



# **FIS** **OUTDOOR**

## PRODUCT CATALOG



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## ESTIMATING SERVICES

Allow our experienced estimators to do an irrigation takeoff on your commercial projects!

## SOCIAL MEDIA

Keep up to date on upcoming events and industry news on Facebook, Twitter & Instagram!



## EDUCATIONAL CLASSES

Contact your local FIS representative to see what classes are coming up in your area! Educational Courses like:

- Irrigation
- Fertilizer
- Chemicals
- Low-Voltage Lighting
- Pumps
- Drainage
- and More!

## ONLINE ACCOUNT ACCESS

Manage Your Account Online

- Pay your bill
- Check statements
- View and print scanned picking tickets
- See who signed for tickets



## MOBILE APPS

Download our FIS Outdoor apps for Android & iPhone!



## MARKETING SERVICES

Need a local, reliable marketing and printing source? We can provide you with a large menu of services to choose from.

VISIT US ONLINE AT [FISOUTDOOR.COM](http://FISOUTDOOR.COM)







## TURF & LANDSCAPE FERTILIZER

- Turf and Ornamental
- Nursery and Agricultural
- Granular or Liquid
- Organic Available
- Pelletized
- Chelated Iron

**CUSTOM BLENDS!**



## SEED

- Turf
- Golf

## GOLF COURSE FERTILIZER

- Available in Greens Grade (micro-pill)
- Standard Grade
- Killebrew services are available in many areas.



## CHEMICALS

- Herbicides
- Fungicides
- Insecticides

**CHEMICAL CROSS REFERENCE  
CHART ON PAGE 35**



# FIS LIQUID FERTILIZERS

BLENDINGS ARE AVAILABLE IN 2.5G, 30G, 50G, 250G



**4%FE, 1%MG, 3.5%S, .02%B, .25CU, 1%MN, .005%MO, .6%ZN** (FER-FISMICROMIX-2.5GAL)

SUPRA-T&O Micros for Turf is a liquid formulation of essential plant nutrients and micronutrients that aids in the prevention and correction of micronutrient deficiencies, especially in higher pH soils where trace elements often become unavailable to the plant.



**12-0-0-6FE-2MN** (FER-12-0-0-6%FE2%MN-2.5G)

In order to improve the appearance of turf, SUPRA-T&O 62 Green is used as a supplement to fertilizer programs by incorporating a stabilized source of nitrogen and a more available form of iron. SUPRA-T&O 62 Green can be used to help promote a darker green color in plants.



**18-3-6-.1FE** (FER-18-3-6KICKER-2.5G)

SUPRA-T&O T&O Kicker is a highly effective foliar nitrogen, phosphorous, potassium and iron formulation. SUPRA-T&O T&O Kicker is designed to provide optimum color and plant health when used in a light-frequent feeding program on turf and ornamental plants.



**15-0-0-6FE** (FER-15-0-0-6%FE-2.5G)

SUPRA-T&O Six Iron is an excellent way to quickly correct iron deficiencies in turf and ornamental plants. SUPRA-T&O Six Iron is formulated to be safe and compatible with most amine based herbicides.



**15-0-12-8S, 70%CRN** (FER-15-0-12-8S-2.5G)

SUPRA-T&O 15-0-12 is a highly effective foliar nitrogen, potassium and sulfur formulation. SUPRA-T&O 15-0-12 is designed to provide optimum color and plant health when used in a light-frequent feeding program on turf and ornamental plants.





### **22-0-0-.2FE-.2MN, 60%CRN** (FER-22-0-0-.2FE.2MN-2.5G)

FIS Special 22-0-0 is a liquid fertilizer designed for application on turf and other crops requiring supplemental N during the growing season. A portion of the nitrogen is in a control release form providing more efficient nitrogen utilization. FIS Special 22-0-0 is recommended as a carrier for pesticides. The control release nitrogen prolongs the wetting of leaf surfaces for greater penetration and less loss from crystallization on leaf surfaces as with liquid urea products.



### **28-0-0 70%CRN** (FER-28-0-0-2.5G)

SUPRA-POLY 28-0-0 is a liquid foliar fertilizer designed for application on cotton and other crops requiring supplemental N during the growing season. A portion of the nitrogen is in a control release form providing more efficient nitrogen utilization. SUPRA-POLY 28-0-0 is recommended as a carrier for pesticides. The control release nitrogen prolongs the wetting of leaf surfaces for greater penetration and less loss from crystallization on leaf surfaces as with liquid urea products.



### **0-0-29** (FER-0-0-29-2.5GAL)

Supra-Phite 0-0-29 is a concentrated foliar nutrient solution and has fungicidal properties, which helps the plant build a resistance to disease.. These nutrients in their highly soluble form are beneficial to plant growth, crop development, crop quality and yield when applied as a properly timed foliar spray. Supra-Phite 0-0-29 is recommended for foliar application only. Incorrect soil applications may cause crop injury. Follow manufacturer's recommended directions for use. Applications of Supra-Phite 0-0-29 should be part of a fertility program based upon soil and tissue testing data. Supra-Phite 0-0-29 is intended to be used as a supplemental foliar treatment.



### **18-3-6-.5S-.025B-.025CU-.2FE-.1MN-.025ZN + BIOSTIMULANTS** (FER-18-3-6ULTRA-2.5G)

Ultra™ Nutritional compounds are crop specific compounds designed for foliar feeding as a complement to soil fertilization. Use and application should be programmed for inclusion in the spray program for disease, insect and/or weed control. Ultra™ Nutritional compounds contain high levels of premium quality, readily available primary, secondary and micronutrients. These nutrients are selected for use based on their rapid and efficient foliar absorption characteristics. Fulvic Acid is used as a complexing agent for micronutrients and as an agent for the utilization and translocation of phosphates. A proprietary blend of organic acids and amino acids is incorporated as the source of biostimulants.



### **1%MG, .02%B, .25%CU, 4%FE, 1%MN, .6%ZN .0005%MO + AMINOS & BIOSTIMULANTS** (FER-MICRAMIN-2.5GAL)

Micramin® is a concentrated aqueous solution of Magnesium Boron, Copper, Iron, Manganese, Zinc, 18 Amino Acids, Fulvic Acid and Kelp Extract. It is designed for addition to fluid fertilizers and will provide a highly soluble fertilizer that can be applied via aerial and ground applications. Micramin® is very effective as a foliar spray to prevent and correct Micronutrient deficiencies on Turf and Ornamentals. It is IMPORTANT that a non-ionic surfactant be added to aid in surface coverage which helps leaf absorption.





## MULCH

- Pine Bark
  - Cypress
  - Eucalyptus
  - Colored
  - Melaleuca
  - Certified Playground
  - Rubber
- 

ASK FOR YOUR LOW PRICE ON A BAG, PALLET, OR TRUCKLOAD



## MAINTENANCE PRODUCTS

- Round Up
- Rust Remover
- Insect Killer
- Mulch Stabilizer
- Mulch Colorant

MULCH AND PINE STRAW CALCULATOR ON PAGE 38



## PINE STRAW

- Bales
- Truck Load
- Palletized Rolls



## TOOLS

- Irrigation Tools
- Rakes
- Loppers
- Pruners
- Shovels



## LANDSCAPE ACCESSORIES

- Tree Staking Kits
- Arbor Strap
- Palm Battens
- Wood 2x4's
- Lodge Poles
- Landscape Fabric
- Edging
- Silt Fence



## CONSUMABLE PRODUCTS

- Trimmer Line
- Edger Blades
- 2 Cycle Oil
- Spark Plugs
- Bump Heads



## MOWER BLADES

- Most Makes and Models

HUGE INVENTORY OF MOWER BLADES! ASK US TO PROVIDE YOU WITH A VERY COMPETITIVE QUOTE!



## ACCESSORIES

- Safety Glasses
- Ear Plugs
- Primer Bulbs
- Gloves
- Trash Bags
- Wasp, Hornet & Ant Spray





## DRAINAGE PIPE

Ask us about our drainage solutions!

ASK US ABOUT OUR  
DRAINAGE SOLUTIONS!



