



By Erik Runkle



# Do it Yourself

Many articles often recommend that growers do their own smaller-scale tests for the specified procedures. Here are a few tips for conducting your own experiments.

**R**esearch can be as formal as experiments performed by scientists at private companies or universities, and as informal as comparisons of plant responses provided with different treatments at commercial greenhouses. Growers are often advised to perform small-scale trials when considering a different approach. And sometimes, they put a lot of effort into performing an on-site greenhouse experiment, only to find that the results lack clarity for various reasons. Here are some tips for performing your own on-site research with less frustration.

**Keep it simple.** A complex experiment requires more space, time and attention to be successful. Unless you have staff members who can devote a sufficient amount of time to an experiment, keep trials simple with few variables.

**Assign responsibility.** It is easy for everyone to get busy. As a result, experiments can become a low priority and be neglected. Clearly identify someone who will be responsible for the experiment, and emphasize the importance of completing the experiment.

mistakes is the lack of an untreated group of plants, known as a control. These plants serve as a comparison to treated plants. Without a control, it can be difficult or impossible to assess the treatment in question's effects of a particular treatment, such as a change in fertility, exposure to a new lighting regimen or application of a plant growth regulator.

**Keep all other conditions the same.** Plants are influenced by a variety of cultural and environmental factors. To help ensure that the plants' responses can be attributed to a particular treatment, keep all other growing conditions the same. It is best to grow treated plants among other, untreated plants so that they are exposed to the same conditions, such as environment, watering and fertility.

**Clearly label plants.** Use something to label plants, such as staked flags. Communicate to everyone that you are performing an experiment and that plants are not to be moved or sold before the experiment is completed.

**Pick your dates.** Once treatments are made or have begun, identify the date(s) that you want to observe treatment effects and collect data. For example, if you are experimenting with a new chemical, you may wish to observe plant responses one, two and three weeks after application.

**Collect data.** You have a purpose for each experiment, such as to change the pH, plant height, time to flower, etc. Identify the relevant factor(s) that you are trying to modify in the experiment. Then, on the identified dates, collect the appropriate data on the treated and control plants. It is best for the same person to collect the data, because different people can measure or interpret things differently. Once you've collected the data, enter it into a spreadsheet and calculate the mathematical average response of each treatment. Compare values with the control average to get an indication of the treatment's effects. [GPN](#)

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**Randomly select plants for the experiment.** In most commercial experiments, a small subset of plants is collected for treatments. Because plants are variable and growing conditions are not uniform, select individual plants randomly so that plants are representative of the population. Use at least 10 plants per treatment, and don't choose plants growing at the edges of a crop, which are exposed to "edge effects."

**Establish a control.** One of the most common