

GROWERTALKS

Features

1/1/2023

Conventional or Custom?

Mason Day



Regardless of what you're growing, some needs remain constant across all forms of production. Perhaps the chief example of this is the need for a proper plant nutrition plan and schedule. From petunias to strawberries to cannabis, all plants require nutrients to flourish.

In most cases, we supply those nutrients to the root zone through fertigation—fertilizing while watering. The concept itself is simple: Plants want to grow and need to use the elements found in fertilizers as building blocks to do so. However, beyond that, things can get

more than a little complicated.

Though petunias, strawberries and cannabis all require essential nutrients, their fertility requirements are going to be different. Each plant grows with a specific purpose and therefore will need different “building blocks” to produce high-quality results. Everyone knows plants need Nitrogen, Phosphorus and Potassium among other macro and micronutrients, but between species the needs of each nutrient can vary, and it's worth noting that those needs can change throughout the season and a plant's life cycle.

So how do you figure it all out without going back to school and getting a degree in chemistry? How do you unlock the full potential of your crops through proper nutrition? And how do you know which fertilizer to use and if you need to have something custom made for what you're doing?

Getting started

The first step in setting up any nutrition plan is to know what you're working with already. At this phase, you know what crops you're intending to grow, so by doing a little homework and using available cultural information and research, you'll be able to find proper nutrient target ranges. This will give you a goal to work towards as you build out your plan. If you can't find target ranges, there are resources available to you to help you out. Working with technical reps from breeding companies or technical teams at fertilizer manufacturers can go a long way. Chances are they have experience with the crops you're dealing with and can get you the data you need. Knowing where you need to be is half the battle; next, it's time to figure out how to get there.

To properly plan for what nutrients/fertilizers you should be incorporating throughout a crop's life cycle, you'll also

need to establish a baseline. Performing a water test is a crucial, and often overlooked, step of this process. Regardless of your water source, you need to find out what sorts of elements are already floating around in there and see where you're at from a pH and alkalinity standpoint. This is key to identifying what you need to add back in (and at what rates), as well as understanding how you'll need to modify your water inputs so that the nutrients you're adding can be properly absorbed (certain nutrients can only be absorbed at certain pH levels).

To really dial things in, it's recommended to test even further. You may find it beneficial to have an analysis done on the media you're using or plan to use. Depending on the mix, the environment can range from essentially inert to preloaded with a nutrient charge. Knowing what's already in your media will once again help you determine what you need to add back in to reach your desired nutrient targets.

If you're late to the game developing a proper nutrition plan, and you've already started growing and notice some challenges, you can even look to do plant tissue testing. This testing will show you exactly what your plant is absorbing and what it's lacking. Using established target ranges, you can use this tissue data to adjust your nutrition plan midseason.

Conventional or custom?

As you can see, there are many variables that play into a plant nutrition program and some of them can unexpectedly change throughout the growing season. All these factors will help determine what fertilizers you should incorporate in your growing schedule. The choice then becomes: Do you go with something "out-of-the-box" or is it necessary to investigate a custom formulation for what you're doing? Even though every operation is unique, we've found that it's rare that you would come across a situation where a custom fertilizer formulation is needed.

Some fertilizer companies have been around for decades and have seen thousands of unique situations, therefore, their product listing can be extensive. Chances are if you do the proper testing and work with technical support, you can find a product in their mix to get you where you need to be. Even if something isn't listed on a pricelist or a website, there might be an option in their historical database.

We find that the best way to customize your nutrition plan is not in constantly adjusting formulations, but rather finding a proper formula and adjusting the usage of that formula. Once in use we can see how plants are using the available nutrients and make changes over time to the rate of usage. When making a fertilizer formulation that works, it's not as simple as adding a little more of this element or that—you must make sure that everything in a blended bag works together, dissolves without forming a precipitate and is available for your plants to uptake. Trying to constantly customize a blended formula is too time consuming and costly to be effective for most operations, whereas customizing the rates of use and additives in your nutrition plan allows you to be flexible and change quickly even when you encounter unexpected circumstances.

So when is a custom blend necessary?

While we find that most of the time a custom blend isn't necessary for a successful nutrition plan, there are cases in which we recommend looking at something custom. These situations arise in rare cases where targets can't be met by tweaking conventional methods. This can be the case in instances where your water analysis presents something unique, or when you're producing a crop with limited use or history.

We've also seen growers try to make extreme adjustments to force crops to do extremely specific things against the norm of what they biologically want to do—sometimes in those cases there may be a need for something custom. Again, with the long history of fertigation, these situations come up less than you'd think, but aren't entirely out of the realm of possibilities.

Bottom line

Creating a nutrition plan and following the proper steps to understand what nutrients/fertilizers you need to use is crucial to the success of any growing season. Despite each location, crop, etc. facing unique challenges, you can often get where you want to be by using and customizing a schedule with off-the-shelf formulas. If you've exhausted options and your situation is reminiscent of an episode of "The Twilight Zone," maybe it's time to look into a custom formulation. **GT**

Mason Day is Director of Growth for JR Peters, Inc.