## BOXES, FITTINGS & ACCESSORIES



## EZFLOW DRAIN PIPE

- No gravel needed
- Decreases labor by up to 50%
- 7", 10", 15" Diameter
- Aggregate is manufactured from 100% recycled plastic



## PUMP PRODUCTS

- Submersible
- Centrifugal Pump
- Jet
- Booster
- Tanks

**PSR, MAG STARTERS, PRESSURE SWITCHES, CONTROL PANELS & MANY MORE WELL PRODUCTS**



## ACCESSORIES

- Well Seals
- Well Casing
- Check Valves
- Pump Wire

## BACK FLOW DEVICES

- PVB: Pressure Vacuum Breaker
- DCV: Double Check Valve
- RPZ: Reduced Pressure Zone



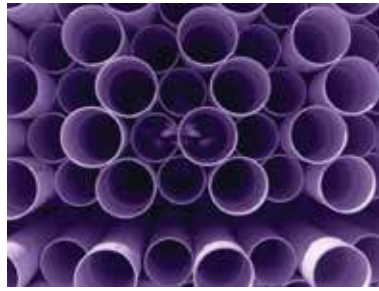
## CUSTOM BUILT VFD PUMP STATIONS

- Watertronics
- Munro
- Naples Electric
- Rainbird



## PIPE

- PVC
- Poly
- HDPE



## FITTINGS

- SCH 40
- SCH 80
- HDPE



## WIRE

- All Gauges
- All Configurations



## ACCESSORIES

- PVC Cement
- Wire Nuts
- Cutters
- Valve Boxes
- Marker Flags
- 1,000's of Items



WIRE LOCATIONS RENTALS AVAILABLE

# ALLIANCE

## OUTDOOR LIGHTING

- Professional & commercial grade
- Lifetime warranty on fixtures and XF Series Transformers
- LED or Halogen pre-installed lamps
- Solid brass or copper fixtures
- Dual wire leads: Pre-Installed, lower wire cost per job, less labor to install

## TRANSFORMERS & ACCESSORIES

- Wire & wire connectors
- Photocell
- Timers
- Halogen & LED lamps



## SPECIALTY LIGHTS

- Down Lights
- Tiki
- Step
- Underwater
- Flood
- Paver
- Fixture Risers



## PATH & AREA LIGHTS

- Build your own: choose stem height and top



## BULLET LIGHTS

- Brass
- Copper



## IN-GROUND LIGHTS



NEW

## IT TRANSFORMER

- Control from smart phone
- Bluetooth technology
- Astronomical timer





## UNIQUE

- Professional Grade
- Multi-Matic Transformers
- 12 & 24 volt



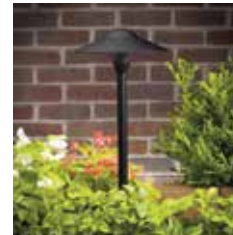
## FX LUMINAIRE

- Specification Grade
- Functional, Durable and Serviceable
- Hunter PCP points with FX purchases
- Luxor transformer offers dimming and zoning

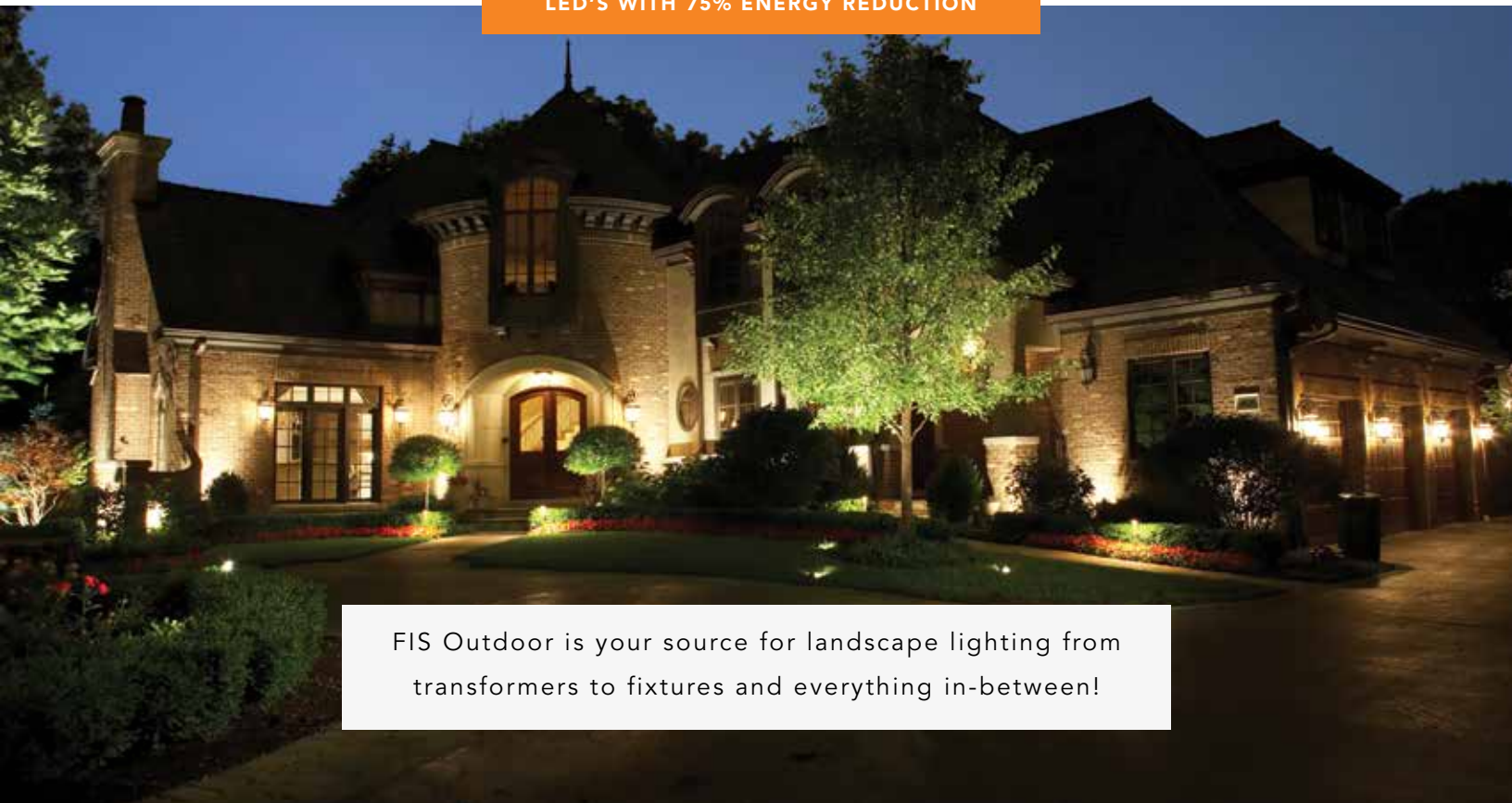


## KICHLER

- The Premium Choice in Landscape Lighting



LED'S WITH 75% ENERGY REDUCTION



FIS Outdoor is your source for landscape lighting from transformers to fixtures and everything in-between!

NEW

## HYDRAWISE CONTROLLER

- Residential Wi-Fi Enabled
- Irrigation Controller With Hydrowise Web-Based Software



## VALVES

- ICV Series
- IBV Series
- PGV Series
- Quick Coupling Valves & Keys



## CONTROLLERS

- XC Series
- Pro-C Series
- ACC Series
- Node Series
- Central Control + IMMS
- Roam Remotes
- Rain Sensors



## SPRAYS

- Pro Spray Series
- PS Series
- Nozzles



## ROTORS

- MP Rotators
- PGP Series
- I-Series: I-20, I-25, I-35, I-40, I-90







## NEW ESP-TM2

SUITABLE FOR INDOOR OR OUTDOOR  
FACTORY INSTALLED 6' OUTDOOR CABLE  
SIMPLE ONE-TOUCH MANUAL WATERING  
4,6,8 & 12 STATION MODELS

## CONTROLLERS

- ESP Series
- ESP-LXD/ESP-LXME
- Rain Sensors
- Central Control: Maxicom
- Central Control: IQ
- TBOS: Battery
- LMR: Remote



MAXICOM<sup>2</sup> AUTHORIZED DEALER



## VALVES & BOXES

- DV & HV Series
- PGA Series
- PEB & PESB Series
- Quick Coupling Valves & Keys
- Valve Boxes



## SPRAYS & NOZZLES

- 1800 Series
- MPR Nozzles
- Rotary Nozzles
- RD1800 Series



## ROTORS

- 3500 Series
- 5000/5000 Plus Series
- 5500 Series
- Falcon 6500 Series
- 8000 Series

