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Introduction:

As we've discussed in previous research updates, it is critical to dose properly when using any type of flower food in order to get the best results. Recently, FloraLife introduced a new handheld dosing system that accurately and easily doses flower food solutions. This sprayer directly connects to a hose and has different settings allowing flexibility in the choice of product used. In this research update, I discuss results of tests conducted to confirm the dosing accuracy of the FloraLife® QuickMix dosing system using two different FloraLife® Ultra (concentrated) Feeding products.



Research:

The dosing accuracy was determined by measuring the consumption of concentrate in the dosing unit for a given volume of mixed solution discharged. Then, comparing it to the theoretical volume of concentrate to be used up for the given dose setting. 500ml of FloraLife® Express Ultra 300 was placed into the FloraLife® QuickMix dosing system. The unit was set to 1% and then 50 liters of mixed solution was discharged and measured. This was repeated with another 500ml of FloraLife® Express Ultra 300 and 1 liter of FloraLife Crystal Clear® Ultra (split into 500ml twice) to make 50 L of use solution each time. The remaining liquid in the sprayer was measured to check the dosing accuracy. Water pressure (PSI) settings were changed during the second 500ml of each product to check the dosing accuracy at different water pressures. Four samples (~70ml each) were taken at different intervals of filling until the 50 liter of use solution was reached (at 10, 25, 40, and 50 liters). The pH was measured for each sample and compared to a hand-mixed use solution sample of each product to confirm the dosing accuracy.

Results:

Table 1. Calculated dose based on the amount of solution used for 50 liters.

Product	PSI	Liquid Used	Calculated Dose
FloraLife® Express Ultra 300	44	500ml	10ml/L
FloraLife® Express Ultra 300	40	485ml	9.7ml/L
FloraLife Crystal Clear® Ultra	44	480ml	9.6ml/L
FloraLife Crystal Clear® Ultra	40	500ml	10ml/L



Table 2. pH of the use solution taken at different intervals of filling to 50 liters.

Samples Taken	FloraLife® Express Ultra 300 pH	FloraLife Crystal Clear® Ultra pH
Use Solution (Hand Mixed)	4.71	4.66
10L	4.68	4.84
25L	4.67	4.70
~40L	4.70	4.67
50L	4.71	4.74
Average	4.69	4.74

Conclusion:

Based on the results, the FloraLife® QuickMix Handheld Dosing System allows for accurate dosing with the pH range falling within 0.2 pH units for both FloraLife® Ultra Feeding products compared to accurately hand-mixed use solution. It also shows accurate dosing of large quantities of both flower food products at different PSI settings with the percent deviation being only 1.8%.