

The logo consists of the text "AQUA·AID" in white, bold, sans-serif capital letters, centered within a red oval. A thick red curved line starts from the top right and sweeps across the page, and a light gray curved line is positioned below it.

AQUA·AID

AMENITY BROCHURE

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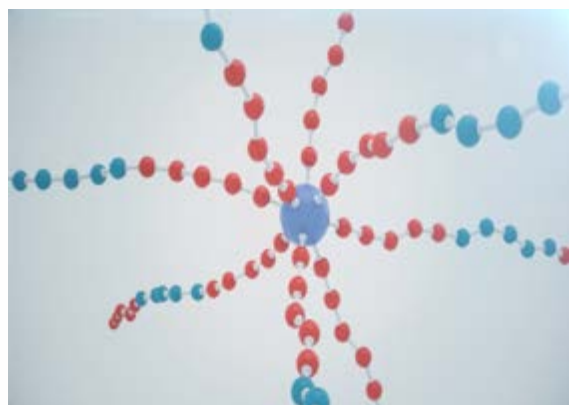
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Surfactants

Aqua-Aid offers an extensive range of surfactant products for the professional turf industry. These surfactants can be split up into two major categories, state-of-the-art 3-D surfactants and conventional surfactants.

The 3-D surfactants are the most advanced surfactants in the market. These surfactants are backed up with various independent research and have field-proven results for numerous of years by the end users. The multi-branch regenerating and OARS technologies both hold different patents.



Multi-branch regenerating



Co-block polymer

The multi-branch regenerating technology is completely different to other technologies currently used in the professional turf market. The difference between the traditional linear co-polymer molecules is that they are much higher in molecular weight and have multiple interactive sites (6 or 8 sites), therefore each branch is a wetting agent by itself.

This branching will increase the interaction between the surfactant and the soil, this will cause very consistent moisture levels within the treated surface. The combination of the higher molecule weight and branching will positively affect the biodegradation of the product. As one branch is removed via biodegradation, a new lower molecular weight surface active species is regenerated, this will continue to manage the water in the soil.

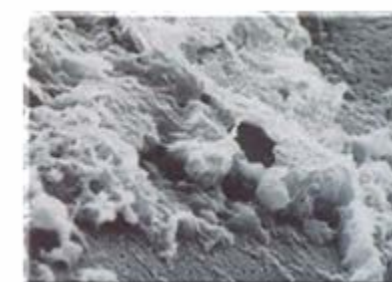
This technology is incorporated in all of our 3-D surfactants. This will reduce hydrophobic conditions on a sustainable basis. Independent research has shown the surfactants are able to reduce water uses of over 30 % while keeping the turf quality at the same quality.

Another Aqua-Aid patented technology is the OARS technology. OARS stands for Organic Acid Redistribution System. The OARS technology controls soil water repellency by stripping the organic acid layer of the soil colloid. This dried out organic acid layer will form a wax layer on the soil colloid making these colloids hydrophobic, this is the main reason for Localized Dry Spots (LDS).

Other wetting agents mask the problem by heavily wetting the soil, this will not treat the problem because the sand colloids will remain hydrophobic. After using the OARS technology the soil will become hydrophilic again. The OARS technology is patented and backed up by independent research.



Clean sand particle



Sand particle with Organic Acid coating causing water repellency

Aqua-Aid has 4 different 3-D surfactants in its portfolio. The OARS HS is a hydrating surfactant which includes the multi-branch regenerating and OARS technology. The OARS PS is a penetrating surfactant and also includes both technologies. PBS-150 and PBS-150 Granular are long lasting hydrating soil surfactants and consist of 100 % multi-branch regenerating technology.

The conventional surfactant range consists of three different products. These three products are all researched and field proven products for many years. **Aquifer** is a co-block polymer based omni directional hydrating surfactant. **Aqua-Aid** is a very cost-effective penetrant formulated with high quality grade non-ionic surfactants. **FWY-ISP** is a unique injectable soil penetrant, designed to cover large surfaces.

Next to the sprayable surfactants mentioned, Aqua-Aid also offers a range of hand water pellets in the PROportioner System. These pellets are available in 4 different products, all with their own characteristics.

OARS HS

Soil Hydrating Surfactant

- Improves water retention
- Controls water repellency
- Reduces drought stress
- Provides uniformity in soil moisture
- Reduces localized dry spots



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OARS HS

Soil Hydrating Surfactant

OARS HS Soil Hydrating Surfactant, is a combination of the university researched, field proven and patented Organic Acid Redistribution System, OARS, and multi-branched hydrating chemistry. **OARS HS** controls soil water repellency while providing uniform soil moisture and increased soil moisture retention.