## TUBING

- XF Drip Line
- Fittings
- Drip Zone Control Kits
- Emitters



## PRECISION PRODUCTS

The most complete and efficient  
spray nozzle line available

**Irritrol**

**TORO**



## CONTROLLERS AND VALVES

- DDCWP
- TPV Series
- P220 Series
- Rain Sensors
- Evolution
- Climate Logic
- 205 Series
- 2400 Series
- 200B Series
- Kwik Dial Series
- Rain Dial Series
- TDC Series
- Custom Command



## SPRAYS AND ROTORS

- 570 Series
- Precision Nozzles
- I-Pro Series
- Rotary Nozzles
- T5P Series Rotors
- 550R Series



**T5P & 550R 5" POP UP ROTOR!**



# AGRICULTURAL AND LOW VOLUME PRODUCTS



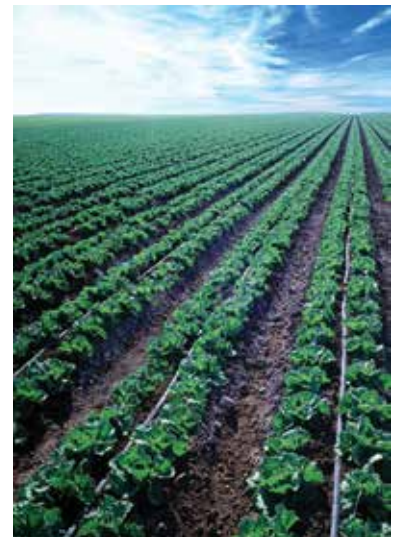
- Drip Line and Drip Tape
- Fittings
- Emitters, Jets, Micro Sprays
- Filtration



- Stakes
- Micro Spray Jets
- Emitters
- Tubing



- Wobblers
- Mistors & Micro-Sprinklers
- Sprayers
- Overhead Drain Stoppers
- Pressure Regulators



## GSP PLANS

- Improved course playability
- Get expert advice on grounding requirements and electrical component protection
- Minimize system downtime
- Write more accurate and site specific programs using map-based programming



### EAGLE SERIES ROTORS

- 700/751 Series
- 900/950 Series
- 500/550



**FULL & PART CIRCLE IN ONE**

### CONTROLLERS

- PAR+ES
- PAR+ES Decoder
- ESC1



#### PAR+ES RETRO KIT

HAVE A TIGHT BUDGET?  
UPGRADE YOUR EXISTING  
CONTROLLER WITH AN  
UPGRADE KIT! COMPATIBLE  
WITH MOST CONTROLLER  
BRANDS.

### INTEGRATED CONTROLLER SYSTEM

Connects central computer directly to the rotor or valve.



### RAIN BIRD PUMP STATIONS

- Custom Built VFD Pump Stations
- Smart Pump Software
- GE & Mitsubishi Motors



### CENTRAL CONTROL

- Cirrus
- Nimbus II
- Stratus II
- Stratus LT
- Freedom
- Smart Pump
- MI: Mobile Controller
- ISS: Integrated Sensor System





## GOLF CONTROLLER REPLACEMENT PARTS

- Station Output Boards
- Main Boards
- Faceplates
- Antennas
- Grounding parts
- Multiple brands
- Name brand board repair
- Fast Fed EX Delivery



## HDPE PIPE

- 1 ½" to 20" sizes DR'S from 11-17
- HDPE Fittings
- Lasco Saddles
- AVK, Flomatic and Nibco Valves



## ACCESSORIES

- Stakes
- Rope
- Paint
- Hose Nozzles
- Swing Joints
- Wire
- Ductile Iron Fittings
- Knock-on Fittings
- Communication Cable
- Golf Service Tools



## SEED, FERTILIZER, CHEMICALS, PINE STRAW



# HERBICIDE SOLUTIONS FOR COMMON WEEDS

## ST. AUGUSTINE



### ANNUAL BLUEGRASS (POA ANNUA)

Annual bluegrass grows to a height of 6 to 8 inches when left unmowed. It has light green, flattened stems that are bent at the base and often rooted at the lower stem joint. Leaf blades are often crinkled part way down and vary from 1 to 3 inches in length with typical Poa, boat-shaped leaf tips. The inflorescence (flowering structure) is a terminal panicle that varies from 1 to 4 inches in length. Seed head initiation can start as soon as plants are 6 weeks old in early fall and continue until early summer, but most seed heads are formed in spring. The annual form of annual bluegrass is a rapid and prolific seeder.



### SIMAZINE

PART#  
CHE-SIMAZINE  
4L-2.5GAL

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ



### BAHIAGRASS

Bahiagrass forms tall, unsightly seed heads throughout the spring, summer, and fall months that many find objectionable. This necessitates regular mowing to keep the stalks from becoming too tall. The seed stems are tough and can wear out mower blades, requiring them to be sharpened frequently. High pH tends to cause yellowing of leaf tissue due to iron deficiency. Bahiagrass grows in an open growth habit, which can result in weed encroachment into sparse areas. It has a coarse leaf texture and provides less cushioning for recreational activities than some other species. Bahiagrass flourishes in full sun.



### ROMETSOL

PART#  
CHE-ROMETSOL  
2OZ

### FIS SOLUTION

OR USE **FAHRENHEIT**  
PART# CHE-FAHRENHEIT-6OZ



### DOLLARWEEDS, PENNYWORT

Dollarweed (*Hydrocotyle* spp.), also known as pennywort, is a warm-season perennial weed. It gets the common name, dollarweed, from its silver-dollar-shaped leaves. The leaves of dollarweed are round, bright green, fleshy and look like miniature lily pads measuring 1-2" in diameter with a scalloped edge. It has a low-growing habit that spreads by seeds, rhizomes and tubers. Dollarweed is often confused with dichondra. One way to distinguish the two is by looking at the placement of the leaf stem. Dollarweed has a stem located in the center of the leaf while dichondra's stem is located at the edge.



### ROMETSOL

PART#  
CHE-ROMETSOL  
2OZ

### FIS SOLUTION

OR USE **FAHRENHEIT**  
PART# CHE-FAHRENHEIT-6OZ



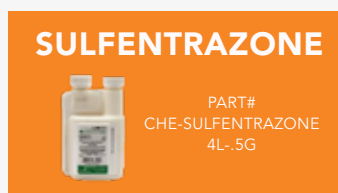


## FIS SOLUTION

OR USE **BLINDSIDE**  
PART# CHE-BLINDSIDE-1/2LB

## DOVEWEED

Doveweed is a summer annual weed that usually germinates later in the growing season than most other summer annual weeds and becomes a problem late in the summer. Doveweed closely resembles a grass. Upon closer inspection, you will find that doveweed has stems that root at the nodes and purple flowers that appear on short stalks in clusters. The leaves are linear, and approximately 3/4 to 4 inches long. Leaf sheaths have soft hairs on the upper margins. Fruits are classified as capsules and are only 0.12 to 0.2 inches (3 to 5 mm) wide.



## FIS SOLUTION

OR USE **ROMETSOL**  
PART# CHE-ROMETSOL-2OZ

## GOOSEGRASS

Goosegrass forms a pale green mat-like clump with flattened stems that grows in a low rosette. Stems are somewhat fleshy at the base. The mature plant can spread to about 2-1/2 feet (80 cm) wide. The leaf blades are nearly hairless, except for long hairs on the blade bases, collars, and/or upper sheath margins. Leaves are keeled along the midvein near the base of the blade. Sheaths are open, flattened, keeled, and are whitish at the base around the collar.

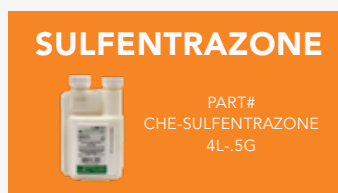


## FIS SOLUTION

OR USE **FAHRENHEIT**  
PART# CHE-FAHRENHEIT-6OZ

## KNOTWEED, PROSTRATE

Stems are stout, cane-like, and reddish-brown. The plants die back at the end of the growing season but their old reddish-brown canes often persist. The stem nodes are swollen and surrounded by thin papery sheaths. Leaves are either heartshaped or spade-shaped or somewhere in between. The flowers are small, creamy white to greenish white, and grow in showy plume-like, branched clusters from leaf axils near the ends of the stems. The fruit is 3-sided, black and shiny.



