

# Microcomputer Calculation of Growth Regulator Solutions

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The chemical concentration used during application of plant growth regulators is important for obtaining a desirable response (Davis et al., 1988; Larson, 1985). Even small errors in calculating growth retardant dilutions can delay flowering, reduce flower size, or cause excessive or inadequate height control. Some articles elucidate the formulae and calculations for soil drenches and sprays used with ornamental crops (Barrett, 1983; Gilbertz, 1989), but a computer program would simplify the calculations even further. With this in mind, a stand-alone microcomputer program was written (Fig. 1) that simplifies the calculations involved and provides information on costs per application.

The software is written in BASIC and compiled as a stand-alone executable program for IBM-compatible computers (minimum configuration: 64K and one floppy drive). The program presents a menu of growth retardants stored in a separate data file. Other compounds can be added permanently to the menu by answering a series of program prompts. The user can choose to input cost of the compounds, which will be used to calculate the expense of the requested treatment and number of plants treatable for the container size and chemical concentra-

tion specified. These results may be useful for economic comparison of compounds or to answer "what if" questions. Calculations can be based on final solution quantity needed, bench area to be sprayed (calculated at 200 ml solution/m<sup>2</sup>), or number of plants to be drenched. Chemical sprays are calculated using milligrams per liter or percent solution. Soil drenches are determined using desired drench volume and rate expressed as milligrams per plant, grams per plant, or milligrams per liter. Solutions are then calculated and mixing instructions are displayed on screen in metric and English units. The dilution/cost screen changes depending on the treatment quantity (Fig. 2).

Scientists can obtain a free copy of the program (additional significant digits were added for scientific use) by sending a self-addressed diskette mailer with formatted diskette to D.A.G. Commercial operators can obtain a copy with users' guide for nominal

## PLANT GROWTH REGULATOR CALCULATOR

Mix Compound A at any of the following rates and apply 4 oz per container.

20 milliliters per 10 gallons  
0.7 fluid ounces per 10 gallons  
1.4 tablespoons per 10 gallons  
20.1 milliliters per 38 liters  
4.1 teaspoons per 38 liters  
1.4 tablespoons per 38 liters

Teaspoon and tablespoon measurements are approximate only - weight/volume measurements should be used whenever possible.

A quart of Compound A will treat 15135 containers

The cost of this treatment will be \$1.95

Another (y/n)?

Fig. 2. Mixing instructions for 10 gallons (37.9 liters) of solution to apply 0.25 mg of compound A per container as a 4-fl. oz (118.3-ml) soil drench (y/n = yes/no).

charge through: UGA Extension Service, Management Operations, 215 Conner Hall, Athens, GA 30602, 404/542-8999.

## Literature Cited

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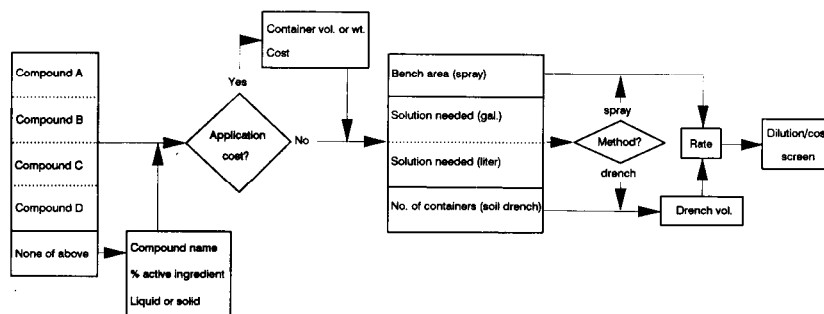


Fig. 1. Flow chart of program to calculate growth regulator solutions.

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