PRODUCT DETAILS

- Removes humic coatings from hydrophobic soil particles
- Controls water repellency
- Hydrates the soil to improve moisture retention
- Reduces drought stress
- Consistent performance between applications to maintain adequate moisture in hard to wet soils

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
Apply 13 - 16 L/Ha at 30 day interval. After an initial 16L application, follow up with 13L/Ha with an interval of 4 - 6 weeks or as needed. Drought conditions can best be managed by applying 6 - 8 L/Ha at 15 day intervals. For extreme drought conditions with high temperatures and/or increased soil water repellency, apply 20 - 25 L/Ha in 800 L of water at 30 day intervals. Irrigate with sufficient water to deliver **OARS HS** to the soil profile, 3 mm or more is recommended.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA

OARS HS

COMPOSITION:

Octahydroxy polyoxyalkylene
polymers 85,0%
Amine salt of alkyl substituted
maleic acid 7,5%
Water 7,5%

Distributed by:

OARS PS

Soil Penetrating Surfactant

- Increased water penetration
- Provides firm, fast surfaces
- Controls water repellency
- Provides uniformity in soil moisture
- Reduces local dry spots



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OARS PS

Soil Penetrating Surfactant

OARS PS, Soil Penetrating Surfactant, is a combination of the university researched, field proven and patented Organic Acid Redistribution System, OARS, and multi-branched hydrating chemistry. **OARS PS** controls soil water repellency while providing uniform soil moisture for a longer period of time.

PRODUCT DETAILS

- Removes humic coatings from hydrophobic soil particles
- Increases penetration of water
- Provides firm, fast surfaces
- Improves water management efficiency
- Controls soil water repellency / reduces LDS
- Longer lasting activity

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
Apply 13 - 16 L/Ha at 30 day interval. After an initial 16L application, follow up with 13L/Ha with an interval of 4 - 6 weeks or as needed. Difficult to manage areas will respond best by applying 6 - 8 L/Ha at 15 day intervals. For increased surface firmness, apply 20 - 25 L/Ha at 30 day intervals. Irrigate with sufficient water to deliver **OARS PS** to the soil profile, 3 mm or more is recommended.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA



COMPOSITION:

Hexahydroxy polyoxyalkylene polymers	85,0%
Amine salt of alkly substituted maleic acid	7,5%
Water	7,5%

Distributed by:

PBS150

Multi-Branched Long-Term Surfactant

- True 3D surfactant
- Reduces hydrophobic conditions
- Improves stress tolerance
- Reduces water use by at least 30%
- Provides uniformity in soil moisture



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PBS150

Multi-Branched Long-Term Surfactant

PBS150 is a long-term 3D surfactant utilizing a unique multi-branched surfactant molecular structure to address the source of performance loss – biodegradation of the surfactant molecule by soil microbes. **PBS150** sustains a longer uniform soil moisture profile and can restore the uniform movement of water into and through the profile. When used in accordance with product directions, **PBS150** is easy to use, is not harmful to plants and can be applied at anytime of the year to avoid the detrimental impact of water repellency stress and localized dry spots.

PRODUCT DETAILS

- Reduces hydrophobic conditions on a sustainable basis
- Encourages a pattern of hydration and re-hydration that improves the amount of available water in the soil profile to meet the metabolic demands of the plant
- Restores the uniform movement of water into and through the soil matrix
- Improves stress tolerance
- Reduces water use up to 30%

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
Apply 16 - 25 L/Ha. Reapply after 150 days from last treatment, or as needed, if climatic conditions still exist for the formation of water repellency conditions.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA



COMPOSITION:

Active Ingredient:
Octahydroxy polyoxyalklene
polymers 100%

Distributed by:

PBS150 Granular

Multi-Branched Long-Term Soil Surfactant

- True 3D surfactant
- Reduces hydrophobic conditions
- Improves stress tolerance
- Reduces water use up to 30%
- Provides uniformity in soil moisture



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PBS150 Granular

Multi-Branched Long-Term Soil Surfactant

PBS150 Granular is a long-term granular surfactant utilizing a unique multi-branched surfactant molecular structure to address the source of performance loss – biodegradation of the surfactant molecule by soil microbes. This increased performance can reduce hydrophobic conditions on a sustainable basis for up to 150 days. **PBS150** Granular can also restore the uniform movement of water into and through the soil profile. When used in accordance with product directions, **PBS150** Granular is easy to use, is not harmful to plants and can be applied at anytime of the year to avoid the detrimental impact of water repellency stress and localized dry spots. **PBS150** Granular is safe to plants when used as recommended.

PRODUCT DETAILS

- Reduces hydrophobic conditions on a sustainable basis
- Encourages a pattern of hydration and re-hydration that improves the amount of available water in the soil profile to meet the metabolic demands of the plant
- Restores the uniform movement of water into and through the soil matrix
- Improves stress tolerance
- Reduces water use up to 30%
- Longevity up to 5 months
- True 3D surfactant

DIRECTIONS FOR USE

PBS150 Granular at 160 - 240 KG / Ha at 6 - 10 weeks interval.
160 KG of **PBS150** Granular equals 10L of PBS150 Liquid.

Available in bags of 25 kg
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands



COMPOSITION:

Active Ingredient:
Octahydroxy polyoxyalklene
polymers 6.25%

Inert Ingredient:
Porous ceramic carrier 93.75%

Distributed by:

Aquifer

30 to 45 Day Hydrating Surfactant

- Omni directional hydrating surfactant
- Provides unique hydration pattern
- Reduces localized dry spots



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Aquifer

30 to 45 Day Hydrator

Aquifer Liquid Surfactant has been designed to be the first choice when choosing a surfactant. **Aquifer** has a unique characteristic of producing downward and lateral movement of water (omni directional), which provides a uniform moisture profile throughout the soil structure for up to 45 days. This allows not only water but also nutrients to be distributed evenly through the root zone. The end result is less summer stress, reduced wilt, less localized dry spots, improved rewetting capability and improved plant performance.

