



## Liquid & Suspension Fertilisers

### Fertigation

The technique of combining fertiliser application with irrigation in horticulture is very widespread and the common term for it - 'fertigation' - is well known.

#### **Some of the advantages of fertigation are as follows:**

- (1) A reduction in operating costs as extra time spent applying fertiliser is no longer required.
- (2) A regular, evenly distributed supply of fertiliser providing the quantity of nutrients required at a particular time.
- (3) Partial nutrient uptake through the leaves. (Depending on the irrigation system.)

Although the technicalities of combined fertiliser/water application in horticulture may differ, the introduction of fertilisers to the irrigation system is either direct (as with liquid fertilisers) or via a stock solution and dosing system.

#### **Quality Requirements:**

Some of the quality requirements that special fertilisers will have to meet with this method of fertiliser application are as follows:

- (1) The nutrient solution must be chemically stable in the concentration of the stock solution, including when it is in the equipment. Precipitation caused, for example, by the formation of calcium or magnesium phosphates (as a result of high Mg or Ca content in the irrigation water) not only causes the nutrients to become fixed but also blocks nozzles.
- (2) The products must have a high degree of purity (no raw material impurities) so that problems with the irrigation system will not occur.
- (3) The fertiliser solution must be compatible with the type of equipment being used, i.e. they must not react chemically with the metal components and seals.



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## Conductivity of Wuxal formulations at various concentrations

	Concentration of Wuxal fertiliser in %					
	0.05	0.1	0.15	0.2	0.5	1
	CF	CF	CF	CF	CF	CF
Wuxal Calcium	4.2	8.8	11.6	15	35.2	66.2
Wuxal MicroPlant	2.7	5.3	7.5	9.8	21.8	40.8
Wuxal Super	2.7	5.1	7.7	9.9	22.7	43
Wuxal Top N	1	1.8	2.6	3.6	8.4	16
Wuxal Top P	3	5.5	8.1	10.5	23.4	43.5

**As an example, 0.2% = 2.0ml per 1000ml or 2.0ml per litre**

Please note: Stated conductivity is recorded in distilled water at 25°C. The above conductivity values DO NOT include the conductivity of the raw water. This value should be added.

$$10 \text{ CF} = 1 \text{ EC} = 1 \text{ mS/cm} = 1000 \mu\text{S/cm}$$

It is important that the stock solution is prepared in a separate container. Residues of undissolved nutrient salts or any other solid particles can lead to faulty operation or damage to dosing systems.

#### Making a nutrient stock solution

For example: desired nutrient strength = 0.2% = 0.2ml per 100ml = 2.0ml per litre:

@ 1:100 injector dilution (1 litre of stock feeds 100 litres water) you need 200ml for every litre of stock. Therefore, a 100 litre stock tank will require 20L Wuxal product + 80L Water

In the case of Wuxal Super being used in the example above, the water at the dripper should have an EC of approximately 1.0 (CF of 10)