

### ***How to Inject Fertilizers and Fertilizer Supplements***

Your Dosmatic Advantage fertilizer injectors are normally used to make a concentrated solution into a diluted nutrient solution. In hydroponics a constant feed of a diluted solution is required. This solution can be made in a large tank. For example, dissolving 5 lbs. In 1000 gallons is the normal dilution ratio. If 5 lbs. is dissolved in 10 gallons and used with a 1:100 injector, the injector will make the dilution for you, as you need it, for 1000 gallons. This is a much simpler way to achieve the dilution you need.

Injectors are simple dilution machines. Most have a range of dilution from 1:50 to 1:200. The higher the ration the weaker the solution. An injector allows you to increase or decrease your nutrient solution's concentration as required, at any time and with ease. Injectors can be used to feed the plants directly or used to fill a tank that contains a pump. In hydroponics a two port concentrate is always needed if calcium is supplied as a liquid fertilizer.

Calcium is a necessary major element in vegetables and strawberries. However, the only form of soluble calcium is calcium nitrate or calcium chloride. Calcium nitrate sometimes puts too much nitrogen in the feed solution and calcium chloride is considered a "high salt" compound. If calcium could be added as a slow release compound such as limestone, dolomite limestone, or calcium phosphate it would be an advantage in most nutrient regimes for vegetables. In the future Verti-Gro hopes to make a pre-mix that contains calcium, magnesium and sulfur that can be added to the coconut fiber prior to mixing with perlite.

Strawberries as well as tomatoes require a lot of calcium and also not so much nitrogen. This makes it necessary at times to apply calcium in a foliar applicator. Chelated calcium, deep root or even calcium chloride may be used. When it is cloudy and humid calcium is not taken up as much as needed and soft or mushy fruit may occur. Apply calcium as a foliar spray during periods of cloudy and humid conditions. Supplements can be injected at any time using one or both of the injectors. In order to do this simply remove the tube and strainer from the 50 gallon concentrate and put it in a smaller container (1-5 gallon size) that contains the supplement you are going to use.

#### **To calculate how to add a supplement follow these simple steps:**

1. Set the injector at 1:128 for convenience.  
(This is one ounce per gallon since there are 128 ounces per gallon.)
2. If the instruction calls for one ounce per gallon then use one gallon of the concentrate.
3. Determine how much supplement you need by multiplying the flow of the emitter by the number of emitters. Each emitter produces .07 gpm and for every 100 emitters you have 7 gallons of diluted fertilizer solution.

#### **This example is easy to follow:**

300 emitters will use 21 gallons of diluted nutrient, etc. per minute.

If it takes 5 minutes to wet the stock then 105 gallons of diluted nutrient or about 1 gallon of concentrate would be needed.

Vertical Gardening

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