Aquifer is a non-ionic and environmentally safe formulation of soil surfactants that will not burn and does not have to be watered direct in after application. **Aquifer** is ideal for dry, compacted and hydrophobic soils and has been designed to work in conjunction with a good water management program, injected through either irrigation systems and/or tank mixed for spray application.

PRODUCT DETAILS

- Reduces localized dry spots
- Reduces wilt and summer stress
- Increases water retention
- Uniform moisture soil profile
- Will not burn

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
Apply 13 - 16 L/Ha at 30 to 45 day intervals. Irrigate with sufficient water to deliver **Aquifer** to the soil profile, 3MM or more is recommended. Reapply after 120 days from last treatment, or as needed, if climatic conditions still exist for the formation of water repellency conditions, for improved plant health.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA



COMPOSITION:

Active Ingredient:
Propoxylated polyethylene
glycols..... 99%

Distributed by:

Aqua Aid

15 to 30 Day Penetrant

- **Most cost-effective wetting agent**
- **Reduces water tension**
- **Increases nutrient uptake**
- **Increases penetration**



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Aqua Aid

15 to 30 Day Penetrant

Aqua Aid Liquid Penetrant is formulated with the highest quality cosmetic grade non-ionic surfactants and wetting agents. This unique water base formulation of surfactants and wetting agents allows application any time of the year with no phytotoxicity. **Aqua Aid** Penetrant provides a uniform soil moisture profile by modifying the water surface tension. This can reduce the required amount of irrigation and rain water by as much as 30%. The end result is less hand watering, less maintenance expense and a healthier plant.

PRODUCT DETAILS

- Cost effective
- Reduces water tension
- Reduces water usage
- Increases nutrient uptake
- Increases water penetration
- Helps leach harmful salts
- Compatible with most tank sprays

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
For tank application, mix 6 - 13 L/Ha. Apply 2 applications the first month at 15 day interval. Repeat with 6 - 13 L/Ha at 30 day intervals throughout the growing season.

For injection application, inject 3 - 10 L/Ha. Apply 2 applications the first month at 15 day intervals. Repeat with 3 - 5 L/Ha at 30 day intervals throughout the growing season.

Available in packaging of 20L and 208L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA



COMPOSITION:

Non-ionic polyols 19%
Inert ingredients.....81%

Distributed by:

FWY-ISP

Fairway injectable soil penetrant

- Biodegradable soil penetrant
- Designed specifically for injection
- Increases Nutrient efficiency



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COMPOSITION:

Active Ingredient:
Non-ionic polyols 14%

FWY-ISP

Fairway Injectable Soil Penetrant

FWY-ISP is a cost effective formulation of soil wetting agents designed to enhance the penetration and infiltration of applied water through irrigation systems. **FWY-ISP** is designed to treat water repellent areas and large brown out areas in fairways and/or mounds, as well as, hard to drain areas. **FWY-ISP** can also be incorporated into nutrient mixes to allow for more efficient delivery of applied nutrients.

FWY-ISP is compatible with all conventional irrigation systems or conventional ground spray equipment and is effective in irrigation systems at concentrations as low as one part per 200,000. **FWY-ISP** is non-ionic, non-burning and non-toxic to all types of turf grasses.

PRODUCT DETAILS

- Increases soil moisture and softens seed cot for better germination
- Uniform moisture and nutrient coverage
- Increases water infiltration and penetration
- Increases nutrient efficiency
- Reduces run off and evaporation of applied water and nutrients

DIRECTIONS FOR USE

Golf, Sports & Lawn Turf
Irrigation Injection; apply 2,3 to 4,7 L/Ha through the irrigation system monthly or as needed. Fertigation Injection; mix proportionately to liquid nutrients to apply 2,3 to 4,7 L/Ha per month or as needed. Overseeding; apply 4,7 L/Ha one week prior to overseeding. Immediately follow overseeding with a second application at 4,7 L/Ha.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

COUNTRY OF ORIGIN: USA

Distributed by:

the PROPORTIONER SYSTEM

A Simple, No Mixing Method of Applying Aqua-Aid Products

The PROportioner System is designed specifically for use on all types of turf, perennials, annuals, vegetables and ornamental plantings.

- Golf Courses
- Nurseries
- Greenhouses
- Hydro seeding
- Transplanting
- Athletic Fields
- Landscape Planting
- Cemeteries
- Home Gardens
- Home Lawns



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the PROPORTIONER SYSTEM

PELLET APPLICATOR



PROportioner system

A convenient system with no chemical mixing for utilizing Aqua Aid Products that is as easy as hand watering. Five Pellet formulations that are designed to make hand watering more effective and longer lasting. Aqua Aid Pellets are non-toxic to all types of turf, annuals, perennials or ornamental plants.

