financial Help Is Available

Whether you measure your farm in terms of feet or acres, your local Natural Resources Conservation Service (NRCS) office has experienced conservationists that can help you develop a Conservation Plan to conserve, maintain, and restore the natural resources on your land and improve the long-term health of your operation.

There is no charge for our assistance. Simply contact your local office to set up an appointment. You may also be eligible to receive financial assistance. Your NRCS office will explain any programs that are available so you can make the best decision for your operation. All NRCS programs and services are voluntary.

## For More Information

Visit the [Natural Resources Conservation Service](#) or visit [farmers.gov/service-locator](https://farmers.gov/service-locator) to find your local NRCS office. You can also check with your local USDA Service Center, then make an appointment to determine next steps for your conservation goals.

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NRCS conservationist assisting small scale farmer with developing a customized conservation plan.

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