

# Newsletter

## SUN FLOWER

From *Sun & Black Flowers*

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### **“ SPRINKLER IRRIGATION & DRIP IRRIGATION SYSTEMS FOR LANDSCAPE IS NO LONGER A LUXURY, NOW IT’S AN ABSOLUTE NECESSITY.”**

Effective and economic usage of water results in conservation of water, which is becoming a scarce resource in our Planet. If you are like most of the Landscape owners, you are using up to 50% more water than your landscape area requires. That’s neither frugal for the pocketbook, nor beneficial for the lawn. More water does not always mean more beautiful and may not give effective results.

In fact, the amount of water required for taking care of a particular landscaped area by manual(Labour) irrigation methods will be reduced to half by installing and using an efficient Sprinkler irrigation or Drip irrigation system for the same landscaped area.

This solution is not just watering less, but watering more scientifically. The right amount of water evenly distributed in the right places at the right time. A sprinkler irrigation system or Drip irrigation system makes it possible.

SPRINKLER IRRIGATION SYSTEM

DRIP IRRIGATION SYSTEM



## SPRINKLER IRRIGATION SYSTEM

Sprinkler Irrigation is a method of applying irrigation water which is similar to rainfall. Water is distributed through a system of pipes usually by pumping. It is then sprayed into the air and irrigated entire soil surface through spray heads so that it breaks up into small water drops which fall to the ground.

Sprinklers provide efficient coverage for small to large areas and are suitable for use on all types of properties. It is also adaptable to nearly all irrigable soils since sprinklers are available in a wide range of discharge capacity.



## COMPONENTS OF A SPRINKLER IRRIGATION SYSTEM

Sprinkler Irrigation System starts from Pumping unit leading to Filtration unit and then to Main Pipelines, Control valves and Lateral Pipelines and finally ends with Sprinklers. Water Pumped from the Pumping unit reaches the Sprinkler base at required pressure to achieve the designed radius of throw.



## ADVANTAGES OF SPRINKLER IRRIGATION SYSTEM

Landscape Sprinkler irrigation makes possible the growth of grass and plants that enhance the quality of life. Without it there would be no dense grass and other plant cover. These plants minimize airborne dust and soil movement outdoors and into buildings that otherwise would cause major cleanliness and environmental concerns in cities and towns. On average, fifty percent of the water consumed in residences is used to irrigate landscapes.

More efficient use could be made of landscape Sprinkler irrigation water. Savings averaging 40 percent are easily possible with proper design, maintenance and management of automatic Sprinkler irrigation systems. A better understanding of plant water needs, soil water storage and other factors affecting landscape irrigation can lead to increased application efficiency whether water is applied with a hose, automatic sprinkler or through drip irrigation. Keep in mind these points for using water wisely in landscapes.





## DRIP IRRIGATION SYSTEM

Drip irrigation, also known as trickle irrigation or micro irrigation or localized irrigation, is an irrigation method that saves water and fertilizer by allowing water to drip slowly to the roots of plants, either onto the soil surface or directly onto the root zone, through a network of valves, pipes, tubing, and emitters. It is done through narrow tubes that deliver water directly to the base of the plant.

### What Is Drip Irrigation?

Drip irrigation is an efficient and economical method of watering. Used commonly in dry regions with scarce water resources, the use of drip irrigation is increasing in the Northeast. This irrigation method is typically more than 90% efficient at allowing plants to use the water applied. Unlike other forms of irrigation, such as sprinklers that are only 65-75% efficient, drip irrigation reduces runoff and evaporation. Drip irrigation applies the water slowly at the plant root zone where it is needed.

Drip irrigation has more commonly been used in commercial nursery and agricultural operations, however, homeowners are beginning to take advantage of its uses and benefits. As a homeowner, you can use drip irrigation in your vegetable and perennial gardens, and to water trees and shrubs.



### Components

Components (listed in order from water source)

- Pump or pressurized water source
- Water filter(s) or filtration systems: sand separator such as Hydro-Cyclone, screen filters, media filters, disc filters
- Fertigation systems (Venturi injector) and chemigation equipment (optional)
- Backwash controller (Backflow prevention device)
- Pressure Control Valve (pressure regulator)
- Main line (larger diameter pipe and pipe fittings)
- Hand-operated, electronic, or hydraulic control valves and safety valves
- Smaller diameter polytube (often referred to as "laterals")
- Poly fittings and accessories (to make connections)
- Emitting devices at plants (emitter or dripper, micro spray head, inline dripper or inline driptube)



## ADVANTAGES OF DRIP IRRIGATION SYSTEM

- Fertilizer and nutrient loss is minimized due to localized application and reduced leaching.
- Water application efficiency is high.
- Field levelling is not necessary.
- Fields with irregular shapes are easily accommodated.
- Recycled non-potable water can be safely used.
- Moisture within the root zone can be maintained at field capacity.
- Soil type plays less important role in frequency of irrigation.
- Soil erosion is minimized.
- Weed growth is minimized.
- Water distribution is highly uniform, controlled by output of each nozzle.
- Labour cost is less than other irrigation methods.
- Variation in supply can be regulated by regulating the valves and drippers.
- Fertigation can easily be included with minimal waste of fertilizers.
- Foliage remains dry, reducing the risk of disease.
- Usually operated at lower pressure than other types of pressurised irrigation, reducing energy costs.