Aquifer® PELLETS

THE HYDRATING AND REWETTING PELLETT

- 100% active ingredients
- Manages localized dry spots
- Reduces hand watering
- Long lasting soil penetrant
- Increases water retention
- Provides uniform wetting

Aqua-Root® PELLETS

THE HUMIC ACID NUTRIENT CHELATION PELLETT

- 100% active ingredients
- Chelates and translocates nutrients
- High cation exchange capacity
- Formulated with humic acid

OARS® PELLETS

THE LOCALIZED DRY SPOT / DRY PATCH PELLETT

- 100% active ingredients
- Reduces hand watering
- Manages the causes of water repellency and localized dry spots / dry patch
- Increases water infiltration
- Maximizes water availability

AQM® Tougher Turf PELLETS

THE ROOT PRODUCING ENHANCED KELP PELLETT

- 100% active ingredients
- Reduces hand watering
- Benefits of auxins & cytokinins
- Encourages maximum root growth
- Provides maximum root density
- Maximizes water availability

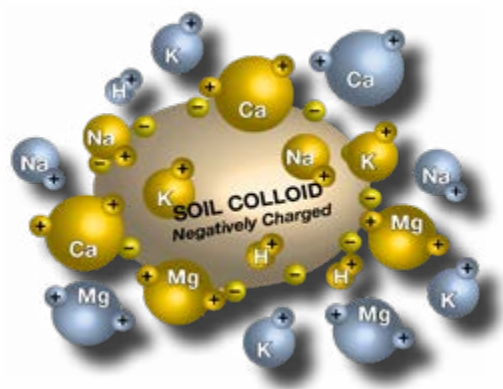
Distributed by:

Specialty fertiliser

In the product category Specialty Fertiliser, Aqua-Aid offers three calcium products. **Verdecal** is a limestone product based on calciumcarbonate. **Verdecal G** is a calciumsulfate better known as gypsum. Verdecal F is water soluble, designed for foliar applications.

The soil colloid has degrees of affinity for various basic cations. This bonding increases with larger atomic weight, ion size and amount of charge. The percentage saturation for each of the cations will usually be within the following ranges for optimum performance.

Element	Ideal percentage
Calcium (Ca)	60 - 70 %
Magnesium (Mg)	10 - 18 %
Potassium (K)	3 - 6 %
Sodium (Na)	2 - 5 %
Hydrogen (H)	10 - 15 %



The process of cationic exchange begins when water and basic cations (Ca, Mg, K, Na) meet the soil colloid. Based on the soil colloid's degree of cation affinity, Calcium (Ca) will attach to the soil colloid releasing the smaller cations. The released cations (Mg++, Na+, K+, H+) are solubilized in the soil solution and made available to the plant or removed from the soil profile. As hydrogen is released from the soil colloid into the soil solution, acidity is reduced and pH is raised.

Exchangeable cations are those absorbed on the colloid. Water soluble cations are those ionized in the soil solution. CEC is determined by the number of negative sights on the colloids.

levels or to maintain the CEC on the correct levels. **Verdecal** and **Verdecal G** are capable of making the calcium readily available for the plant, independent research has shown significant increases in the calcium levels in the soil and inside the plant. Results show an increase in the plant after just 9 days.

The reason why the calcium in both Verdecal products is so quickly available is because of the secret ingredient: thCa. This is a combination of plant extracts which are formed into trihydroxycarboxylic acid.



This acid oxidizes the calcium molecules in the Verdecal in order to make it available to the plant and soil. The thCa also oxidizes currently unavailable Ca in the soil, therefore adjusting the CEC even more. The calcium will be available over a longer period of time.

- The value of thCa
- Allows you to apply 1/4 the product than typical Gypsum or Limestone products.
 - Makes Calcium available NOW, not 2 to 3 years from now.
 - Goes into the soil to make bound-up, unavailable Calcium available to the plant.

The formulation of both **Verdecal G** and **Verdecal** have very high concentrations of readily available calcium. Due to the combination with the thCa and a low dose of a polyol wetting agent the application rate for the Verdecal products is very low compared to conventional calcium products. Conventional calcium products have application rates ranging from 1.000 to 2.000 kg per hectare.

The normal maintenance rate for Verdecal (G) is only 250 kg per hectare. If there is a need to correct the CEC or pH the Verdecal (G) is used at a 500 kg per hectare rate.

The composition of **Verdecal G** is 95 % calciumsulfate, regular **Verdecal** is 95 % calciumcarbonate. Both formulations also contain a 1 % Aqua-Aid polyol wetting agent. This wetting agent attributes to the high solubility of the product. After application the product needs an irrigation cycle, the Verdecal product will dissolve directly and become available for plant and soil.



Verdecal (G)



Classic calcium product

Independent research has shown the superior solubility of the Verdecal products in comparison with a regular greens grade calcium product.

Verdecal G and **Verdecal** are available in two granular sizes, greens grade SGN 85 and coarse grade SGN 185.

Verdecal F is a water soluble enhanced calcium product that can be applied as a foliar product on turfgrass and other crops. **Verdecal F** contains plant essential Calcium, Magnesium and micro nutrients. A foliar application will strengthen the plant and increase its resistance against diseases and pests.

VerdeCal G

Gypsum enhanced with thCa™

- Leaches excessive amounts of Sodium (Na) and Magnesium (Mg)
- Conditions the soil, making fertilizer applications more effective
- Supplies Calcium without raising pH



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VerdeCal G

Gypsum enhanced with thCa™

Calcium Sulfate (gypsum) is combined with thCa™, an organic complexing agent. thCa™ makes the Calcium (Ca) in gypsum more readily available for soil or plant use without effecting or raising pH.