## FIS SOLUTION

OR USE **LIME**  
PART# FER-LIME-50#\*

\*LIME TAKES MONTHS TO ADJUST PH OF SOIL

## SANDBUR (SANDSPUR)

Field sandbur (grassbur) is a summer annual grassy weed that can be found in home lawns, sports fields, parks and along roadsides. This weed is especially adapted to dry, sandy soils but can be found growing in other types of soils as well. The big problem with this weed is the sharp, spiny burs that are part of the inflorescence. These burs can be painful and are difficult to remove from clothing material. Field sandburs (grassburs) generally start germinating in late spring and will continue to germinate until late summer or early fall months. This weed will continue to grow until the first hard frost or freeze occurs in the fall.



# HERBICIDE SOLUTIONS FOR COMMON WEEDS

## FESCUE



### ANNUAL BLUEGRASS (POA ANNUA)

Annual bluegrass grows to a height of 6 to 8 inches when left unmowed. It has light green, flattened stems that are bent at the base and often rooted at the lower stem joint. Leaf blades are often crinkled part way down and vary from 1 to 3 inches in length with typical Poa, boat-shaped leaf tips. The inflorescence (flowering structure) is a terminal panicle that varies from 1 to 4 inches in length. Seed head initiation can start as soon as plants are 6 weeks old in early fall and continue until early summer, but most seed heads are formed in spring. The annual form of annual bluegrass is a rapid and prolific seeder.



### PROGRASS

PART#  
CHE-PROGRASS-S  
1G

### FIS SOLUTION

OR USE **PRODIAMINE**  
PART# CHE-PRODIAMINE65WDG-#5



### CHICKWEED

Chickweed (*Stellaria media*) is a widespread, hardy annual often found in moist, fertile garden soil in the South East. In mild winter climates it begins blooming before winter ends. Edible but not very tasty, chickweed plants form dense 3-inch-tall mats of foliage studded with starry white flowers



### TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **2-D**  
PART# CHE-2D-1G



### DANDELION

Dandelion is a European native perennial plant whose low spreading, deeply notched leaves form a rosette pattern as they emerge from a weak central tap root. It closely resembles endive in form and in cultural requirements. The hollow flower stalks form a single compound flower of many golden colored florets. Like chicory, varieties differ in leaf shape, ranging from very curly leaved to broad leaved.



### TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **2-D**  
PART# CHE-2D-1G







**FIS SOLUTION**

OR USE **SIMAZINE**  
PART# CHE-SIMAZINE4L-2.5GAL

## SPURGES

Spotted spurge is a low-growing summer annual broadleaf plant that often forms a dense mat. Spotted spurge generally has prostrate stems that can grow up to about 20 inches (50 cm) in length, but stems can grow upward when competing for light with other plants. Branches alternate along the stem. New leaves are typically hairy, especially lower leaf surfaces. Leaves are oblong to egg shaped, about 1/6 to 2/3 of an inch (4–17 mm) long, often marked with a characteristic dark, reddish spot found midway down the center of the leaf vein, and sit atop short stalks.



**FIS SOLUTION**

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ

## WHITE CLOVER

White clover is a perennial with creeping stems rooting at some nodes. Leaves have three leaflets with a long erect petiole that is surrounded at the base by a membranous sheath. The flowering heads are borne on long stalks from the stems and usually rise above the leaves. The flower cluster may be 1/2 to 1 1/2 inches in diameter. The petals are white.



**FIS SOLUTION**

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ

## YELLOW NUTSEGE

Although nutsedges resemble grasses and often are referred to as "nutgrass," they aren't grasses but are true sedges. Their leaves are thicker and stiffer than most grasses and are arranged in sets of three at their base; grass leaves grow across from each other in sets of two. Nutsedge stems are solid, and in cross section they are triangular; grass stems are hollow and round, and in cross section they are almost flat or oval. Nutsedge has three long, leaflike bracts at the base of each flower head. Yellow nutsedge has light brown flowers and seeds, while purple nutsedge flowers have a reddish tinge and the seeds are dark brown/ black.





## HENBIT

Henbit (*Lamium amplexicaule*) is a sparsely hairy winter annual with greenish to purplish, tender, square stems. Its opposite leaves are broadly egg shaped with bluntly toothed margins and prominent veins on the underside. Upper leaves are sessile (directly attached to the stem) and lower leaves have petioles. It has a fibrous root system and can grow to a height of 16 inches. Henbit's distinctive flowers are reddish purple in color with darker coloring in spots on lower petals. It flowers in the spring with the flowers arranged in whorls in the upper leaves.



## SPURGES

Spotted spurge is a low-growing summer annual broadleaf plant that often forms a dense mat. Spotted spurge generally has prostrate stems that can grow up to about 20 inches (50 cm) in length, but stems can grow upward when competing for light with other plants. Branches alternate along the stem. New leaves are typically hairy, especially lower leaf surfaces. Leaves are oblong to egg shaped, about 1/6 to 2/3 of an inch (4–17 mm) long, often marked with a characteristic dark, reddish spot found midway down the center of the leaf vein, and sit atop short stalks.



### TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **2-D**  
PART# CHE-2D-1G



### TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **Q4**  
PART# CHE-Q4PLUS-1GAL

## HERBICIDE SOLUTIONS FOR COMMON WEEDS

### BERMUDA



## ANNUAL BLUEGRASS (POA ANNUA)

Annual bluegrass grows to a height of 6 to 8 inches when left unmowed. It has light green, flattened stems that are bent at the base and often rooted at the lower stem joint. Leaf blades are often crinkled part way down and vary from 1 to 3 inches in length with typical Poa, boat-shaped leaf tips. The inflorescence (flowering structure) is a terminal panicle that varies from 1 to 4 inches in length. Seed head initiation can start as soon as plants are 6 weeks old in early fall and continue until early summer, but most seed heads are formed in spring. The annual form of annual bluegrass is a rapid and prolific seeder.



### CERTAINTY

PART#  
CHE-CERTAINTY  
1.25OZ

### FIS SOLUTION

OR USE **SIMAZINE**  
PART# CHE-SIMAZINE4L-2.5GAL





## QUINCLORAC

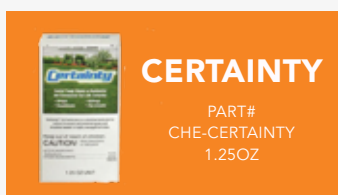
PART#  
CHE-QUINCLO-  
RAC-75DF-1#

### FIS SOLUTION

OR USE **SOLITAIRE**  
PART# CHE-SOLITAIRE-1#

## CRABGRASS

Crabgrass (*Digitaria* Genus) is a common, slender annual and perennial weed. *Digitus* is the Latin word for "finger", and they are distinguished by the long, finger-like inflorescences they produce. Typically, it has spreading stems with wide, flat leaf blades that lie on the ground with the tips ascending. The inflorescences is a panicle in which the spike-like branches are arranged in a digitate fashion. The spikelets are arranged in two rows on an angled or winged rachis. Each spikelet has two florets, only one of which is fertile. The first bracts at the base of the spikelets are either very minute or absent. Crabgrass has a long germination period, and if conditions are right, it can germinate throughout the growing season.



## CERTAINTY

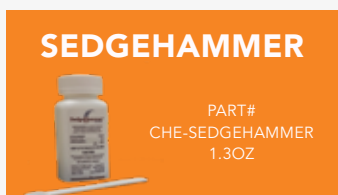
PART#  
CHE-CERTAINTY  
1.25OZ

### FIS SOLUTION

OR USE **REVOLVER**  
PART# CHE-REVOLVER-1QT

## DALLISGRASS

Dallisgrass is a coarse-textured grass that grows in a clump and slowly increases in diameter as its shallow, underground stems (short rhizomes) grow outward. The rhizomes have short internodes (the length of the stem between the joints) that look like concentric rings on its surface. The presence of these distinctive rhizomes is a good way to distinguish dallisgrass from other common clumping grasses in lawns, such as crabgrass. As the clump matures, the center may die and a different grass or weed may be growing in its center.



## SEDGEHAMMER

PART#  
CHE-SEDGEHAMMER  
1.3OZ

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ

## NUTSEGE

Although nutsedges resemble grasses and often are referred to as "nutgrass," they aren't grasses but are true sedges. Their leaves are thicker and stiffer than most grasses and are arranged in sets of three at their base; grass leaves grow across from each other in sets of two. Nutsedge stems are solid, and in cross section they are triangular; grass stems are hollow and round, and in cross section they are almost flat or oval. Nutsedge has three long, leaflike bracts at the base of each flower head. Yellow nutsedge has light brown flowers and seeds.



## TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ

## WILD GARLIC/ONION

Both are winter perennials, with wild garlic being predominant in South Carolina. They emerge in late Fall from underground bulbs and grow through the Winter and Spring. In late Spring, aerial bulblets are formed and the plants die back in early Summer. The underground bulb persist in the soil for several years. While both have thin, green, waxy leaves, those of wild garlic are round and hollow, while those of wild onion are flat and solid. Unfortunately, there are no pre-emergence herbicides that will control wild onion or wild garlic. They must be treated with a post-emergence herbicide, and persistence is the key.



# HERBICIDE SOLUTIONS FOR COMMON WEEDS

## CENTIPEDE



### CUDWEED

The cudweeds are comprised of many different species that are similar in growth habits and control measures. In general, the cudweeds have basal rosettes and the leaves and seedheads are covered in distinct fine, white "wooly" fibers. Some cudweeds only have this hair on the underside of the leaves, and other cudweeds have this hair on all surfaces. Cudweeds overwinter as small basal rosettes, but in the spring usually grow an upright stem.



### DANDELION

Dandelion is a European native perennial plant whose low spreading, deeply notched leaves form a rosette pattern as they emerge from a weak central tap root. It closely resembles endive in form and in cultural requirements. The hollow flower stalks form a single compound flower of many golden colored florets. Like chicory, varieties differ in leaf shape, ranging from very curly leaved to broad leaved.



### NUTSEGE

Although nutsedges resemble grasses and often are referred to as "nutgrass," they aren't grasses but are true sedges. Their leaves are thicker and stiffer than most grasses and are arranged in sets of three at their base; grass leaves grow across from each other in sets of two. Nutsedge stems are solid, and in cross section they are triangular; grass stems are hollow and round, and in cross section they are almost flat or oval. Nutsedge has three long, leaflike bracts at the base of each flower head. Yellow nutsedge has light brown flowers and seeds.



### WHITE CLOVER

White clover is a perennial with creeping stems rooting at some nodes. Leaves have three leaflets with a long erect petiole that is surrounded at the base by a membranous sheath. The flowering heads are borne on long stalks from the stems and usually rise above the leaves. The flower cluster may be 1/2 to 1 1/2 inches in diameter. The petals are white.



### TRIAD

PART#  
CHE-TRIAD  
2.5G

### FIS SOLUTION

OR USE **SULFENTRAZONE**  
PART# CHE-SULFENTRAZONE 4L-.5G



### ROMETSOL

PART#  
CHE-ROMETSOL  
2OZ

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ

### SEDGEHAMMER



PART#  
CHE-SEDGEHAMMER  
1.3OZ

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ



### ROMETSOL

PART#  
CHE-ROMETSOL  
2OZ

### FIS SOLUTION

OR USE **CERTAINTY**  
PART# CHE-CERTAINTY-1.25OZ





**ROMETSOL**

PART#  
CHE-ROMETSOL  
20Z

**FIS SOLUTION**

OR USE **FAHRENHEIT**  
PART# CHE-FAHRENHEIT-6OZ

## WILD GARLIC/ONION

Both are winter perennials, with wild garlic being predominant in South Carolina. They emerge in late Fall from underground bulbs and grow through the Winter and Spring. In late Spring, aerial bulblets are formed and the plants die back in early Summer. The underground bulb persist in the soil for several years. While both have thin, green, waxy leaves, those of wild garlic are round and hollow, while those of wild onion are flat and solid. Unfortunately, there are no pre-emergence herbicides that will control wild onion or wild garlic. They must be treated with a post-emergence herbicide, and persistence is the key.



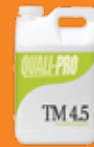
# COMMON DISEASES



## ANTHRACNOSE

Principal Turfgrass Hosts: Warm and Cool Season Grasses

Anthracnose typically infects turfgrass during warm weather. It causes irregularly shaped patches that are yellow to brown in color. Leaf lesions that are yellow with black centers may also occur. Anthracnose also causes a basal stem and leaf sheath rot during cool, wet weather in the spring and warm, moist weather in the summer. Infected shoots are easily detached.



**TM4.5  
SELECT**

PART#  
CHE-TM4.5SELECT  
2.5G T-METHYL

**FIS SOLUTION**

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G



## BROWN PATCH

Principal Turfgrass Hosts: Almost all turfgrasses (warm and cool season)

The symptoms of brown patch can vary depending on the grass species, climatic and atmospheric conditions, and soil management of the turfgrass. This disease typically causes rings and/or patches of blighted turfgrass that measure 5 inches to more than 10 feet in diameter. It also causes leaf spots and "smoke rings" -- thin, brown borders around the diseased patches that appear most frequently in the early morning.



**TM4.5  
SELECT**

PART#  
CHE-TM4.5SELECT  
2.5G T-METHYL

**FIS SOLUTION**

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G



## DOLLAR SPOT

Principal Turfgrass Hosts: All species of warm- and cool-season turfgrass. Georgia has seen cases in tall fescues, Bentgrass, Bermuda hybrids and Centipede.

Symptoms of dollar spot includes sunken, circular patches that measure up to several inches on turf-grass. The patches turn from brown to straw color and may eventually grow together, forming irregularly shaped areas. Infected leaves may display small lesions that turn from yellow-green to straw color with a reddish-brown border. The lesions can extend the full width of the leaf. Multiple lesions may occur.



**PPZ 41.8**

PART#  
CHE-PPZ41.8SELECT  
1G

**FIS SOLUTION**

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G



## FAIRY RING

Principal Turfgrass Hosts: All species of warm- and cool-season turfgrass. Particularly damaging in Centipede and St. Augustine grass in south and coastal Georgia.

Fairy ring symptoms vary based on the cause. Above-ground mushroom and puff ball basidiocarps may or may not occur. Typically, this disease has outer rings that are either dark-green or brown in color. The shape and size of the rings vary depending on the species. Activity in the turf ceases when the individual rings come in contact with each other. Some causal agents form fruiting bodies but do not form rings.



**AZOXY  
50WDG**

PART#  
CHE-AZOXY50WDG  
1LB

**FIS SOLUTION**

OR USE **HERITAGE**  
PART# CHE-HERITAGE-30LB





## PPZ 41.8

PART#  
CHE-PPZ41.8SELECT  
1G

### FIS SOLUTION

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G

## GRAY LEAF SPOT

Principal Turfgrass Hosts:

St. Augustinegrass, Perennial ryegrass, Bermudagrass, Centipedegrass, Bentgrass, St. Augustine and various species of Fescue

The symptoms of gray leaf spot vary depending on the grass type. On St. Augustinegrass, gray leafspot first appears as small, brown spots on the leaves and stems. The spots quickly enlarge to approximately ¼ inch in length and become bluish-gray in color and oval or elongated in shape. The mature lesions are tan to gray in color and have depressed centers with irregular margins that are purple to brown in color.



## PPZ 41.8

PART#  
CHE-PPZ41.8SELECT  
1G

### FIS SOLUTION

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G

## LARGE PATCH (ZOYSIA PATCH)

Principal Turfgrass Hosts: Zoysia and bermudagrass

Large patch occurs during the spring and fall, when warm-season turfgrasses are entering or exiting their period of winter dormancy. Circular patches of diseased turf are observed, ranging in diameter from less than 3 ft. up to 25 ft. Leaves of recently infected turf, located at the periphery of the patch, may appear orange in color. Some patches may be perennial, recurring in the same location and expanding in diameter year after year.



## PPZ 41.8

PART#  
CHE-PPZ41.8SELECT  
1G

### FIS SOLUTION

OR USE **PROPICONAZOLE**  
PART# CHE-PROPICONAZOLE-1G

## LEAF SPOT / MELTING OUT

Principal Turfgrass Hosts: All turfgrasses

Leaf spot symptoms include purplish-brown to black spots with tan centers on the leaf blade and sheath. The lower leaves of the infected plants become shriveled and blighted. Severe leaf spot can lead to melting-out when leaves and tillers are infected, causing severe thinning of the stand. On cool season turfgrass, melting-out typically follows the appearance of leaf spots.



## AZOXY 50WDG

PART#  
CHE-AZOXY50WDG  
1LB

### FIS SOLUTION

OR USE **FOSAL SELECT**  
PART# CHE-FOSAL-5.5#

## PYTHIUM BLIGHT

Principal Turfgrass Hosts: Tall Fescue, Perennial Ryegrass, St. Augustine and Bentgrass

Mostly in tall fescue and Bentgrass. Pythium blight appears as yellow, irregularly shaped patches. The affected turfgrass is thin, off-color and slowgrowing, while the root system is only slightly stunted, with reduced volume and vigor. Foliar mycelium does occur.







