GROWERTALKS

Features

4/28/2014

Strategic Planning: A Primer for Reducing Inputs

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“Regardless of where you are, you will be using energy for heat typically, supplemental lighting, cooling, ventilation, so energy tends to be one of the main input costs, “ says Brian Corr, head of Technical Services for Syngenta Flowers. “And most people have the same concern about labor, so anything that reduces costs in energy and labor are very helpful.”

To reduce their overall input effectively, a grower needs to take the time to review their past year’s performance (both productive and output).

Some questions to look at are:

- What were some of the challenges you experienced in the past growing season?
- Are there any processes/programs that are no longer effective?
- Where was labor expended? Could this time have been allocated more effectively?
- Which was the most efficient (time/cost) crop? Why?
- Which was the least efficient crop? What were the challenges of this crop? Could these challenges be prevented?

Is your greenhouse using energy efficiently?

“Similar to a house, you want your greenhouse to be as eco-energetic as possible by reducing any undesirable energy loss. This starts with a good preventive maintenance program for all your equipment, especially your heating equipment,” notes Pierre-Marc de Champlain, Project Coordinator for Berger. Pierre-Marc recommends conducting a heat survey of your greenhouse to help pinpoint potential structural problems. Simply taking the time to review equipment regularly could reduce overall energy costs.

In addition to equipment, growers should consider whether the actual greenhouse space is being used effectively. This is particularly critical when looking at both watering and light. Brian recommends choosing plants that are cost effective for the grower by choosing varieties that have a lower energy input. For example, Cartwheel Gerbera can be grown from seed rather than tissue culture, while the Gerbera Jaguar series can grow both quickly and closer together. Brian advises that growers should choose plants that are both bred to be naturally compact and have a demonstrated garden performance.

What's in your water?
Chance Finch, General Manager of Ball DPF, believes that the first step to reducing overall input is sanitizing your water.

"Without sanitizing the water, film and algae can buildup within the systems. Research has shown that when you allow that algae to grow, it also draws from the overall nutrition of the plant," Chance says. Improper sanitation processes cannot only cause your plants not to fully absorb the plant nutrients that you're feeding them, but could also inadvertently spread disease.

"Although recycling irrigation water is beneficial certainly for an environmental and economical perspective, it could perhaps contribute to plant disease problems in the greenhouses," says Mary Hausbeck, a researcher for Michigan State University. Mary's research has found that some Pythium species have a swimming spore that could essentially spread the disease from plant to plant through an unsanitized water source.

Reduce planting time
Automation is probably one of the quickest ways to reduce overall time involved in labor and planting. However, even with automated planting lines, which can reduce the time in sowing and transplanting, growers need to take the time to review the crops they would like to put on the line.

"One of the things that we've been putting a push on is having products that can be easily handled mechanically," Brian says. "Growers can decrease their labor costs for sowing and for transplanting labor by using mechanized transplanting."

Another technique to reducing plant time is to seek out container plants that'll quickly fill a pot. Brian emphasizes that when planting less plugs, it needs to be done effectively by choosing plants that will fill the pot quickly without increasing overall crop time. "The key is to reduce plants per pot with those that will not increase your crop time," he adds.

Bottoms up to plant health
To increase a plant's growing efficiency, you need to start from the bottom up. Growers should take a close look at the growing medium, ensuring that it's a porous material. This is essential, as plants absorb the majority of their nutrients through their root system. It's critical that the roots have access to the nutrients that they need and that their development is stimulated by providing a good, porous growing medium.

"Using lower quality materials can inevitably lead to growth inconsistencies and crop losses," Pierre-Marc says. "Eliminating problems is increasingly difficult when your starting materials are hindering your corrective actions."

Taking the time to choose the right fertilizer and use the correct amount will save both time and money.

"Apart from the strain on the environment, excessive fertilizer run-offs are like money down the drain," says Pierre-Marc. "You can easily collect your run-off water and measure the salinity to get an idea of how much fertilizer you could be saving."

Chance recommends that growers use a natural product to reduce the salt residue. Products like Nature's Source acts by feeding both the soil—as it's a natural carbon source—and the plant.

"We all know and believe that a healthier plant is more resistant to diseases and insects," Chance says. "We promote that in a sense to create a healthy plant, it needs to have a fertilizer that stays readily available to nutrition."

Develop an IPM plan

Implementing preventative strategies is the key to reducing a grower's overall input. These strategies can be as simple as regularly scouting for disease and insects to implementing a prevention program for common diseases like downy mildew.

"A good integrated pest management program can also help reduce your overall pest control costs," Pierre-Marc says. "Whether it (is) preventive weed management, sanitary practices, cleaning and disinfecting procedures, or scouting and decision-making tools, a well-implemented IPM program can nearly eliminate the need for chemical control."

Growers should take the time to review the preventative strategies currently available in the market. The energy expended to prevent a disease/illness is much less than that expended to react to one.

"Get out there ahead of the disease/insect; simply by being out there you can prevent the insect/disease from becoming a problem," says Brian. "Biological controls are also a great IPM solution. They are very good at keeping insect populations low and in control, but are not as effective if used after the insect problem is high."

PGRs

Everyone knows plant growth regulators are used to control the growth rate of the crops; however, not all growers understand how PGRS work before they apply them.

"There's nothing worse for the wallet than wrongly applying a PGR and ending up losing twice as much money as you would have saved," Pierre-Marc says. He recommends using other practices to reduce overall stretching of the plant. Plants will get a boost in the amount of light they receive by simply increasing the amount of space between plants. Pierre-Marc recommends basic maintenance, like regular cleaning of greenhouse coverings, to help ensure that the crops have access to the maximum amount of natural sun available.

Controlling day and night temperatures is another effective process that Pierre-Marc advises to help regulate the height of the crops.

"Stem elongation can be dictated by the difference in temperature between days and nights. If the day temperatures are hotter than the night, stretching can occur," Pierre-Marc says. "On the other hand, if a grower can keep his night temperatures higher, he can control the height of his crops by inhibiting their growth."

To reduce energy costs, growers can use the cool-morning pulse technique, which consists of reducing the

temperature of the greenhouse five to 10 degrees below nighttime values for two to three hours in the morning.

“Both these techniques are most effective during the more active growth periods and, therefore, do not need to be applied throughout the entire production process,” Pierre-Marc says. “However, it’s important to make sure these techniques are applicable to the specific crops you are growing before making any changes.”

When it comes to input costs, there’s not a one-fits-all solution. For a grower to effectively reduce their overall inputs, they should take the time to review where their potential losses are occurring, scout out for potential problems and implement an effective crop management strategy to reduce their overall input. **GT**

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