TABLE EXAMPLES

1. How much 10-10-10 soluble fertilizer mix is required to mix with water to make a 100 ppm solution of actual nitrogen?

From Table 1 a value of **0.83** lb of soluble fertilizer is required per 100 gallons of water (solution) to provide a 100 ppm solution of nitrogen.

2. Chlorine is to be injected into an irrigation system which has a water delivery (supply) rate of 400 gpm. The chlorine stock solution contains 8 % of "free" chlorine. What stock solution injection rate is necessary to provide 20 ppm of "free" chlorine to the irrigation supply water?

Table 2 (or Table 3) indicates that to provide a 20 ppm concentration level with an 8 % stock solution, approximately **0.025 gpm (1.50 gph)** of stock solution injection is necessary per 100 gpm of water delivery rate. Therefore, a 400 gpm water delivery rate requires a stock solution injection rate of:

(0.025 gpm/100 gpm) (400 gpm) = **0.10 gpm**.

or

(1.50 gph/100 gpm)(400 gpm) = **6.0 gph**.

Therefore injecting an 8 % stock solution of chlorine at 0.10 gpm (6.0 gph) into an irrigation system with a system flow rate of 400 gpm will provide approximately 20 ppm of "free" chlorine into the system.

3. A vegetable field is to be fertigated (have fertilizer injected) on a weekly basis with three pounds of nitrogen (N) per 1000 feet of plant bed per week. The field is 25 acres in area with 6000 bedded feet per acre. What size of feeder tank is necessary to hold the required volume of fertilizer mixture if the mixture is a 4-0-8 solution with a specific weight of 10 lb/gal?

The required amount of fertilizer is:

= (3 lb/1000 ft) (6000 ft/acre) = 18 lb/acre

= (18 lb/acre) (25 acres)

= **450 lb** of N per week.

Table 4 is used to determine the amount of chemical (nitrogen) per gallon of solution. A 4-0-8 solution of fertilizer (S_x = 10) has 4 % nitrogen.

From Table 4 read the actual amount of N as **0.40 lb** per gallon of solution.

Next use Table 5 to determine the required volume of mixture. For a 0.40 lb/gal chemical (nitrogen) density and 450 lb requirement, read **1125 gallons** of fertilizer mixture required. Therefore, the supply tank must have a minimum capacity of 1125 gallons to hold the weekly supply of fertilizer.

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