PRODUCT DETAILS

- 250 kg will yield results equivalent to 1000 kg of typical gypsum
- Leaches excessive amounts of Sodium (Na) and Magnesium (Mg) from soil colloids
- Supplies Calcium (Ca) without raising pH
- Helps loosen compacted, heavy clay soils
- Supplies plant available Sulfur (S) in the sulfate form
- Improves soil aeration and water percolation
- Ideal for turf, shrubs and flowers
- Quicker response at lower rates. Requires 1/4th the rate of standard gypsum per application

DIRECTIONS FOR USE

For continued optimal growing conditions, apply **VerdeCal G** at 250 kg/Ha monthly through the growing season, or as needed. Soil test recommendations should be followed.

To correct high sodium or magnesium levels or to loosen clay soils, apply VerdeCal G at 5 kg per 100 m² or 500 kg/Ha once or twice per growing season, or as needed. To correct high sodium levels on Greens and Tees or when using effluent water, apply **VerdeCal G** at 500 kg/Ha every month during the growing season.

Available in grain size Greens (SGN 85) and Coarse (SGN185)
Available in bags of 23 kg and 455 kg
Please check availability with your distributor

COUNTRY OF ORIGIN: USA

VERDE-CAL® G

COMPOSITION:

Calcium Sulfate Dihydrate (CaSo4*2H2O)...95%
Calcium (Ca).....22,5%
Sulfur (S).....19,0%

Distributed by:

VerdeCal

Enhanced calcitic limestone

- Provides available calcium
- Improves soil structure
- Supplies optimal calcium levels to the soil and plant
- Quicker soil and plant response with lower rates than traditional calcium applications



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VERDE-CAL

COMPOSITION:

Calcium Carbonate (CaCO₃).....95,0%
Calcium (Ca).....37,0%
Magnesium(Mg).....0,6%

VerdeCal

Enhanced calcitic limestone

Calcitic limestone combined with thCa™, an organic complexing agent, converts insoluble calcium compounds to soluble and available calcium. This allows for greater delivery of calcium to the exchange sites on the soil colloid. **VerdeCal** contains Aqua-Aid penetrant which synergizes with thCa™, providing uniform nutrient movement into the entire soil profile.

PRODUCT DETAILS

- 250 kg will yield results equivalent to 1.000 kg of typical lime
- Reduces hydrogen, sodium and chlorine in the plant and soil
- Improves germination, stimulates root growth, and enhances micorbial activity
- Increases essential nutrient absorption and translocation
- Improves soil structure (flocculation, water infiltration)
- Supplies optimal calcium levels to plant cells to strengthen the plant's resistance to disease
- Balances the Ca/N ratio in the plant
- Quicker response at lower rates
- Requires 1/4 the rate of standard lime per application

DIRECTIONS FOR USE

To maintain optimum pH and growing conditions, apply **VerdeCal** at 250 kg/Ha at least twice per growing season or as needed. Soil test recommendations should be used to determine liming needs.

To adjust pH, apply **VerdeCal** at 500 kg/Ha. In most soils this will raise the soil pH up to one full point. Retest and if needed, reapply at the pH adjustment rate.

Available in granule size Greens (SGN 85) and Coarse (SGN185)
Available in bags of 23 kg and 455 kg
Please check availability with your distributor

COUNTRY OF ORIGIN: USA

Distributed by:

VerdeCal F

Enhanced foliar Calcium

- Provides Ca and trace elements via the leaf
- Increased resistance to diseases and pests
- Easy and very effective foliar application
- Improves chlorophyll production

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VerdeCal F

Enhanced foliar Calcium

VerdeCal F is a water soluble enhanced calcium product that can be applied as a foliar product on sports turf and many other crops. **VerdeCal F** is ideally used as a product for plant protection and increased cell wall formation. **Verdecal F** contains plant essential nutrients like Magnesium, Calcium and trace elements such as Fe, Mn, Zn and Cu.

PRODUCT DETAILS

- Promotes the health and sustainability of the grass plant
- Improves chlorophyll production
- Increases drought resistance because of enhanced root mass development
- **VerdeCal F** is a 100 % natural product
- Contains important trace elements
- Supports a large number of metabolic processes
- Other foliar applied fertilizers become more efficient
- Strengthens the cell walls

DIRECTIONS FOR USE

For sports turf application use 1,5 - 2 Kg / Ha in 300 L water per Ha per application. Apply in 14 day intervals. After each application, let the product dry for 3 - 4 hours to allow absorption through the leaves. Do not switch off the stirring mechanism during transport to the field and during the spraying process.

When used on soils with low organic matter and/or low natural mineral content in the soil, more frequent application and/or higher application rates per Ha are recommended. For specific applications, consult your distributor for more information.

Water soluble powder. Available in 3 kg boxes, larger packaging available upon request. Please check availability with your distributor.

VERDE-CAL F

COMPOSITION:

Calcium Oxide (CaO).....	52,0%
Magnesium Oxide (MgO).....	6,0%
Trace elements (Fe, Mn, Zn, Cu).....	0,1 - 0,2 %
Neutralizing Value.....	55

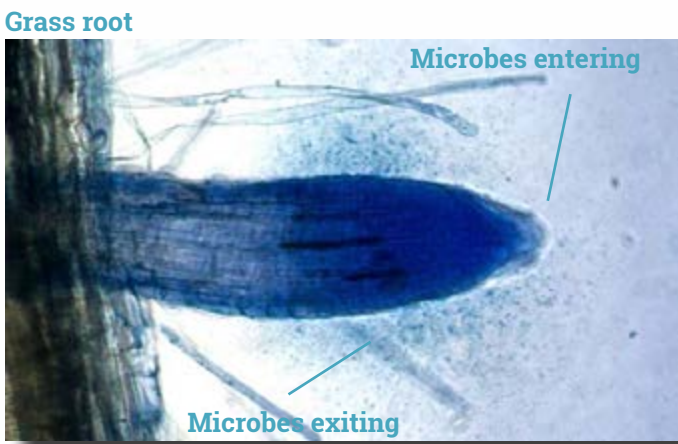
Distributed by:

