

Welcome



Introductory Guide

To Fertigation And The SarGreen™ System

SarTec®

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Introduction

SarTec® Corporation is pleased to announce the introduction of the SarGreen™ Fertigation System. According to Larry McNeff, President and Co-Founder, "This system is the most advanced and reliable product yet to provide homeowners the opportunity to have a beautiful lawn while reducing the amount of fertilizer and water to maintain it. I hope you enjoy this new system as much as I have."

What is Fertigation?

Fertigation is the ultimate in combining soil fertility and irrigation in a single, automatic process. The benefits of fertigation have been well recognized in the irrigation industry and include more efficient use of fertilizer, less runoff and a more consistent fertilizer delivery. Fertigation is widely used in agriculture as well as on golf courses. SarTec® is now introducing fertigation for commercial and home use.

How Does It Work?

The SarGreen™ System begins by applying fertilizer on a square foot basis, not by water volume. Fertilizer is applied according to the area you are going to treat, not by the volume of water you will put on it. Application by surface area can only be done by a "smart system." SarGreen™ uses a computer to precisely control the amount of fertilizer applied to achieve the optimal level of fertilizer for each zone.

A benefit of fertigation is the ability to achieve the optimal amount of fertilizer in the grass or plant itself while actually lowering the amount of fertilizer that would typically be applied with a periodic granular fertilization program.

Benefits of Fertigation

When choosing a fertilizer program, there are three options available to homeowners. The first is the dry fertilizer that you pick up and spread around your yard using a manual or tractor-pulled broadcast spreader. The second is a liquid or a dry fertilizer program from one of the fertilizer services. The third is fertigation. Fertigation has been used for years in the golf and agricultural industries because of the economic savings. Now it is available for home use. Fertigation is:

- Easy and environmentally safe
- Economical for plant growth
- Efficient
- Helpful in reducing runoff

When you choose to fertigate with a SarGreen™ System, you can actually help the environment. SarGreen™ gives you complete control over the amount of fertilizer applied every time you water your yard. This type of application is called micro-dosing, applying very small amounts on a regular basis. By doing this, you only apply what the plant can use over a longer more consistent period of time. By using a fast release liquid fertilizer, the water goes into the root zone of the plant where it can be absorbed and used right away. This helps the environment by reducing runoff and leaching. The plants now have a stable environment and are not being subjected to periodic blasts of fertilizers, as they would be with a 3 to 4 times a year service. This results in a healthier lawn and a more efficient use of the applied fertilizer.



SarGreen™ Fertigation System

Drawing on over 20 years of micro-dosing technology, SarTec® created the most accurate and flexible fertigation system in the industry. Computer controlled accuracy, proven components and state of the art software all add up to a system that offers trouble free service and programming flexibility never before available.

The SarGreen™ system is a first of its kind, patent pending, automatic fertigation system designed for home use.

Each system is custom programmed by zone, giving the user complete control over the amount of fertilizer or other plant additives to be applied.

The system is comprised of only premium components for years of trouble free operation.

The system micro-doses fertilizer every time the irrigation system runs. Micro-dosing of fertilizer is the safe and economical way to a beautiful lawn or garden.

To order a SarGreen™ system, call 763-427-4631, all you need to do is fill out the order form indicating the zone sizes and the amount of fertilizer applied to each zone. We will custom program the system to your requirements and make changes if necessary.

Frequently Asked Questions About SarGreen™

- Q. How concentrated is the solution coming out of the sprinkler heads?
A. The solution will come out at about 1 part fertilizer to about 5000 parts water in a 20 gallon per minute system, which is equal to about 1 fluid ounce in 55 gallons.
- Q. How safe is the system?
A. The system is constructed with safety in mind. For instance, there is a flow switch built into the system to prevent addition of fertilizer if there is no water flow.
- Q. What if I want to water an extra cycle without putting on fertilizer?
A. The system has a suspend button. When you push the button, the green light on the face will turn off and the red light will illuminate. This tells you the system will not apply fertilizer. The system will automatically go back to normal mode after 12 hours.
- Q. Why do you call it a "smart system"?
A. The SarGreen™ System is programmable. The amount of fertilizer applied can be set by the homeowner at the time of installation. That amount can be different for each zone.
- Q. Will the fertilizer damage my irrigation system?
A. No, the fertilizer has been diluted so much that it will not harm the system. We program a flush time in each zone so a few minutes of clean water will run through the system before the zone shuts down. This will ensure that the sprinkler heads will not "gum up".
- Q. Can I apply a broadleaf weed killer through my SarGreen™ System?
A. While it is possible, we do not recommend it at this time, simply because there is no control of factors such as wind drift.



SarGro™ Plus Fertilizer

We recommend that SarGro™ Plus fertilizer be used with the SarGreen™ Fertigation System. SarGro™ Plus is:

- Safe (made with very nontoxic substances)
- Economical
- Fast acting
- Contains SarGro™ (See next page)

SarGro™ Plus fertilizer is a combination of a 18-0-3 fast release nitrogen source blended with potassium. It is the only fertilizer on the market that contains SarGro™, a natural yucca-based wetting agent for increased fertilizer performance. To protect the environment, SarGro™ Plus contains no phosphorus.

When SarGro™ Plus fertilizer is applied through the SarGreen™ Fertigation System, your lawn will have a lush green look. SarGro™ Plus may be diluted for any of your other fertilizer needs such as trees or gardens.

By incorporating SarGro™, our yucca-based wetting agent, with the SarGro™ Plus fertilizer, we have been able to greatly enhance the effectiveness of the fertilizer. Typically we find one is able to apply less fertilizer (usually about 50%) and still get the same benefit. This reduces cost and is better for the environment. SarGro™ enhances the plant's ability to take up the nutrients more effectively while making the plants more drought resistant and disease tolerant.

