

“42” — Answers Are Meaningless Without the Right Question

I have a poster in my lab that pays homage to “The Hitchhiker’s Guide to the Galaxy.” The story’s premise revolves around an advanced civilization that built a large computer (Deep Thought) to find out the answer to the great question to life, the universe and everything. After millions of years, it came back with the answer of 42. They asked for the answer without knowing what the question was. So, the answer had no meaning.

Getting plants to grow and thrive under cultivation or in the landscape is a very complex system, and a lot of variables are at play. To navigate that system, we have to ask ourselves questions about how to provide the right temperature, light, fertilization, soil, etc., to produce crops. I work with the soil side of that equation.

At our lab, we deal with all kinds of substrates for applications, ranging from plugs to green roofs. Horticultural soils are different from those you might learn about in class. They are designed,

engineered and manufactured using combinations of inputs to recreate a root zone suitable for various applications. When designing a soil, we must determine what characteristics to look at and which will help in crop performance. The things we focus on, or the questions we ask are related to the substrate characteristics that will provide the best soil environment for the intended plants. The needs of an eight-week 4-inch annual are vastly different from a 5-gallon shrub. Even further removed are engineered soils for urban environments. I could test for the percent organic matter in all three soils. That is asking a question. Knowing that it only matters for the urban soil is knowing how to ask the right question.

In my technical role, similarly to growers and others in our field, I am asked to use my expertise to make recommendations and decisions that impact my business, as well as those of our customers. Based on how complex the system can be, I would prefer to make my recommendations after slow and careful trials and testing so I can take everything I can into account and control for variables. If I had my way, I would spend months if not years on a single question. In a business environment, we often don’t have the luxury of that much time. We need to use the data we have or can get quickly to make a swift decision. This can be challenging for someone like me who is prone to analysis paralysis. I have gotten better over the years as I have learned how to focus on the most impactful data. In coaching others on this dilemma, I have found a few key elements that help guide this process.

1. Learn how to reflect and truly ask “Why?”

This is key. Why are you doing this? Why does it matter? You need to boil it down to the true impact of what you

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are doing. Avoid jumping to conclusions and letting your own biases cloud the process. Take the time to reflect on the “why” as it will lead you to a purer question.

2. Be confident in what you know and open about what you don’t.

Work to build a solid technical foundation. You are not going to know everything, and that is OK. At first, I found it hard to admit I didn’t know something. What will they think? I am supposed to be an expert in this area so I should have an answer. You will be surprised when you are honest about your limitations and how people will respond. Certainly, don’t use that as a crutch and make a point to go find the answer.

3. Show your work and share your thought process.

My kids are doing Common Core math and must explain why $2+2 = 4$ in a bunch of different ways. While it may seem silly at this point, it is a skill I hope they will keep. I can’t count the number of times showing and explaining my work has helped me through things. It helps build trust that you know what you are talking about and can also save you from simple mistakes. Sometimes you make an assumption that is incorrect. If that is buried in some number, you have no way of identifying what went wrong or where to adjust your calculations or decision-making process. You may want to invest in new equipment, and today the answer is no because the ROI is not there. If you know how you arrived at that conclusion, when the situation changes, you can then justify the investment.

Life is full of decisions both large and small. We are essentially living and breathing algorithms. We take in a complex array of variables, apply a calculation or process to them and come up with some sort of answer. If you take the time to reflect on the why, acknowledge what you don’t know and work through the process, you will start asking better questions and be able to provide answers with more meaning. [gpn](#)



Kevin Donnelly is horticultural soil scientist with Midwest Trading Horticultural Supplies Inc. and a member of GPN’s 40 Under 40 Class of 2018. He can be reached at kdonnelly@midwest-trading.com.