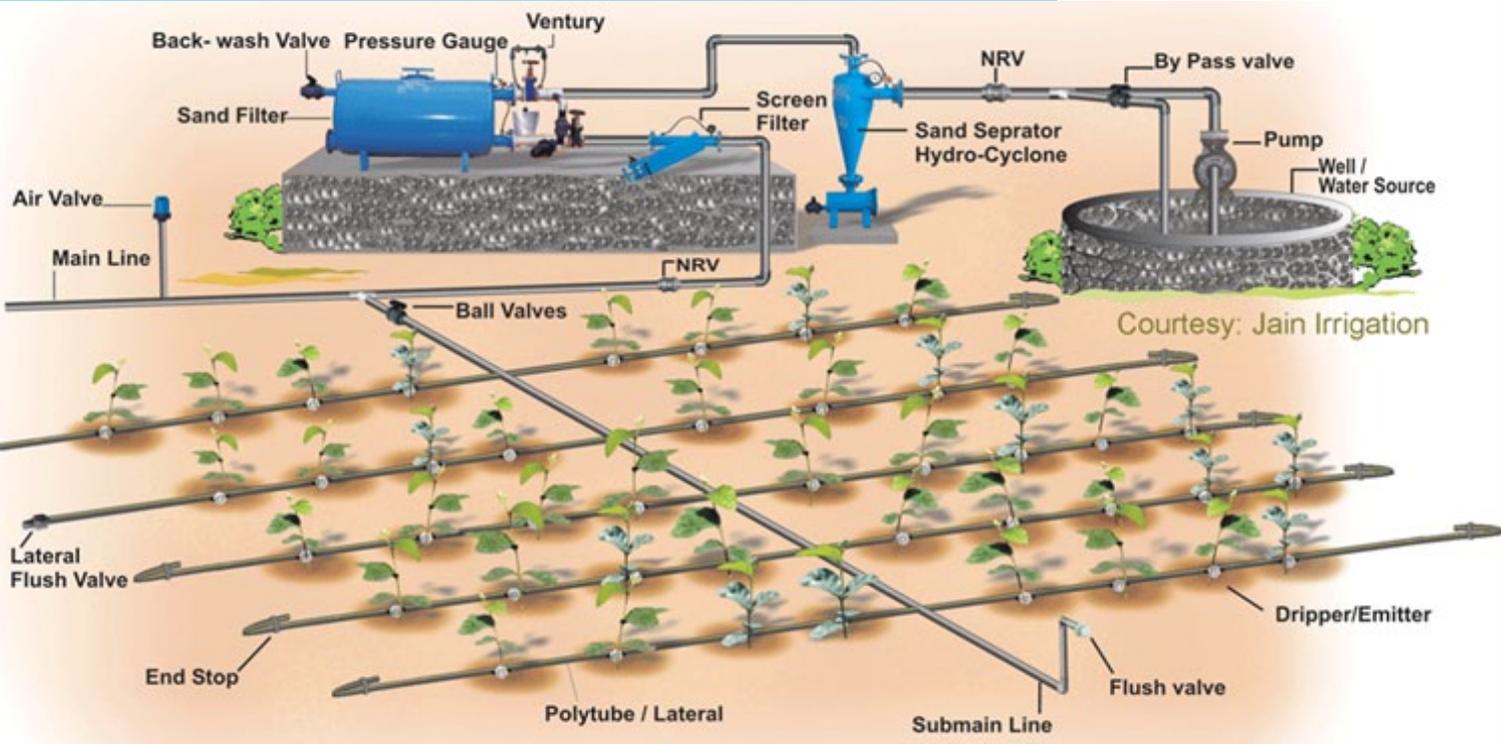
## Maintenance Practices to meet Present and Changing Plant Water Needs

- Annual maintenance of irrigation systems is necessary to keep them operating efficiently.
  - Replace broken or missing sprinkler heads
  - Straighten sprinkler heads to vertical that are tilted from winter soil heaving or blows from lawn mowers and foot traffic.
  - Pop-up heads that don't reach high enough to achieve a clear spray trajectory should be raised or replaced with taller heads.
  - Adjust head alignment so that water is not thrown onto streets and driveways .
  - Check nozzles for plugging and clean filters.
  - Check that rotor heads are turning properly.
  - Place catch containers on persistent dry spots to determine if poor sprinkler coverage is the problem. If not sprinklers, soil conditions, slope, aspect or wind should be considered.
- Periodic maintenance of irrigation systems is also needed. Plants mature and change. People also change landscapes over time. Add or relocate system components as needed to maintain uniform distribution of water. Ensure that system modifications do not exceed the system watering capacity.

- Drip irrigation installed at the base of newly planted trees should be moved as the tree root system expands. Drip irrigation is a point source delivery method that does not distribute water far away from emitters. Drip irrigation that is not relocated over time, wastes water because the fine roots that pick up moisture have grown away from the base. Tree roots grow and spread to reach two to three times the width of the tree canopy. Microspray heads can deliver water over wider areas for small trees but not to wide-ranging root systems of large trees.
- If sprinkler systems are over ten years old, they often require part replacements and component upgrades.



## TYPICAL DRP IRRIGATION SYSTEM LAYOUT



Modern irrigation techniques has arguably become the world's most valued innovation in agriculture since the invention of the impact sprinkler in the 1930s, which offered the first practical alternative to surface irrigation. Drip irrigation is becoming popular for row crops, especially in areas where water supplies are limited or recycled water is used for irrigation. Careful study of all the relevant factors like land topography, soil, water, crop and agro-climatic conditions are needed to determine the most suitable sprinkler or drip irrigation system and components to be used in a specific installation.

We at Sun & Black Flowers, in addition to Softscape, Hardscape and Swimming pool works, we also provide complete Landscape irrigation solutions for any type and any extent of landscape features with efficient design and economic cost with excellent workmanship for installation of Sprinkler and Drip irrigation systems.

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