



Irrigation for Profit

Centre Pivot Irrigation – Fertigation

Introduction

Fertigation is the process of injecting fertiliser into irrigation water and applying through the irrigation system to the crop/field.

Fertigation

Advantages of fertigation:

- Nutrients can be applied on the basis of crop need;
- The amount of water applied can control the placement of nutrients and readiness for plant uptake;
- Uniform nutrient application if good system water distribution uniformity;
- Eliminate some tillage operations;
- Reduce application costs;
- Less groundwater contamination, through reduced fertiliser use; and
- Minimise crop damage during application.

Disadvantages of fertigation:

- Nutrient application uniformity is only as good as the irrigation system distribution uniformity;
- Some fertiliser materials often can not be used;
- Localised fertiliser placement is not possible; and
- Additional equipment is required for fertiliser injection.

Water Quality

Water quality should be considered before attempting to fertigate, as precipitation of some element in the fertiliser may occur. Other reactions may occur between the fertiliser and impurities in the water.

System design and Construction

Due to the nature of fertigation/chemigation it may induce or accelerate corrosion of irrigation equipment and reduce the system life. Consideration should be given to the construction material and the fertiliser/chemical used.

The system should be fitted with a backflow prevention device to ensure no contamination of the water source.

Common Fertilisers Used

Urea is the only common fertiliser used. Growers typically apply less than 30 units of Nitrogen. This is approximately 60 kg/ha of urea. 30 kg of urea can be diluted in 100 litres of water. Greater dilution rates should be used if the “jar test” shows cloudiness or sediment.