Using Computers to Plan Perennial Production

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I have always considered PLANNING as the first step in perennial production. Using computers to help plan perennial production is a great way to save time and improve accuracy of planning. The main advantage is that using computers forces you to be organized in a logical fashion. Like using many types of computer programs, it will take some time to get used to using a program, but once you have it mastered, it will allow you to be very productive in your planning process.

Some reasons to use a computer program to help you in your production planning are:

1) Using computers will force you to become organized, and you will become more productive.
2) There are so many perennials that you should have in your list to have a good product mix. The more plants you have, the more complicated the planning process becomes.
3) Very few perennials can follow the same production "recipe". Every plant is different, and you may find that a certain crop will not grow the same in successive years, even though the production schedule is the same.
4) You want to be able to offer perennials when your customers want them. There is a small window of opportunity to sell your crop.
5) You do not want to leave any cultivars out especially if you grow a large number of cultivars.
6) You may have a special order for custom growing some plants.

Once you have decided that using a computer can help you become more organized and productive, you need to decide if you will buy a program specifically suited for your needs, or try to create a program on your own.

If you decide to buy a computer software program to help in your planning, you need to search the market to see what is out there. Expect to pay up to several thousand dollars for software programs that are specific for the nursery industry. Often you may find one of your fellow nurserymen is happy or not happy with a program he/she is using, and that may help you to narrow down your choice. Check trade publications for their "buying guides" to look up computer companies, or visit some trade shows to see what is on display. Since this is a decision that you will need to live with for a long time, be sure to ask the computer software company some questions: (1) Does the program allow you to keep growing information in the product file for each plant, such as finish time, percent harvest, plug tray size, source for seeds, cuttings, etc. (2) How sophisticated is the growing program — can you create reports that tell you which plants to produce, how many plants, when to start the plants, materials lists, square footage needed, etc. (3) Does the program include the ability to track maintenance schedules, such as when to apply fertilizer, when to prune, when to make chemical applications? Another helpful feature would be the ability to track those chemical applications, and track chemical inventory. (4) Does the program allow you to track orders, so that you know how many plants of an item you have sold (orders committed), have left to sell, have in production, and when the

Table 1. Spreadsheet explant to help organize production.

PERENNIAL PRODUCTION SCHEDULE												
	Spring production						Plug-tray production					
A	B	C	D	E	F	G	H	I	J	K	L	M
Achillea 'Moonshine'	1000	12	4	0.95	1053	8	0.90	1170	72	17	4	4
Achillea 'Moonshine'	1000	14	4	0.95	1053	10	0.90	1170	72	17	4	6
Achillea 'Moonshine'	1000	16	4	0.95	1053	12	0.90	1170	72	17	4	8
Achillea 'Moonshine'	1000	18	3	0.95	1053	15	0.90	1170	72	17	4	11
Coreopsis 'Sunrise'	600	12	6	0.95	632	6	0.95	665	200	4	5	1
Coreopsis 'Sunrise'	600	14	6	0.95	632	8	0.95	665	200	4	5	3
Coreopsis 'Sunrise'	600	16	6	0.95	632	10	0.95	665	200	4	5	5
Coreopsis 'Sunrise'	600	18	5	0.95	632	13	0.95	665	200	4	5	8
Rudbeckia 'Goldstrum'	2000	12	5	0.98	2041	7	0.95	2148	98	22	4	3
Rudbeckia 'Goldstrum'	2000	14	5	0.98	2041	9	0.95	2148	98	22	4	5
Rudbeckia 'Goldstrum'	2000	16	5	0.98	2041	11	0.95	2148	98	22	4	7
Rudbeckia 'Goldstrum'	2000	18	4	0.98	2041	14	0.95	2148	98	22	4	10
Rudbeckia 'Goldstrum'	2000	20	4	0.98	2041	16	0.95	2148	98	22	4	12

Column definitions

A = Plant species to by produced
B = Total quantity of plants desired to sell (sales quota)
C = Number of the week (calendar year) needed
D = Weeks needed to finish from transplanting to sale
E = "Harvest percentage" given in decimal equivalent (this give the grower the number needed to transplant — based on experience — in order to sell the desired quantity.
F = Number of plants to transplant to achieve sales quota (Column B ÷ E)
G = Week number to transplant plugs to finished container (Column C - column D)
H = "Harvest Percentage" of cells in plug tray, decimal equivalent
I = Number of cuttings or seedling needed (column F ÷ column H)
J = Number of cells per plug tray
K = Number of plug trays to start (column I ÷ column J); the resulting number should be rounded up to the next whole number
L = Weeks needed to finish from sticking cuttings or sowing seed until plug tray will be ready to transplant
M = Week number in which to start the plug tray (seed or cutting)

next crop will be ready. Arrange to have the company demo the program so you can actually see the program work, or visit a site where the program has been installed. If you want to try to create your own program to plan perennial production, a software package with a spreadsheet or database may be all you need, and may give you a way to customize the reports to your liking. Expect to pay a few hundred dollars for this type of software.

I put together a very simple spreadsheet that can help to organize your production (Table 1). You may want to have different spreadsheets for summer production, winter production, custom orders, plug tray production, finished production, etc. This spreadsheet can include any kind of information that is important to you in your production, and once you make the template for the information you need, and set up the formulas for each cell address, you can let the spreadsheet do the work. The goal of the process is to organize your production to make you and your employees more productive. You can make this spreadsheet as simple or as complicated as you want. The left hand column (column A) has the plant listed for each crop needed. Column B has the total quantity needed to sell for that week. Column C has the week number (based on calendar year) that the plants are needed to sell (the finish week). Column D has the number of weeks that are required for the crop to finish (from transplant to sale), column E is the "harvest percentage" given in decimal equivalent. This gives the grower the number he/she needs to transplant (based on experience) in order to sell the desired quantity. Column F has the number of plants actually need to be planted to achieve the total needed and takes into consideration that you may harvest less than 100% of what you pot, so the formula for column F would be column B divided by harvest percentage. Column G may be the most important column on this spreadsheet because it tells you the week that you need to transplant the plants in order for them to finish in the week needed. Therefore, the formula for column G is the value of column C minus the value of column D. This spreadsheet also takes into consideration that a crop may finish faster when started later in the spring, as shown in the bottom line for each plant, where the weeks to finish is less. Other information you can include would be:

- Materials list — calculate the number of containers, flats, fertilizer, soil mix, etc. you will need for each crop.
- Space requirements — calculate the number of square feet you will need for each crop.

The Plug Tray Production spreadsheet would be a companion to the finished report because you could plan your spreadsheet to calculate when you need to stick your cuttings so that the plug trays will finish on time to be transplanted. The formulas in the cells on this spreadsheet tell what week to stick the cuttings, and the number of trays to stick depending on the size of your plug tray.

The spreadsheets could be printed and kept in a notebook so that you or the production manager knows what needs to be produced in any given week. Ultimately, using computers will force you to get your perennial production organized in a logical fashion, and that can only help as your business grows.