MAKING A GRAPHICAL TRACK FOR A POINSETTIA CROP

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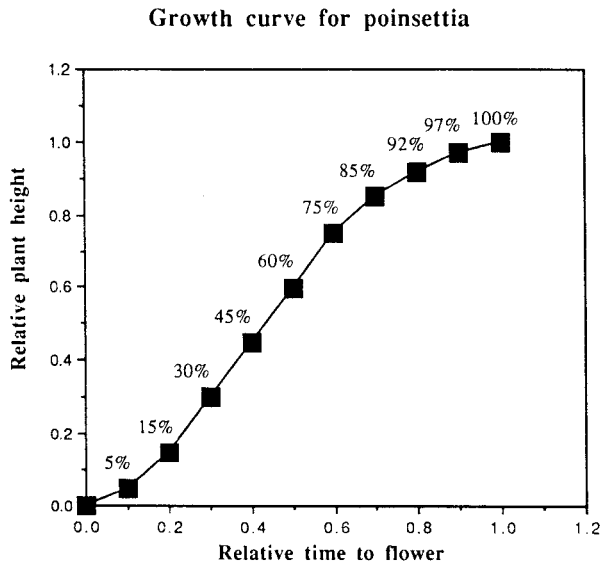
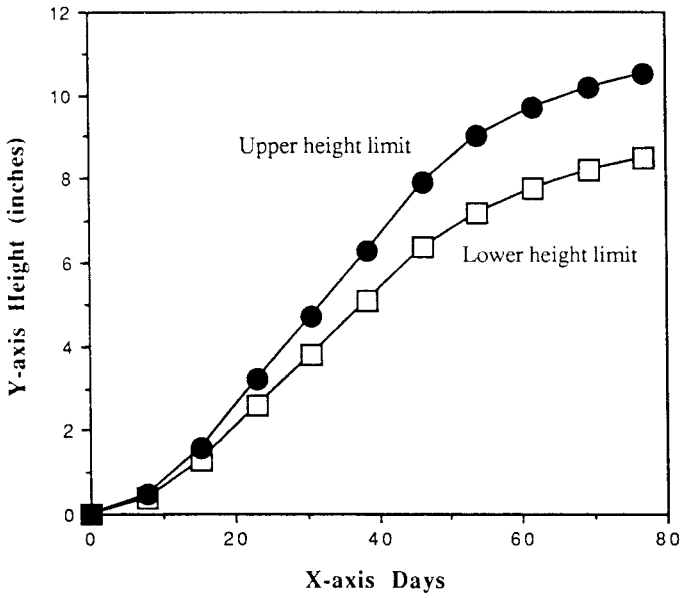
Figure 1.



To make a graphical track for a poinsettia crop, start with the growth curve in Figure 1. This is a typical growth curve for a poinsettia crop -- it's called a sigmoid curve. Along the points on this curve you can see stages of growth for a typical poinsettia. You initially see a lag phase, or a period when the plant is getting established in the pot. Zero to about 15% of the elongation occurs during this phase. Then the rapid elongation phase, when the plant is putting on most of its height (15 to 85% of growth on our graph). The plateau phase represents that period in plant growth when the flower buds are developing and the rate of height increase is slowing down (in our graph from 85 to 97%). And finally flowering, where the plant is in flower and ready for sale (100% of the desired height). From the curve and the percentages shown you can make your own growth curve for any poinsettia crop and understand where your plants are in their growth phases.

Figure 2.

Graphical tracking window for poinsettia



For the purpose of example, let's use the poinsettia crop we grew at the university, which has an 11-week (77 days) production time from pinch to finish. The pot height is 5.5 inches; cutting height is 4 inches. Final desired height is between 18 and 20 inches, determined by customer specifications.

From the curve and the percentages shown you can make your own growth curve for any poinsettia crop and understand where your plants are in their growth phases.

The growth we're really concerned with is the lateral shoot growth after pinching.

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Lateral shoot length = 18 to 20 inches final plant height - 4 inch cutting height - 5.5 inch pot height = 8.5 inches to 10.5 inches needed growth.

Give yourself a window on your final lateral shoot length of 1 or 2 inches.

In this case, over the 77-day crop time, we want the lateral shoots to elongate at least 8.5 inches but no more than 10.5 inches. The lateral shoot lengths are numbers you'll use to calculate the upper and lower limits of your tracking window.

Table 1. X-axis

1	2	3
Time (%)	**Calculation (time % as a decimal x days from pinch to flower**	**Days (x-value)**
0	0 x 77	0
10	0.1 x 77	7.7
20	0.2 x 77	15.4
30	0.3 x 77	23.1
40	0.4 x 77	30.8
50	0.5 x 77	38.5
60	0.6 x 77	46.2
70	0.7 x 77	53.9
80	0.8 x 77	61.6
90	0.9 x 77	69.3
100	1.0 x 77	77.0

Now, to make the graphical tracking window, you'll need to make two tables, x-axis and y-axis like the ones on this page. In both tables, the relative time (Table 1, column 1) and relative height columns (Table 2, column 1) stay the same for every poinsettia graph. The numbers you need to fill in are the number of days from pinch to flower on the x-axis table (in our example 77 days) (Table 1, column 2) and the lower and upper height limits on the y-axis table (8.5 and 10.5 inches) (Table 2, columns 2 and 4).

The numbers in the third column in Table 1 and the third and fifth columns in Table 2 are the ones we calculate, these are the numbers we'll use to create your tracking window. In the x-axis table (Table 1), multiply the time in crop development (expressed as a decimal not a percentage) by the number of days from pinch to flower to get your x values. In the y-axis table (Table 2), multiply the crop height (taken from the growth curve and expressed as a decimal,

Table 2. Y-axis

1	2	3	4	5
Height (% taken from growth curve)	**Calculation (height % as a decimal x final height lower limit)**	**Lower height limit (inches) (y-value)**	**Calculation (___ x final height upper limit)**	**Upper height limit (inches) (y-value)**
0	0 x 8.5	0	0 x 10.5	0
5	0.05 x 8.5	0.4	0.05 x 10.5	0.5
15	0.15 x 8.5	1.3	0.15 x 10.5	1.6
30	0.30 x 8.5	2.6	0.30 x 10.5	3.2
45	0.45 x 8.5	3.8	0.45 x 10.5	4.7
60	0.60 x 8.5	5.1	0.60 x 10.5	6.3
75	0.75 x 8.5	6.4	0.75 x 10.5	7.9
85	0.85 x 8.5	7.2	0.85 x 10.5	9.0
92	0.92 x 8.5	7.8	0.92 x 10.5	9.7
97	0.97 x 8.5	8.2	0.97 x 10.5	10.2
100	1.00 x 8.5	8.5	1.00 x 10.5	10.5

The lateral shoot lengths are numbers you'll use to calculate the upper and lower limits of your tracking window.

not a percentage) by the lower final height limit to get y values for the lower line of your tracking window. Follow the same procedure with the upper final height limit to get y-values for the upper line of your tracking window.

Use the numbers you've calculated (Table 1, column 3; Table 2, columns 3 and 5) to create a graphical tracking window. Measure sample plants regularly (use different plants over time) and plot average lateral shoot length (y-value) against the day in crop development (x-value). Remember lateral shoot length = total height - mother shoot height - pot height. Points should fall within the tracking window. If the plants are getting too tall you may need to apply growth regulators, or use -DIF; if the plants are too short, you may need to increase the day temperature relative to the night temperature to increase the elongation of the plants.

The tables and corresponding graphical tracks are easiest to make if you have a spreadsheet computer software program.

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