Biostimulants

Aqua-Aid offers a wide range of biostimulants and UV-B protection products. All these products are based on natural ingredients and are safe to use on all professional turf types. All products are designed and manufactured to solve various issues occurring in the professional turf market. This will include improved growing conditions and protection against biotic- and abiotic attacks. Next to this Aqua-Aid has developed two products in order to defend the turf grass against damaging UV and infrared radiation.

Wormpower is an enhanced vermicompost produced by red wiggler worms. The product is a clear liquid extract which contains over 1.400 different DNA profiles of latent state soil microbes.

Once these microbes are applied to the soil the microbes will strengthen the soil surrounding the plant's root zone. The microbes also have a nutrient transportation function; the microbes will enter the meristem of the roots carrying nutrients for the plant. After leaving the nutrients behind, the microbes exit the plant root thru the root hairs.



This ongoing process has a positive effect on the soil and plant health. The positive effects of Wormpower include; increased root mass, thatch reduction, conversion of anaerobic soils, defensibility against phytium attacks and increased yields. All these claims on the beneficial effects of Wormpower have been independently researched.

Aqua-Boost has been developed after many years of in-depth research and consultation with both professional grounds staff and greenkeepers. As a result, we have produced a unique composition of natural plant extracts, denaturized extracts and specially selected organic compounds which has resulted in Aqua-Boost.

Root development with Aqua-Boost



The formulation contains high quality carbohydrates, L-amino acids, oligopeptides, polypeptides, alginates, mannitol, oligosaccharides and polysaccharides, yeast extract, natural organic acids and betaines. This diverse blend of high quality ingredients works by activating specific physiological processes within plants.

This results in the plant being far better equipped to withstand any attack and can use more energy on growing, developing a much denser sward, a significantly greater root mass and visibly higher chlorophyll levels.

BioFlav-X is developed and manufactured in order to control a large number of pests, pathogens, molds and viruses. The formula is developed not to kill the pests but to deter and discourage them from attacking the plant. The product is based on a citric acid extract, this is based on bioflavonoids, an ingredient which is also found in various Vitamine C supplements. These bioflavonoids will generate an increase in the plant immune system making the plant more defensible against various attacks.

Field trials have shown parasitic nematodes moving away from the plant's rhizosphere.

Aqua-Grow is a non-phytotoxic plant based biostimulant, the plant extract is a Quillaja Saponin extract sourced in Chile. The combination of the Quillaja Saponin and a low NPK analysis promotes the overall growth of the crop and supports the propagation of beneficial micro-organisms. This existing soil life will give the plant and soil a better defense system against biotic attacks. A more vital plant has a better overall defense system.

Extensive field testing in various professional turf surfaces have shown the decrease of biotic attacks from severe attacks to hardly any attacks after just a few applications. The pitch quality in all these situations went up significantly.

Quillaja plant



Biostimulants

OCEAN is a highly concentrated foliar algae product. Enhanced with plant extracts and natural co-enzymes. OCEAN is based on the scientifically proven results of the *Ascophyllum Nodosum* seaweed extract. *Ascophyllum Nodosum* plays an important role in regulating the biosynthesis in the plant, especially the hormones cytokinin and auxin. This will improve the plant quality, growth and yield. The product contains plant specific proteins and fatty acids that contribute to a more vital crop, reducing the amount of chemical applications needed.

Due to the high concentration of OCEAN, the applications are low and highly tank mixable with other products.

Liquid TS is a new generation of liquid organic fertilizer which will act as a soil conditioner. The formulation has a low nutrient analysis made completely from tea seed meal and is designed to refine the soil in times of stress. The application of the product is at the end of the summer and during the autumn. Due to the low nutrient analysis the product can also be used during the winter period when the temperatures still allow the application. The benefits of Liquid TS is the increase in resistance against seasonal stress and the improved consistency of the playing surface.

The product is suitable for all types of turf including golf greens, fairways and sports pitches. Liquid TS is a liquid product which will condition the playing surface for a longer period of time.

Aqua-Sil is a fermented Silicon product developed by Aqua-Aid. Recent research evidence has proven that systematic applications of silicon-based products on turf grass have a beneficial contribution to grass growth and development. Especially during periods of stress or unfavorable growing conditions. Silicon is one of the most abundant mineral elements in the soil. Although there are high levels of silicon in the soil, the plant is unable to extract the silicon because it is highly insoluble. Silicon is most readily absorbed by plants as a orthosilicic acid (H_4SiO_4). The silicon source of Aqua-Sil consists of orthosilicic acid in a fermented form. The formulation contains 2% silicon, a high percentage for a very insoluble element.

The plant will absorb the silicon from the applied Aqua-Sil, the accumulation of silicon in epidermal cells and cell walls result in the development of more erect leaf blades and a thicker, stronger cuticle layer which limits transpiration and water loss. Due to this increase in leaf strength an increase in traffic tolerance has been observed in different trials.

