

Are you looking for a way to irrigate your small acreage?

There are many options when searching for an appropriate irrigation method for your small acreage.

A survey of small-acreage landowners has shown a renewed interest in two methods that, while not new, are gaining popularity. These are in-line pods and traveling guns.

In-line pods

Irrigation pods are large, round, black pods with sprinklers mounted in the middle. Several pods can be connected by HDPE line to irrigate a field. This allows flexibility in arrangement depending on the field size and layout.

Flow rates and pressure typically range from 9 to 30 gallons per minute (gpm), and 35 to 60 pounds per square inch (psi), depending on the sprinkler used and number of pods. The application rate varies from 2.5 to 5 inches per acre, depending on set time (how long the in-line pods are left to water one spot), with a typical set time of either 12 or 24 hours. See table page 18.

An in-line pod benefit is they can be moved to the next set while still in operation. This is typically by using an ATV or tractor, saving time as the system does not need to be shut off and drained between sets. Irrigation pods do need a sod base to aid movement and work best after a pasture has been grazed.

Pros and cons

In-line pods are highly customizable. There are many ready-to-go kits for a wide range of field sizes and shapes, as well as varying slopes, from 1 acre to hundreds of acres. Additional lines can be used to irrigate large areas. The system can be designed to match the field, rather than the field adjusted to the system. Other uses for in-line pods include large garden areas or orchards.

These systems have not been well-suited for taller crops that can impede the sprinklers or can be damaged as the pods are moved, but new technology does allow for irrigating taller crops. You will also need open "lanes" on which the lines of pods can move through the crop.

In-line pods require daily or twice daily labor, depending on set time, and the addition of multiple lines increases this labor component.

Traveling guns

Traveling guns are large sprinklers mounted on wheels. Water is supplied through a 1- to 1-1/2-inch hose. The sprinkler is pulled across a field as the hose is pulled in and wound around a reel, powered by an engine or water drive system.

The size of the hose, sprinkler nozzle, and the length of the hose can be customized to a field and water source. While the sprinkler can reach over taller crops, it will need an open, smooth travel lane for unimpeded travel.

Pressure requirements vary from 40 to over 150 psi, depending on the size of the hose, sprinkler nozzle, etc. Most guns are capable of covering 0.2 to 0.9 acres per run and between 80 and 100 acres per gun. The application rate can be adjusted by changing the speed. See table page 18.

Pros and cons

As with in-line pods, the flexibility of the traveling guns is a big advantage. The speed, nozzle size, run time, and distance can be adjusted to change the amount of water applied. A disadvantage of the traveling guns is they often work under higher pressure, meaning higher operating cost due to a higher energy requirement to achieve the necessary pressure. Also, as with the in-line pods, they do require at least daily labor to move and reset the system.

Maintenance

Maintenance is one part inspection and two parts anticipation. Regular inspection can help find problems early, and regular replacement of worn parts will help prevent larger problems later. Keep parts on hand such as sprinklers,

gaskets, etc., that regularly need replacement. Manufacturers provide guidelines and manuals that outline proper operation, maintenance, and repair of their systems and should be referenced whenever possible.

At the end of the irrigation season, while you still have water, take time to observe your system in operation. Look for any clogged sprinklers, cracked hoses, leaks, corrosion, or other worn parts. Make plans for any big repairs well in advance of the next irrigation season. Fall maintenance can help make starting irrigation in the spring much easier, keeping an irrigation system running smoothly.

It is also important to ensure your pumping plant is running smoothly and efficiently. For more on evaluating your pumping plant, go to the *Energy Efficiency & Alternative Irrigation Efficiency: Pumping*

Plant Performance information at bit.ly/irrigationefficiency.

Choosing an appropriate irrigation system is an important step to improving your small acreage production. Understanding the options can help make an informed decision.

For more information on water-related subjects, including irrigation, visit our Barnyards & Backyards “Water” web page at bit.ly/wyo-water-info.

.....
Caleb Carter MIGHT have run through lawn sprinklers as a child. He is a University of Wyoming Extension educator based in Goshen County and serving southeast Wyoming. He can be reached at (307) 532-2436 or at ccarte13@uwyo.edu. Visit his blog at bit.ly/carterknowscrops.

Operating specifications of traveling guns and in-line pod irrigation systems

	Traveling gun sprinkler	In-line pods
Pressure	23-141 psi	35-60 psi
Flow rate	3-138 gpm	9-30 gpm
Application rate	0.05-1 inches/acre	2.5-5 inches/acre
Hours per run	2 to 20 hours	Typically 12 or 24 hour set time
Wetted diameter**	50 to 235 feet	45 to 50 feet
Area covered	0.5-0.9 acres per 100 feet of travel	Dependent on design of the system*
Irrigated acres per run	0.4-2.8 acres	Dependent on design of the system*

*In-line pods are customizable to the field, so the area covered during each set and for the entire rotation across a field depends on the number of pods, sprinkler nozzles, etc.

**Width depends upon wind and sprinkler specifications.