## PYTHIUM ROOT ROT

Principal Turfgrass Hosts: Bermudagrass, Centipedegrass, Zoysiagrass and St. Augustine grass

Pythium root rot is common on highly maintained turf. Although symptoms of Pythium root rot are typically nondistinctive, this disease can appear as yellow, irregularly shaped patches. The affected turfgrass is thin, off-color and slow growing, while the root system is stunted with reduced volume and vigor. Foliar mycelium does not occur.



**AZOXY  
50WDG**

PART#  
CHE-AZOXY50WDG  
1LB

**FIS SOLUTION**

OR USE **FOSAL SELECT**  
PART# CHE-FOSAL-5.5#



## TAKE-ALL ROOT ROT

Principal Turfgrass Hosts: St. Augustinegrass, Bentgrass, Bermudagrass and Centipedegrass. Bluegrass and Fescues are rarely affected in Georgia.

Take-all patch causes wilted, circular patches that are brown or bronze-colored and measure up to several feet in diameter. Infected plants have dark- brown roots.



**PPZ 41.8**

PART#  
CHE-PPZ41.8SELECT  
1G

**FIS SOLUTION**

OR USE **EAGLE 20EW**  
PART# CHE-EAGLE20EW-1P





# INSECT ID



## BIFENTHRIN

PART#  
CHE-BIFENTHRIN  
7.9-1G



SOLUTION

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G

## ANTS

Susceptible Turfgrass: Several species of ants commonly inhabit home lawns and ornamental plantings of trees and shrubs

Ants seldom cause serious damage to home lawns. They may cause minor damage to the turf by loosening the soil and constructing small mounds in the nesting areas.



## BIFENTHRIN

PART#  
CHE-BIFENTHRIN  
7.9-1G



SOLUTION

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G

## ARMY WORMS

Susceptible Turfgrass: All turfgrass species

Cutworms and armyworms are active from mid-March to October. They feed on leaves and crowns and may cut off plants near the soil surface. Larvae feed at night and hide in the thatch layer or in a burrow in the soil during the day. Turfgrass may be closely clipped around aeration holes, which larvae commonly occupy. Damage appears as circular spots of dead grass or depressed spots. Armyworms, especially, prefer damp areas.



## IMIDACLOPRID 2F



PART#  
CHE-IMIDACLOPRID2F  
1G



SOLUTION

OR USE **IMIDACLOPRID 75WSP**  
PART# CHE-IMIDACLOPRID 75WSP-1G

## BILLBUGS

Susceptible Turfgrass: Most turfgrass species

Billbug damage usually appears when summer drought stress is common. Light infestations in lawns often produce small dead spots that look like the turf disease, dollar spot. Sometimes the damage looks like irregular mottling or browning in the turf. Heavy infestations can result in complete destruction of the turf, usually by August. The major problem with billbug damage is that it looks like a variety of the other problems.



## BIFENTHRIN

PART#  
CHE-BIFENTHRIN  
7.9-1G



SOLUTION

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G

## BLUEGRASS WEEVIL

Susceptible Turfgrass:

Bluegrass, creeping bentgrass and perennial ryegrass. Most North American turfgrasses.

Most damage is attributed to the larvae feeding on and killing stems. A single individual can injure up to 20 stems. Stems are weakened and broken due to the boring activities of the young larvae. Older larvae reside at the soil or thatch surface where they feed on the crowns. Injury is generally expressed as growing areas of yellow and brown patches.





## CHINCH BUGS

Susceptible Turfgrass:

Most commonly reported as a pest on St. Augustine but also infests most other turfgrasses.

Chinch bug infestations frequently occur in turfgrass with thick thatch that is exposed to full sunlight during periods of hot, dry weather. Chinch bug damage is often less noticeable during the Spring and early summer. Damage frequently appears from early July through late August when the insects are actively feeding.



**FIS SOLUTION**

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G



## CUT WORMS

Susceptible Turfgrass: All turfgrass species

Cutworms and armyworms are active from mid-March to October. They feed on leaves and crowns and may cut off plants near the soil surface. Larvae feed at night and hide in the thatch layer or in a burrow in the soil during the day. Turfgrass may be closely clipped around aeration holes, which larvae commonly occupy. Damage appears as circular spots of dead grass or depressed spots.



**FIS SOLUTION**

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G



## GRUBS

Susceptible Turfgrass: All species of turfgrass

Heavy white grub infestations can destroy grass roots, causing the affected area to become spongy, which allows the sod to be rolled back like a piece of carpet. Evidence of grub damage, including patches of dead or dying turf, are visible during spring (April and May) and late summer and fall (September and October) A good indication of a grub infestation is the presence of skunks, crows, or moles feeding on turf.



**FIS SOLUTION**

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G



## MOLE CRICKETS

Susceptible Turfgrass: All species of turfgrass

The southern mole cricket does most of its damage by loosening the soil around the root system causing the roots to dry and desiccate. The tawny mole cricket feeds almost exclusively on plant materials and its feeding on root and shoot can destroy a well-established turf planting. Its damage to turf can range from light tunneling and small mounds where the adults enter the soil, to a complete loss of stand.



**FIS SOLUTION**

OR USE **ACEPHATE**  
PART # CHE-ACEPHATE90-5#





## BIFENTHRIN

PART#  
CHE-BIFENTHRIN  
7.9-1G

### FIS SOLUTION

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G

## SOD WEB WORMS

Susceptible Turfgrass:  
Most turfgrass species

The damage caused by sod webworms may first appear in early spring. The damage shows up as small dead patches of grass among the normally growing grass. The summer generation may cause general turf thinning or even irregular dead patches in late June into early August. Sod webworms prefer sunny areas and the larvae are often found on south facing, steep slopes and banks, where it is hot and dry. Heavily shaded turf is seldom attacked by the larvae.



## BIFENTHRIN

PART#  
CHE-BIFENTHRIN  
7.9-1G

### FIS SOLUTION

OR USE **CARBARYL**  
PART# CHE-CARBARYL-43-2.5G

## SPITTLE BUGS

Susceptible Turfgrass: All turfgrass species, but centipedegrass is the most susceptible.

Spittlebug feeding causes a purple and/or white stripe to run along the grass blades of infested turfgrass, especially centipedegrass. In heavy infestations, the turf wilts and the tips turn yellow, eventually brown, and then curl. In St. Augustine grass, spittlebug injury resembles that of chinch bugs. However, unlike chinch bug injury, which tends to occur in sunny areas, spittlebug injury usually appears in shady areas.



# EASY TO CALCULATE LED PAYBACK

## LED VS STANDARD SYSTEM



### 10X LONGER LIFE

21.6 year lifespan vs  
2.1 year lifespan



### 10X LOWER ENERGY COSTS

1 cent/hour or \$21.90/year vs.  
10 cents/hour or \$182.50/year



### LESS POWER REQUIRED

XF150 (150 watt transformer 1.25 amps) vs.  
XF900 (900 watt transformer 7.55 amps)



ASK ABOUT OUR UPCOMING LIGHTING  
SEMINARS, SO YOU CAN GET STARTED NOW!