Aqua-Sil has a beneficial effect on the suppression of pathogen infections, the silicon creates a physical barrier that reduces the ability of fungal hyphae to penetrate into the leaf tissue.

Aqua-Aid offers a new innovative UV-B protection product, **Solar**.

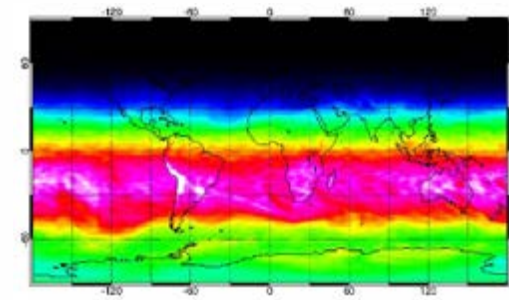
Solar is the latest UV-B protection product from Aqua-Aid. This product is solely based on a high level of natural titanium dioxide at 30%. Providing complete protection from harmful radiation such as UV-B and infrared. Solar complies with all current and near future regulations and is completely MRL free.

The effect of **Solar** on professional turf grass is that all damaging ultraviolet and visible wavelengths will be filtered and absorbed out. The grass will be protected from harmful UV-B and solar radiation.

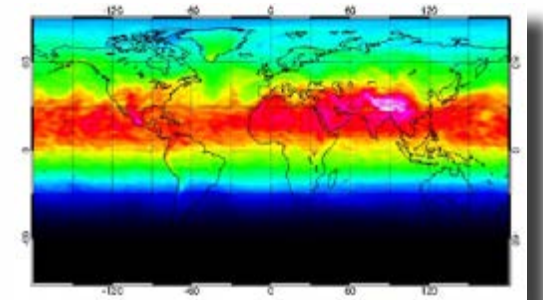
Another benefit of **Solar** is the fact the plant will transpire less, therefore reducing the amount of water used.

UV-B radiation is a damaging factor which is present everywhere in the world. These pictures show the UV-B radiation on two random dates during the summer and winter. Aqua-Aid advises to use these kinds of datasets in order to determine the application rate of both UV-B protection products.

Northern hemisphere July 6th 2019



Southern hemisphere January 6th 2019



Worm Power

Stronger, Healthier Turf From the Soil Up

- 100% organic product
- Strengthens soil surrounding the plant's root zone
- OMRI & CDFA certified



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WORM POWER
— TURF —

COMPOSITION:

Total Nitrogen (N)	0,002%
Available Phosphate (P2O5)	0,001%
Soluble Potash (K2O)	0,024%
Calcium	0,003%
Magnesium (Mg)	0,001%
Sulfur (S)	0,003%

Worm Power

Stronger, healthier turf from the soil up

Worm Power is an Organic Liquid Extract of 100% organic castings and worm-worked material that strengthens the chemical, physical and biological aspects of the soil around the plant's root zone. OMRI listed and CDFA certified, **Worm Power** improves soil health and the plant's health, vigor and strength. While turf practices and seasonal variables always vary, healthy soil is a universally vital element for healthy plants.

Through ten years of trials and research with top leading university's, **Worm Power** has consistently been shown to produce stronger, healthier, more vigorous plants and produce better crops with higher yields.

PRODUCT DETAILS

- Provides viable macro and micro-nutrients
- Increases water holding capacity of the soil
- Makes nutrient delivery more efficient over extended period
- Introduces an active microbial community to the soil
- Increases size, quality and yield

DIRECTIONS FOR USE

Turf Application; apply as a soil spray at 25 L/Ha at 15 day intervals or 50 L/Ha at 30 day intervals. For best results, **Worm Power** requires season long application programmes.

In Soilless Media; apply 13,5 ml per L of growing container size every week throughout the growing season.

In Mineral Soil Media; apply 8 ml per L of growing container size every week throughout the growing season. If plantings are in the ground, estimate the volume size of the root ball in liters and apply accordingly.

Available in packaging of 20L, 208L and 1000L
Please check availability with your distributor

Distributed by:

AQUA-BOOST

Plant Defense Enhancer

- Boosts the plants immune system
- Increases plant own hormone production
- Feeds microorganisms and stimulates nutrients exchange
- Works great with Worm Power



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AQUA  **BOOST**

COMPOSITION:

Total Nitrogen (N).....0,4%
Available Phosphate (P2O5).....0,2%
Soluble Potash (K2O)..... 5%
Magnesium (Mg)..... 0,15%

AQUA-BOOST

Plant Defense Enhancer

AQUA-BOOST is a liquid, non- phytotoxic blend of natural elements, created to strengthen the plants immune system. **AQUA-BOOST** supports the plant internal hormone production whilst under both biotic and abiotic stress. The natural plant extracts and denaturized extracts in **AQUA-BOOST** support the overall strength and in turn enhances its own defence mechanism. Consequently, the plant is naturally stronger and better prepared to fight off attacks. It will also have more energy to grow, develop visibly higher chlorophyll levels and significantly improve microbial populations. The nutrient exchange in the root zone will increase, creating more root mass and a denser sward. **AQUA-BOOST** works great with Worm Power as it promotes the growth of microbial populations in the growing media.

