Drip vs Pivot
The Best Investment For Your Operation...

With water resources decreasing throughout the world and with a large portion of those resources being used for agriculture the need for more efficient irrigation practices arose. Out of this need two efficient irrigation methods emerged, center pivot irrigation and drip irrigation. Both methods provide high efficiency water usage, have been used throughout the world, and help improve yields. Even though there are similarities, only one method can withstand the test of time and is the Industry’s most economical solution to irrigation, the Valley® center pivot.

When comparing drip systems to center pivot irrigation there are advantages and disadvantages you should take into account before deciding on one or the other. You can prepare to make an informed decision by comparing the following advantages and disadvantages associated with drip and center pivot irrigation:

- investment costs
- installation
- versatility
- potential equipment issues
- labor
- management time
- limitations

After fully analyzing these issues, you’ll find that pivot irrigation is clearly the most advantageous in the majority of situations. And when it comes to center pivots, you won’t find better products than those from Valley.

Investment Cost

With center pivot equipment you will notice clear advantages over subsurface drip irrigation (SDI) in the investment costs. It is not just initial investment costs you need to consider, but other costs as well. To the right, you can see an investment comparison of drip irrigation and center pivot irrigation and below that a comparison of other associated costs for each system.

Installation

Installation of driplines is very expensive because it is a labor intensive process with the use of specialized equipment. Once installed the performance of the system is highly dependent upon the knowledge and skill of the designer.

In most situations a center pivot can be installed in one day. The design of a pivot is fairly simple and has a standardized installation process.

In the table below you will see that subsurface drip irrigation (SDI) has a high investment cost of $3280.00 per hectare ($1327.00 per acre) while center pivot irrigation equipment has an investment cost of $1420.00 per hectare ($575.00 per acre).

<table>
<thead>
<tr>
<th>Type of Irrigation</th>
<th>Gross Cost (USD$/Ha)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Center Pivot</td>
<td>$1420.00*</td>
</tr>
<tr>
<td>Subsurface Drip</td>
<td>$3230.00**</td>
</tr>
<tr>
<td>Savings</td>
<td>($1810.00)</td>
</tr>
</tbody>
</table>

Versatility

Subsurface drip systems offer little in the way of versatility. Crop rotation is difficult because of pre-determined row spacing and if you decide to rotate your crops that may result in a substantial yield loss. The low pressures which SDI operates makes irrigating at an incline extremely difficult and inefficient.

Center pivots have many advantages over drip irrigation when it comes to versatility in your fields. Center pivots can irrigate rolling terrain, be used on various crops in the same field from season to season, or towed to irrigate multiple fields.

Potential Equipment Issues

System Plugging and Leaking

SDI drip systems have very small diameter emitters which can easily be plugged by:

- soil particles
- minerals
- root intrusion; which requires you to flush your system with chemicals to kill the root

Center Pivots have above ground sprinklers that are visible at all times so plugging and leaking are not problems. If a sprinkler emitter is plugged it will be easy to spot and fix without the use of chemicals.

Rodents

Rats, crickets, corn borers, and mealy worms can attack drip tape and cause leaks. You must spend time and money to combat these pests.

Center Pivots are made of steel and can not be easily damaged by pests.

Labor

Drip systems are notorious for the amount of labor required to operate and maintain them. It can take several hours to walk a field monitoring, flushing, and maintaining the filters and lines. The table below shoes the recommended maintenance for each irrigation method.

With center pivots and the remote monitoring capabilities the machines offer, one person can run multiple machines covering thousands of hectares from home.

### Timing

<table>
<thead>
<tr>
<th>TIMING</th>
<th>SDI</th>
<th>CENTER PIVOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Daily Maintenance</td>
<td>Flush filter</td>
<td></td>
</tr>
<tr>
<td>Weekly Maintenance</td>
<td>Pump flow rate and zone pressure</td>
<td>Pump Station Check</td>
</tr>
<tr>
<td></td>
<td>Full System Check*</td>
<td>Grease Swivel</td>
</tr>
<tr>
<td>Monthly Maintenance</td>
<td>Flush lines</td>
<td></td>
</tr>
<tr>
<td>Annual Maintenance</td>
<td>Filter</td>
<td>Check valves</td>
</tr>
<tr>
<td></td>
<td>Check valves</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Confirm emitter</td>
<td>Check oil levels in centerdrives</td>
</tr>
<tr>
<td></td>
<td>Performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chlorinate</td>
<td></td>
</tr>
</tbody>
</table>

...Valley Center Pivots
**Limitations**

**Germination**
Drip irrigation systems placed below the root zone are unable to germinate seeds. Many growers who have drip irrigation systems must use another method of irrigation to germinate.

Sprinkler heads on a pivot apply water similar to rain which causes seeds to germinate. Pivots can easily be fit with two sprinkler packages - one for germination and the other for irrigation.

**Soil Salinity**
Drip irrigation allows salt to accumulate between the irrigated soil and the non-irrigated surface. Many growers with SDI systems utilize a sprinkler irrigation method to leach salts down.

Center pivot systems distribute water evenly over the surface which irrigates the crops while it leaches salts below the root zone.

**Water Supply Issues and System Capacity**
To maximize your potential with SDI you need a constant supply of water available. For some, this is not an option because of load control of electricity and water delivery schedules.

Center pivots do not need a constant supply of water and you can choose when your machine will irrigate.

**Wastewater Re-use**
Applying wastewater through drip irrigation is complicated. Different tape with larger emitters and more filtration is needed and plugging frequently occurs.

Center pivots are often used for the controlled application of wastewater and nutrients on forage and grain crops. Valley pivots can handle solids and advanced filtration is not necessary.

See your local authorized Valley Dealer for complete details.