## EASY LED BULB REPLACEMENT

Existing Halogen	LED Replacement
3156 wedge base 25w	L3156-LED-3W
Bi pin 20w	LBIPIN-LED-3W
20w MR11 flood	LMR11-LED-4W-F
20w MR16 flood	LMR16-LED-4W-F
20w MR16 narrow	LMR16-LED-4W-NS
20w MR16 wide flood	LMR16-LED-4W-WF
35w MR16 flood	LMR16-LED-5W-F
35w MR16 Narrow	LMR16-LED-5W-NS
35w MR16 wide flood	LMR16-LED-5W-WF
20w PAR36 wide flood	LPAR36-LED-8W-WF



# CLASS200 PIPE CHART

Nominal Size Avg. ID Pipe OD Avg. wall Min. wall	Class 315		Class 200		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"		6"	
	1/2"		3/4"		1"		1-1/4"		1-1/2"		2"		2-1/2"		3"		4"		6"	
	0.696		0.910		1.175		1.512		1.734		2.173		2.635		3.210		4.134		6.084	
	0.840		1.050		1.315		1.660		1.900		2.375		2.875		3.500		4.500		6.625	
	0.072		0.070		0.070		0.074		0.083		0.101		0.120		0.145		0.183		0.271	
	0.062		0.060		0.060		0.064		0.073		0.091		0.110		0.135		0.173		0.255	
Flow (gpm)	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss	Velocity ft/s	PSI loss
1	0.84	0.25	0.49	0.07	0.30	0.02	0.18	0.01	0.14	0.00										
2	1.68	0.90	0.99	0.24	0.59	0.07	0.36	0.02	0.27	0.01	0.17	0.00								
3	2.53	1.90	1.48	0.52	0.89	0.15	0.54	0.04	0.41	0.02	0.26	0.01								
4	3.37	3.24	1.97	0.88	1.18	0.25	0.71	0.07	0.54	0.04	0.35	0.01	0.24	0.00						
5	4.21	4.89	2.46	1.33	1.48	0.38	0.89	0.11	0.68	0.06	0.43	0.02	0.29	0.01						
6	5.05	6.85	2.96	1.86	1.77	0.54	1.07	0.16	0.81	0.08	0.52	0.03	0.35	0.01	0.24	0.00				
7	5.90	9.12	3.45	2.47	2.07	0.71	1.25	0.21	0.95	0.11	0.60	0.04	0.41	0.01	0.28	0.01				
8	6.74	11.68	3.94	3.17	2.36	0.91	1.43	0.27	1.09	0.14	0.69	0.05	0.47	0.02	0.32	0.01				
9	7.58	14.53	4.43	3.94	2.66	1.14	1.61	0.33	1.22	0.17	0.78	0.06	0.53	0.02	0.36	0.01				
10	8.42	17.66	4.93	4.79	2.96	1.38	1.78	0.40	1.36	0.21	0.86	0.07	0.59	0.03	0.40	0.01				
12	10.11	24.75	5.91	6.71	3.55	1.94	2.14	0.57	1.63	0.29	1.04	0.10	0.71	0.04	0.48	0.01				
14	11.79	32.93	6.90	8.93	4.14	2.58	2.50	0.76	1.90	0.39	1.21	0.13	0.82	0.05	0.55	0.02				
16	13.48	42.16	7.88	11.44	4.73	3.30	2.86	0.97	2.17	0.50	1.38	0.17	0.94	0.06	0.63	0.02	0.38	0.01		
18	15.16	52.44	8.87	14.23	5.32	4.10	3.21	1.20	2.44	0.62	1.56	0.21	1.06	0.08	0.71	0.03	0.43	0.01		
20			9.85	17.29	5.91	4.99	3.57	1.46	2.71	0.75	1.73	0.25	1.18	0.10	0.79	0.04	0.48	0.01		
22			10.84	20.63	6.50	5.95	3.93	1.74	2.99	0.90	1.90	0.30	1.29	0.12	0.87	0.04	0.53	0.01		
24			11.82	24.24	7.09	6.99	4.28	2.05	3.26	1.05	2.07	0.35	1.41	0.14	0.95	0.05	0.57	0.02		
26			12.81	28.11	7.68	8.11	4.64	2.38	3.53	1.22	2.25	0.41	1.53	0.16	1.03	0.06	0.62	0.02		
28			13.80	32.25	8.27	9.30	5.00	2.73	3.80	1.40	2.42	0.47	1.65	0.18	1.11	0.07	0.67	0.02		
30			14.78	36.64	8.87	10.57	5.35	3.10	4.07	1.59	2.59	0.53	1.76	0.21	1.19	0.08	0.72	0.02		
32					9.46	11.91	5.71	3.49	4.34	1.79	2.76	0.60	1.88	0.23	1.27	0.09	0.76	0.03	0.35	0.00
34					10.05	13.32	6.07	3.91	4.61	2.01	2.94	0.67	2.00	0.26	1.35	0.10	0.81	0.03	0.37	0.00
36					10.64	14.81	6.42	4.34	4.88	2.23	3.11	0.74	2.12	0.29	1.43	0.11	0.86	0.03	0.40	0.00
38					11.23	16.37	6.78	4.80	5.16	2.46	3.28	0.82	2.23	0.32	1.50	0.12	0.91	0.04	0.42	0.01
40					11.82	18.00	7.14	5.28	5.43	2.71	3.46	0.90	2.35	0.35	1.58	0.14	0.95	0.04	0.44	0.01
42					12.41	19.70	7.50	5.78	5.70	2.97	3.63	0.99	2.47	0.39	1.66	0.15	1.00	0.04	0.46	0.01
44					13.00	21.47	7.85	6.30	5.97	3.23	3.80	1.08	2.59	0.42	1.74	0.16	1.05	0.05	0.48	0.01
46					13.59	23.32	8.21	6.84	6.24	3.51	3.97	1.17	2.70	0.46	1.82	0.18	1.10	0.05	0.51	0.01
48					14.18	25.23	8.57	7.40	6.51	3.80	4.15	1.27	2.82	0.50	1.90	0.19	1.15	0.06	0.53	0.01
50					14.78	27.21	8.92	7.98	6.78	4.10	4.32	1.38	2.94	0.53	1.98	0.20	1.19	0.06	0.55	0.01
55							9.82	9.52	7.46	4.89	4.75	1.63	3.23	0.64	2.18	0.24	1.31	0.07	0.61	0.01
60							10.71	11.18	8.14	5.74	5.18	1.91	3.53	0.75	2.38	0.29	1.43	0.08	0.66	0.01
65							11.60	12.97	8.82	6.66	5.62	2.22	3.82	0.87	2.57	0.33	1.55	0.10	0.72	0.01
70							12.49	14.88	9.50	7.64	6.05	2.55	4.11	1.00	2.77	0.38	1.67	0.11	0.77	0.02
75							13.38	16.90	10.18	8.68	6.48	2.89	4.41	1.13	2.97	0.43	1.79	0.13	0.83	0.02
80							14.28	19.05	10.85	9.78	6.91	3.26	4.70	1.28	3.17	0.49	1.91	0.14	0.88	0.02
85									11.53	10.94	7.34	3.65	4.99	1.43	3.37	0.55	2.03	0.16	0.94	0.02
90									12.21	12.16	7.78	4.06	5.29	1.59	3.56	0.61	2.15	0.18	0.99	0.03
95									12.89	13.45	8.21	4.48	5.58	1.76	3.76	0.67	2.27	0.20	1.05	0.03
100									13.57	14.79	8.64	4.93	5.88	1.93	3.96	0.74	2.39	0.22	1.10	0.03
110									14.93	17.64	9.50	5.88	6.46	2.30	4.36	0.88	2.63	0.26	1.21	0.04
120											10.37	6.91	7.05	2.71	4.75	1.04	2.86	0.30	1.32	0.05
130											11.23	8.02	7.64	3.14	5.15	1.20	3.10	0.35	1.43	0.05
140											12.10	9.20	8.23	3.60	5.54	1.38	3.34	0.40	1.54	0.06
150											12.96	10.45	8.81	4.09	5.94	1.57	3.58	0.46	1.65	0.07
160											13.82	11.77	9.40	4.61	6.34	1.76	3.82	0.52	1.76	0.08
170											14.69	13.17	9.99	5.16	6.73	1.97	4.06	0.58	1.87	0.09
180													10.58	5.73	7.13	2.19	4.30	0.64	1.98	0.10
190													11.16	6.34	7.52	2.42	4.54	0.71	2.09	0.11
200													11.75	6.97	7.92	2.67	4.77	0.78	2.20	0.12
220													12.93	8.31	8.71	3.18	5.25	0.93	2.42	0.14
240													14.10	9.77	9.50	3.74	5.73	1.09	2.65	0.17
260															10.29	4.33	6.21	1.27	2.87	0.19
280															11.09	4.97	6.68	1.45	3.09	0.22
300															11.88	5.65	7.16	1.65	3.31	0.25
320			SHADED AREA REPRESENTS VELOCITIES OVER 5 FT/S. USE WITH CAUTION												12.67	6.37	7.64	1.86	3.53	0.28
340													13.46	7.12	8.12	2.08	3.75	0.32		
360													14.25	7.92	8.59	2.31	3.97	0.35		
380															9.07	2.56	4.19	0.39		
400															9.55	2.81	4.41	0.43		
420																	10.03	3.08	4.63	0.47
440																	10.50	3.35	4.85	0.51
460																	10.98	3.64	5.07	0.56
480																	11.45	3.94	5.29	0.60
500																	11.94	4.25	5.51	0.65

