

Separating Fact From Fiction



You Can't Afford **Not** to Use Pivot Irrigation.



Over time, two different types of irrigation have been recognized as superior methods — drip and center pivots. Growers now associate certain pluses and minuses with each. Some of these assumptions are true. Some are myths.

So how do you make a decision between the two? You compare the facts.

There are many important factors, but here are three main considerations:

- Initial Investment Cost
- Labor – Time and Cost
- Peace of Mind

Both options offer water efficiency of 90% or more, and drip irrigation definitely has its place; it can be effective in some settings. For example, in small or irregularly shaped fields, drip is often a viable option. But in many other situations, center pivot irrigation is more cost effective and offers growers maximum control – and greater peace of mind.

Of course, when it comes to center pivots, you will never find better, more durable products and technology than those from Valley Irrigation.

#DYK

Comparing Drip and Pivot

Center Pivots Cost Less, Last Longer and Retain Their Value.

1. Initial Investment Cost

When it comes to initial investment costs, center pivots are much less expensive than drip irrigation – more than \$600 per acre (\$1,482 USD per hectare) less.

On average, pivots also last longer – 25 years or longer is normal for Valley_® equipment. The longevity of drip systems is improving, but that still depends on numerous factors and some “big ifs,” including error-free system management.

Plus, even after 15 years of consistent work, Valley pivots retain 50% of their resale value. Sellers of drip systems cannot say the same.

2. Labor

Drip systems require more labor and a higher level of management to operate and maintain. Some remote technology exists, but drip irrigation management is still largely a manual process – it can take several hours to walk a field monitoring, flushing and maintaining the filters and lines. Center pivots are a different story.

One person can remotely manage multiple machines covering numerous fields in minutes, using today’s computerized controls. Plus, you don’t have to hire people to install and remove equipment season after season.

3. Peace of Mind

Drip irrigation requires more management even if everything goes correctly, which is often a very big if. Too often, SDI systems are “out of sight, out of mind.” With a pivot, you have greater peace of mind.

Drip systems are dependent on the skill of the person doing the work, and cannot be changed after installation. Center pivot installations are comparatively simple, the system is more flexible to changing demands, and the equipment is more forgiving.

Center pivots offer more advanced remote monitoring, and it is easier to address potential problems than with drip, when pipes and tape are buried under the ground. A clogged irrigation nozzle is a brief inconvenience; a clogged drip system is a large, time-consuming expense.

Plugging remains a persistent problem with drip irrigation, and performance is highly dependent on water quality. Using wastewater requires more – and larger – equipment.

Center Pivots Cost Less and Retain their Value		
INITIAL INVESTMENT COST	SDI	CENTER PIVOT
Total	\$206,300	\$89,010
Total Savings	-	\$117,290
Cost per acre (hectare)	\$1,331 (\$3,287)	\$712 (\$1,758)
Savings per acre (hectare)	-	\$619 (\$1,529)

Figures are in U.S. dollars. Lamm, Freddie R.; O'Brien, Daniel M.; Rogers, Danny H. "Using the K-State Center Pivot Sprinkler and SDI Economic Comparison Spreadsheet – 2018": 2-4

Labor Comparison Between SDI and Center Pivots		
TIMING	SDI	CENTER PIVOT
Daily Maintenance	Flush Filter	n/a
Weekly Maintenance	Flush Lines	n/a
	Chlorinate	
Monthly Maintenance	Flush Lines	Grease Swivel
Annual Maintenance	Filter	Check oil levels in gearboxes and center drives
	Check Valves	
	Confirm emitter performance	
	Chlorinate	

DID YOU KNOW?

Claims that drip irrigation offers better ROI assume drip irrigates more of a standard section, neglecting the existence of corners or benders. **Of course, adding additional equipment to your pivot costs a little more, but you will still invest much less upfront with pivot irrigation than with drip.**

In More Detail

Initial Cost

- Pivots typically cost about \$712 per acre (\$1,758 per hectare).
- Drip systems cost almost twice as much.

Resale/ROI

- Drip systems cannot be resold, and their return on investment depends on how long they last, which in turn depends on season after season of due diligence.
- Even after 15 years, a Valley pivot still holds a resale value of 50% of the initial purchase price.

Other Costs

- Drip systems require replacement of drip tape
- Drip requires more pressure regulation, leading to increased costs.
- Additional “soft” costs with SDI include increased monitoring and management.

Management

- Monitoring drip systems requires more persistence, and can take much longer.
- Pivots benefit from more advanced remote irrigation management technology.
- Problems with SDI are not always visible; problems with pivots are soon evident.

Design and Installation

- The performance of a subsurface drip system is dependent on the skill and knowledge of the designer. If done wrong, it will be wrong until expensive fixes are made.
- Pivot installations are simpler to design, and are more flexible to changing demands.

Field Size

- Drip is better suited for small vegetable fields, orchards or vineyards.
- Pivots are best for larger fields, although options for small fields exist.

Plugging and Leaking

- Clogging is a persistent problem with drip.
- With a drip system, you must apply acid and periodically chlorinate the drip line to dissolve mineral concentration that can plug emitters.
- The above-ground sprinklers on a pivot are visible at all times, so plugging and leaking aren't a problem.
- An average nozzle on a pivot is 16 times larger than a drip emitter.

Filter Maintenance

- You must constantly monitor drip system filters, then flush or change them when necessary to prevent system failure.
- Typically, filtering is not required when using a pivot or linear (lateral).

Water Quality

- SDI requires more water quality management than pivot irrigation. If the quality of the water source changes, problems could result.
- Pivot sprinklers are not as susceptible to algae or mineralization.

Wastewater Application

- To help save your freshwater supply, center pivots are often used for controlled application of wastewater and nutrients on forage and grain crops. Because Valley pivots can handle solids, advanced filtration is not necessary.
- Applying wastewater through drip irrigation is much more complicated. Different tape with

larger emitters and more filtration is needed, and plugging occurs much more frequently.

Terrain

- Pivots work well regardless of the terrain; drip systems are less effective on sloped surfaces.

Pests

- Rats, crickets, corn borers and mealy worms can attack vulnerable drip tape and cause leaks.
- Pests cannot easily damage the steel structure and spray nozzles of a center pivot.

Crop Rotation

- With a drip system, crop rotation is difficult because of the predetermined row spacing.
- With center pivots, you can easily rotate your crops as often as necessary, or your pivot circle can be segmented with different crops.

Environmental Impact

- Drip tape technology is improving, and some can last for many years. Still, depending on the crop and thickness of the tape, you may need to move it every year and replace it every five.
- After that, many drip irrigators have to contact hazardous material experts for proper disposal of the used tape.
- Valley equipment is made of 100% recyclable steel, and is easy to remove.

Other Limitations

- With drip, tillage options may be limited.
- Drip has limitations in light and sandy soils.

Even after this comparison, you might still need more information. Your local Valley Irrigation dealer is an excellent resource to answer all your questions and work with you to determine the right solution to irrigate your crops in any terrain or soil type. Contact yours today.



See your local authorized Valley dealer for complete details.

valleyirrigation.com

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