

Drip and Sprinkler Systems

Install a Drip or Sprinkler system?

This is a question many growers face. To choose the most suitable system needs experience and technical knowledge.

As a rule of thumb you will not see large commercial Olive or Vineyard growers using sprinklers. The reason is that they need an efficient and reliable irrigation system that requires little maintenance. The larger the grove the more work a micro-sprinkler system requires.

Drip Irrigation has been proven over the years, with many farmers changing over to drip as they find sprinklers require more maintenance and drip irrigation improves their yield.

Labour, Water and Power savings are a significant benefit when using drip.



80% of Wine Grapes are grown on Drip Irrigation

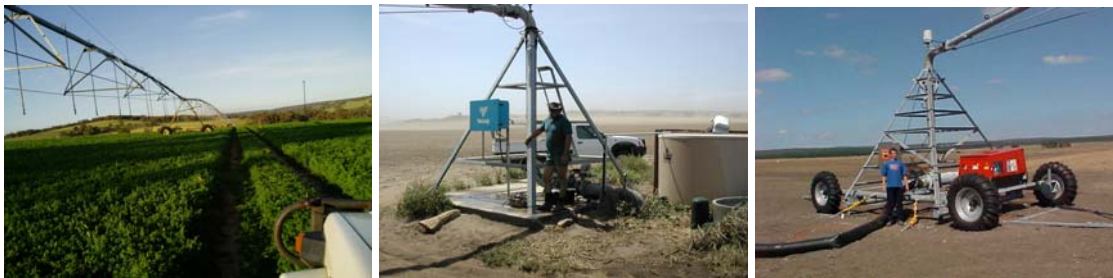
So why do some growers use sprinklers?

Traditional and Emotional Reasons to use Sprinklers

- In many cases it is an old system that has not been upgraded
- The grower feels that he is in control if he can see the water sprinkling, so he avoids drip. In most cases this grower is a small scale grower, and is driven by emotion not profit
- The neighbour has sprinklers

Technical Reasons to use Sprinklers

- The crop requires wide shallow irrigation such as Avocado or Bananas
- Inter-Row cropping is required
- Inter-Row soil cover is required and is of a financial benefit. Some growers feel that incorporating the inter-row crop back into the soil increases organic matter. The actual organic matter % increase in many cases is not of agronomic benefit
- The crop requires regular irrigation, such as plants in pots with porous media
- The cost of drip in some cases is prohibitive, such as carrots
- Dust protection in high wind is required for carrots to prevent sand damage when the crop is young some growers plant a pre-emergent cereal crop to prevent sand damage.
- Nursery propagation requiring high humidity such as Carnation production nursery
- Establishment of seed crops
- Pasture crops such as Lucerne are commonly grown in weaker soils and by tradition use sprinklers or Pivots, but recent agronomic evidence shows drip irrigation offers significant benefits to some pasture growers.



Pivot Irrigated Lucerne, Carrots and field crops grown in Gingin

Climate Control

- Frost protection – Some Table Grape growers in frost areas require this feature
- Cooling – Some growers require cooling



In both cases the sprinkler system for climate control using best practice should be purpose designed and separate from the irrigation system.

The fertiliser is still distributed through the irrigation system, not the climate control irrigation system.

Micro- Sprinklers Features and Design

If you use micro sprinklers ensure they have the following features

- Insect Proof (Anti-Ant)



A Snail trying to enter the sprinkler



Greenhouse Micros and Foggers

- Pressure Regulated – This will ensure even water distribution throughout the grove and improve water droplet uniformity and avoid misting.
- Good Start Up – Some types of sprinklers stick in one spot irrigating without spinning directing water in a stream to one point.
- Uniform Coverage – Minimum disruption to the spray pattern
- Simple Design – Easy to service and pull apart if required
- Strong components – As Sprinklers have many parts, the actual parts need to be strong enough for farming conditions, say branches falling onto ground could snap a weak sprinkler head
- Strong Stake
- “Self Cleaning” - Wide Water Turbulent Flow Passages to avoid sediment build up
- UV Stable – All components to have suitable UV sustainability

The sprinkler distribution and coverage uniformities should not be less than 85%. Consider using larger droplet size against wind.

Some sprinklers have a two stage feature spreader for young trees, allowing the grower to increase the wetted area as the tree matures.



Use soil moisture loggers to ensure your uniformity and correct amount of water