What is SarGro™?

SarGro™ is a natural extract of the yucca plant. Its natural ingredients help to optimize plant durability, increase water retention and help in the development of root systems. Plants increase their overall tolerance to such stresses as disease, heat, standing water and physical damage. SarGro™ is:

- Extremely effective in controlling dry spots on lawns
- An effective biostimulant that helps promote root growth and helps plants withstand harsh environments
- Completely safe to people and pets
- Used by golf courses to maintain fairways and greens



Picture of a Yucca Plant in a Southwestern United States Desert



Schematic Diagram of the SarGreen™ Fertiligation System (Patent Pending)



Denotes electrical connection.

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The SarGreen™ package includes a computer control unit, an SarGro™ Plus fertilizer pump, an injector, a water flow switch and a reduced pressure zone (RPZ) valve. The system has the following features:

- 1) Automatically fertilizes lawns through any irrigation system.
- 2) Reduce pressure zone assures zero-contamination of incoming water supply.
- 3) Accurate computer controlled additive pump assures consistent and constant supply of fertilizer to the irrigation system.
- 4) PLC controller can be used for a flexible fertilizer program that is user defined.
- 5) System can be added to any irrigation system, regardless of size or number of zones.

Technical Specifications of the SarGreen™ System

Power Supply for Computer Controller:

| | |
|---------|---|
| Input | 100 -240VAC, 50 - 60Hz, 0.6 amps, 45-65va |
| Output | 24VDC, 0.83 amps/20watt |
| Ratings | UL and CE rated |

Computer Controller:

| | |
|-------------------------|-----------------|
| PLC input voltage | 24 VDC |
| Zone input voltage | 24 VAC |
| Pump output low voltage | pulse 6-27VDC |
| Ratings | UL and CE rated |

Fertilizer Pump:

| | |
|-----------------|-----------------------|
| Input voltage | 120 VAC ave. 1.0 amps |
| Pump flow range | 3-540 GPD |
| Ratings | ETL and CE approval |

Backflow Protection:

Watts 009 QT reduced pressure zone backflow stop



Getting Started

The SarGreen™ System has been specially designed and built using top quality components. The SarGreen™ System is completely automatic. SarGreen™ has been designed to be used with the SarGro™ Plus family of liquid fertilizers that are specially formulated to help reduce the amount of fertilizers applied to your lawn. SarGro™ Plus fertilizers are the only fertilizers on the market to include SarGro™, a saponin based wetting agent, that will help your lawn absorb nutrients much more efficiently.

The SarGreen™ Fertigation System is installed in three easy steps 1) the injector assembly is installed on your main water line before the zone control solenoids. 2) The pump enclosure portion is mounted as close as practical to the injection assembly with the output from the chemical pump going into the injector. 3) The computer controller is mounted next to the irrigation system controller. The zone outputs from the irrigation controller are then connected to the input on the control computer. The pump output wires are run out to the chemical pump with one side of the wire being wired in series through the flow switch on the injector assembly. That is all there is to it!

The SarGreen™ System is a “smart” system that is zone specific. The program is based on zone square footage, zone watering time, watering cycles per year and the target amount of nitrogen to be applied on a yearly basis. The SarGreen™ System is designed to apply fertilizer only in the first 75% of your zone run time, ensuring time to rinse the irrigation system with clean water, as well as allowing the fertilizer to reach the roots and not be left on the surface. This program is stored at SarTec® for future reference or modification.

Operation of the SarGreen™ System is fully automatic and requires no user input after installation.

If your zone times change or you want to change the amount of fertilizer applied, you may call us at 800-472-7832 or 763-427-4631 to make arrangements to have your computer reprogrammed. Before you call please have your system serial number and location available.

What Are You Doing This Weekend?

Let SarGreen™ Take Care of Your Lawn

- **Computer Controlled**
- **The Safe and Economical Way to a Beautiful Lawn**



SarGreen™ System Order Form

Customer Name and Address

Distributor Name And Address

| |
|-----------------------|
| Attention_____ |
| Address:_____ |
| City, State, Zip_____ |
| Phone:_____ |

| |
|------------------------|
| Company name:_____ |
| Attention:_____ |
| Address:_____ |
| City, State, Zip:_____ |
| Phone:_____ |

Watering season per year in weeks_____ Watering days per week_____

| Zone Number | Zone Size sq.ft. | Nitrogen amount 1000 sq.ft./Year |
|-------------|------------------|----------------------------------|
| 1 | | |
| 2 | | |
| 3 | | |
| 4 | | |
| 5 | | |
| 6 | | |
| 7 | | |
| 8 | | |
| 9 | | |
| 10 | | |

This form may be faxed to 763-421-2319 or it mailed to:
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SarTec® is a leader in the use of micro-dosing equipment in a number of key industries such as animal health and irrigation.

SarTec® has developed proprietary products formulated with yucca extracts that act as natural wetting agents used in a number of fertigation applications. Branded products include SarGreen™, SarGro™ and SarGro™ Plus.

SarTec® has developed proprietary and patent pending technology for the application of liquid and dry yucca based products for the animal health and feed mill operations. Branded products include SarTemp®, SarStart® and Sar-Kleer™.

SarTec® is a privately owned company located in Anoka, Minnesota and has branch offices in Nebraska, Texas, Kansas and Colorado.





SarGreen™ is the Most Advanced Fertigation System Available on the Market Today, Providing Beautiful Lawns, Automatically.



- SarTec® is a leader in the use of micro additive equipment in a number of key industries.
- SarTec® has proprietary and patent pending technology for the accurate addition of lawn care products.
- SarTec® is a recognized leader in all-natural saponin-based technologies.



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