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86. Running right: maintaining and calibrating your fertilizer injector may be the best money you spend. Kelly, L. Greenhouse Management 32(5):52-54. 2012.



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Running right

Maintaining and calibrating your fertilizer injector may be the best money you spend

By Lela Kelly

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Each year I visit with hundreds of growers, and they frequently ask many basic questions. It does not matter how large or small the grower, often the issues are the same. What strikes me the most is how simple it is to choose the correct injector for your needs and then to keep it running and calibrated so that you can produce the very best plant material, and ultimately make more money.


Choose a fertilizer injection system

The first question to answer is, how are you going to fertilize — by hand, through your irrigation system, watering booms, mist system? What is your water flow rate in gallons per minute (GPMs)? Often, when I ask growers this question, few can

answer this, but it can be figured out quite easily.

For example, if you plan on running fertilizer through your drip lines, each line has a flow rate and can be calculated in GPM. If you contact your supplier, they know this information and can help you. Multiply the flow rate of each dripper with the total of all the drippers on that zone, and you have your flow rate. It is critical that you size your injector correctly to your maximum flow rate so that you do not damage the injector with too much flow.

What if you only want to apply fertilizer through one garden hose? A typical 5/8-inch garden hose with a water breaker runs 10-plus gallons per minute. A small, portable fertilizer injector will do the trick. Most are not expensive and can also handle



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Dosatron LII Bud D cart allows one hose fertilizer applications to be portable.

fungicides, insecticides, algacides, acids and more. Always check with the manufacturer to be sure their equipment can handle these chemicals without doing damage to the seals and internal parts. What a great way to spot-treat crops with different fertilizers and chemicals all in one piece of equipment.

Many growers now customize their fertilizer solutions to the different crops they grow. Instead of having a central injector putting out the same fertilizer solution throughout the greenhouse range, they have multiple injectors doing different solutions to each crop. This would also give you great flexibility when you want to inject pesticides and disinfecting agents.

Be aware of your pressure limitations on your fertilizer

injector as well. Some growers are lucky enough to have very high water pressures which can damage injector parts that have a maximum pressure allowance.

Also, be on the lookout for water hammer. If you have any solenoids controlling different zones in the greenhouse, when they close quickly, they can cause water hammer in the water line that can come back at four times the pressure and damage your fertilizer injector. A simple water hammer arrestor downstream of your injector can prevent this.

Filtering your incoming water to your injector is critical. Most water sources, (other than reverse osmosis), will need filtration due to sand or grit. This will not only harm your injector, it will do damage to mist heads, connectors, and spray nozzles. Installing a good filter upstream of your

injector will avoid any damage. Check the filter often to clean it out and prevent clogging.

Sometimes when I visit growers, they tell me they have filters and when I take a look at them I find that the inside cartridge has been removed. No one is sure why this happens, but I believe that the filter gets clogged and prevents any water from coming through. Having a spare cartridge on hand to swap out could avoid this problem.

Maintain your fertilizer injector

Would you run your car without changing the oil? Your answer is likely a, “No.” When I ask growers if they maintain their fertilizer injectors, the answer I get is, “If it’s not broken, I don’t touch it.” You cannot tell how much fertilizer you are injecting

by the color coming out of the end of the hose. Most growers are on a constant feed and the parts per million are very low. If you are not checking your injector for accuracy you could be under-injecting and not even realize it. Your injector should produce consistent results if you do the required maintenance and clean your injector about once a year. Contact your supplier or your injector manufacturer for their recommendations on maintenance. Maintenance can be as simple as replacing a worn seal kit, and you will be glad you did.

In order to calibrate your fertilizer and chemical injector, the use of an EC meter is recommended. There are a vast number of EC meters on the market in different price ranges. These meters should be used frequently

IRRIGATION & WATER

to be sure your injector is putting out the right amount of fertilizer. EC meters also need calibration, and it is critical that you follow manufacturer instructions so that you get the truest readings.

Remember, if you find your fertilizer

solution is not correct, it may be due to an error in the way the solution was mixed and not the fertilizer injector itself.

Go to experts for information

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This Cherry Creek Systems Double Rail Boom is using a Dosatron 20gpm injector to apply fungicide to the crop below.

can turn to in the industry to help you find the correct fertilizer injector for your operation. The first place to start is to speak to your horticultural distributor for information on injection systems. A good distributor will have years of knowledge based on his customers' experiences that can be invaluable to you. They can also give you direct phone numbers and websites that you can speak to the manufacturer directly, where all your questions can be answered. Never hesitate to contact a manufacturer directly. If they will not help you, go somewhere else. I am always amazed at how helpful and willing other growers are to each other in this industry. Growers have first-hand knowledge of what works and does not and are also a great resource for you. GM

Lela Kelly is vice president and owner of Dosatron International Inc., headquartered in Clearwater, Fla. As Dosatron's lead expert on horticulture, she has more than 35 years of experience in the industry. She started out as a grower in Long Island, N.Y.

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