SHADED AREA REPRESENTS  
VELOCITIES OVER 5 FT/S.  
USE WITH CAUTION

## MULCH CALCULATOR

### 2 CUBIC BAGS

	DEPTH			
	2"	3"	4"	
150	14	21	27	NUMBER OF BAGS
200	17	27	34	
250	21	34	41	
300	27	41	48	
350	31	44	58	
400	34	54	68	
450	41	58	75	
500	44	61	81	
550	48	68	95	
600	51	75	102	
650	54	81	108	
700	58	88	115	
750	61	95	125	
800	68	100	135	
850	71	108	142	
900	75	115	149	
950	81	122	156	
1000	85	125	162	

### 3 CUBIC BAGS

	DEPTH			
	2"	3"	4"	
150	10	14	18	NUMBER OF BAGS
200	12	18	23	
250	14	23	28	
300	18	28	32	
350	21	30	39	
400	23	36	46	
450	28	39	50	
500	30	41	54	
550	32	46	64	
600	34	50	68	
650	36	54	72	
700	39	59	77	
750	41	64	84	
800	46	66	90	
850	48	72	95	
900	50	77	100	
950	54	82	104	
1000	57	84	108	

## PINE STRAW CALCULATOR

### NEW INSTALL

SQUARE FEET	DEPTH		NUMBER OF BALES
	3"		
	30	1	
	150	5	
	300	10	
	450	15	
	600	20	
	750	25	
	900	30	
	1050	35	
	1200	40	
	1350	45	
	1500	50	
	1650	55	
	1800	60	
	1950	65	
	2100	70	
	2250	75	
2400	80		
2550	85		

### TOUCH UP

SQUARE FEET	DEPTH		NUMBER OF BALES
	3"		
	40	1	
	200	5	
	400	10	
	600	15	
	800	20	
	1000	25	
	1200	30	
	1400	35	
	1600	40	
	1800	45	
	2000	50	
	2200	55	
	2400	60	
	2600	65	
	2800	70	
	3000	75	
3200	80		
3400	85		



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TYPE	NAME BRANDS	FIS EQUIVALENT	CONTAINER SIZE	CASE QTY
FUNGICIDES	Action®	Daconilac on-2.5G	2.5G	2
	Banner Maxx®	Propiconazole-2.5G	2.5	2
	Chipco Signature®	Fosal-5.5#	5.5#	4
	Chipco 26019®	Iprodione2SE-2.5G	2.5G	2
	Clearys 3336®	TM4.5Select-2.5G	2.5G	2
	Daconil Ultrex®	Chlorothalonil82.5DF	5#	4
	Daconil Weathertik®	Chlorothalonil720S	2.5G	2
GROWTH REGULATOR	Dithane®	Manzate	6#	40
	Subdue Maxx®	Regulate-1G	1G	2
	Primo Maxx®	TrinPac-1G	1G	2
PRE-EMERGENTS	Barricade 65WDG®	Prodiamine65WDG-5#	5#	6
	Dimension Ultra®	Dithiopyr40WSP-5#	5#	20
	Kerb®	Pronamide-3.3SC-2.5G	2.5G	2
	Pendulum®	Pendulum3.3-2.5G	1.25G	4
	Snapshot®	T/12.5-50#	50#	40
COLORANT	Surflan®	Surflan-2.5GAL	2.5G	2
	Surflan XL2G®	Surflan-50#	50#	40
	Turf Marker Blue®	Bluecolorant-1G	1G	4
HERBICIDE	Round-Up®	Glyphosate41-2.5G	2.5G	2
	Round-Up®	Glyphosate41-30G	30G	1
	Dismiss®	Sulfentrazone4L-.5G	.5G	4
INSECTICIDE	Merit®	Imidacloprid2F-1G	1G	4
	Onyx Pro®	Bifenxts-1G	1G	4
	Scimitar®	Lambda-1G	1G	4
	Talstar®	Bifenthrin-7.9-1G	1G	4
	Top Choice®	Fipronil (rup)	30#	



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Huntsville:	(256)513-7888	(256)213-7347	4630 Commercial Dr NW	Huntsville, AL 35816
<b>FLORIDA</b>				
Brandon	(813)377-2667	(813)402-2969	8110 Broadway Unit D	Tampa, FL 33619
Clearwater	(727)446-3534	(727)446-3013	1740 Calumet St.	Clearwater, FL 33765
Ft. Lauderdale	(954)689-6406	(954)689-6409	5320 NW 10th Terrace	Ft. Lauderdale, FL 33309
Ft. Myers	(239)936-6556	(239)936-0085	6300 Arc Way	Ft. Myers, FL 33966
Gainesville	(352)375-2225	(352)375-1113	1250 NW 53rd Ave.	Gainesville, FL 32653
Jacksonville Beach	(904)247-8899	(904)246-5726	740 10th St. South	Jacksonville Beach, FL 32250
Jacksonville	(904)363-8899	(904)363-1114	8863-2 Phillips Hwy	Jacksonville, FL 32256
Kissimmee	(407)518-1555	(407)518-1557	2792 Michigan Ave. #400	Kissimmee, FL 34744
Lakeland	(863)683-1323	(863)688-0123	930 E. Oak Street	Lakeland, FL 33801
Miami	(305)392-3202	(305)392-9536	7801 NW 62nd St.	Miami, FL 33166
Minneola	(352)242-9050	(352)242-9357	514 Disston Ave.	Minneola, FL 34755
Naples	(239)594-0904	(239)594-1262	5565 Shirley St.	Naples, FL 34109
Nokomis	(941)347-4044	(941)347-4045	128 Triple Diamond Blvd	Nokomis, FL 34275
Ocala	(352)368-5600	(352)368-3770	1490-A NW 38th Ave.	Ocala, FL 34482
Orange Park	(904)541-1255	(904)541-1995	170-A Industrial Loop South	Orange Park, FL 32073
Orlando	(407)425-6669	(407)648-0799	2400 Paseo Ave.	Orlando, FL 32805
Ormond Beach	(386)673-8899	(386)673-6445	1136 N. U.S. Hwy. 1	Ormond Beach, FL 32174
Oviedo	(407)365-2225	(407)359-1005	290 Mitchell Hammock Rd. W.	Oviedo, FL 32765
Palm Coast	(386)586-0137	(386)586-3861	304 N. State St.	Bunnell, FL 32110
Pensacola	(850)262-0430	(850)262-0435	2810 Copter Rd	Pensacola, FL 32514
Port Richey	(727)339-6500	(727)339-6499	8300 Leo Kidd Ave	Port Richey, FL 34668
Port St. Lucie	(772)464-9288	(772)464-9173	857 S.W. South Macedo Blvd	Port St. Lucie, FL 34983
Sanford	(407)323-4222	(407)323-9223	300 Central Park Dr.	Sanford, FL 32771
Santa Rosa Beach	(850)622-2797	(850)267-3288	76 Shannon Ln.	Santa Rosa Beach, FL 32459
Sarasota	(941)203-6223	(941)706-0529	950 Bell Rd.	Sarasota, FL 34240
Sebring	(863)471-1110	(863)471-1253	6771 US Hwy 27 S.	Sebring, FL 33876
Summerfield	(352)245-4428	(352)245-4916	15430 S. Hwy. 441	Summerfield, FL 34491
Tallahassee	(850)580-5251	(850)580-5244	3481 Garber Dr.	Tallahassee, FL 32303
Tampa	(813)978-1181	(813)972-1299	14751 N. Nebraska Ave.	Tampa, FL 33613
West Palm Beach	(561)688-1477	(561)688-1479	7153 C-2 Southern Blvd.	West Palm Beach, FL 33413
Winter Garden	(407)550-0088	(407)347-7048	1031 Crown Park Circle	Winter Garden, FL 34787
<b>GEORGIA</b>				
Brunswick:	(912)554-2270	(912)554-2272	128 Shell Dr.	Brunswick, GA 31520
Cumming:	(770)844-7899	(770)844-8262	1112 Samples Industrial Dr.	Cumming, GA 30041
Savannah:	(912)964-2363	(912)964-2336	62 Columbia Dr.	Pooler, GA 31322
<b>NORTH CAROLINA</b>				
Matthews	(704)893-0707	(704)893-0749	13011 E. Independence Blvd.	Matthews, NC 28105
<b>SOUTH CAROLINA</b>				
Greenville	(864)299-5424	(864)299-5429	1 North Kings Road	Greenville, SC 29605

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