PRODUCT DETAILS

- Boosts the plants immune system
- Increases plant own hormone production
- Feeds microorganisms and stimulates nutrients exchange
- Works great with Worm Power
- Increases turf density and quality
- Improves decomposition of dynamic organic mass
- Contains a low EC level and is therefore not harmful to the plant

DIRECTIONS FOR USE

Apply 12,5 – 17,5 L/Ha in 500 L water on a 4 week interval during the growing season – after renovation/reseeding, apply twice with a two week interval. **AQUA-BOOST** needs to be watered in with 3 MM irrigation within 8 hours after application.

Available in packages of 10L and 1.000L
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands

Distributed by:

AQUA-GROW

For a stronger root system and plant-vitality

- Stimulates growth of new plants
- Strengthens existing root systems
- Improves plant defense system
- Based on natural plant extracts



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AQUA-GROW

For a stronger root system and plant-vitality

AQUA-GROW is a liquid, non-phytotoxic product based on natural plant extracts that stimulates growth of new plant roots and strengthens the existing root system. **AQUA-GROW** consists of 100% natural plant-feeding substances and promotes the overall growth of the crop and supports the propagation of beneficial micro-organisms. **AQUA-GROW** ensures a more vital crop and improved soil life. A more vital plant has a better overall defense system.

PRODUCT DETAILS

- Stimulates root mass development
- Improves soil microbial life
- Improves plant defense system
- Delays formation of resistant strains
- Beneficial throughout complete vegetative cycle
- Environmental friendly
- Improves qualitative and quantitative production characteristics

DIRECTIONS FOR USE

Total 20 - 60 L/Ha, evenly distributed.
Distributed over multiple irrigation cycles.
(e.g. Ltr 20 + 20 + 20 / Ha)

Available in packaging of 10L
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands



COMPOSITION:

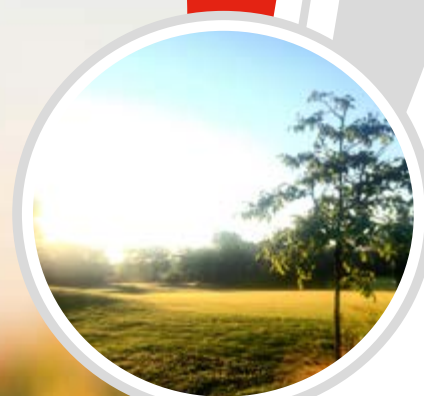
Total Nitrogen (N)	1%
Available Phosphate (P2O5)	1,5%
Soluble Potash (K2O)	 1,25%
Magnesium (Mg)	0,4%

Distributed by:

VitaPower-X

New generation of plant biostimulants

- Stimulates growth of new plants
- Alleviates symptoms of stress
- Improves plant defense system
- Biological alternative for flower bulb dipping
- Stimulates beneficial nematodes



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VitaPower-X

A natural solution to both abiotic and biotic attack

VitaPower-X is a liquid composition that boosts a plant's own defense system and alleviates the symptoms of stress and damage caused by an attack. The formula is centered around a citrus acid extract. This extract has been shown to be highly effective in the control of a large number of pests, pathogens, moulds and viruses.

VitaPower-X is not designed to kill the pests but to deter and discourage them from attacking the plant. Field trials have shown parasitic nematodes moving away from the plant's rhizosphere.

PRODUCT DETAILS

- Improves plants natural defense system
- Alleviates symptoms of stress and damage caused by an attack
- Does not kill but deters and discourages pests
- Environmental friendly
- Stimulates plant growth, health and productivity

DIRECTIONS FOR USE

Min 2 Ltr/Ha at weekly intervals. Can be used as plant and soil bio stimulant; Wash in soil applications with 2-5 MM irrigation direct after application (depending on soil type).

Flower bulb dipping in combination with 50% classic chemicals has shown effective results; for detailed application advise, please contact your distributor.

Available in packages of 1L and 10L
Please check availability with your distributor

COUNTRY OF ORIGIN : The Netherlands

VitaPower - X

COMPOSITION:

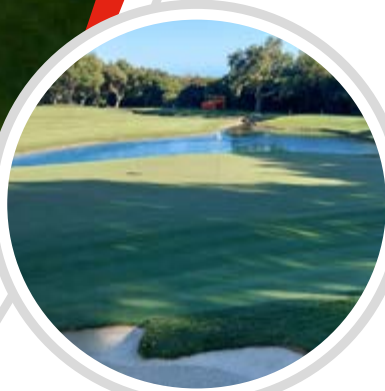
TotalNitrogen(N).....1,0%
AvailablePhosphate(P2O5).....1,0%
Soluble Potash (K2O).....1,0%
Dry Matter.....65,0%
Ph : 4,6

Distributed by:

OCEAN

Nano algae fertilizer

- **Highly concentrated Foliar Algae**
- **Activates formation of roots and shoots**
- **Great results with limited application**
- **Contains Ascophyllum Nodosum Algae**



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OCEAN

Nano Algae Fertilizer

OCEAN is a liquid product based on natural oceanic plant algae, enhanced with plant extracts and natural co-enzymes. **OCEAN** stimulates extra formation of roots and shoots allowing for more active and vital plants. **OCEAN** increases nutrient exchange and makes fertilizers work more effective. **OCEAN** contains plant specific proteins and fatty acids that contribute to a more vital crop, reducing the amount of chemical applications needed.

PRODUCT DETAILS

- Highly concentrated Algae product
- 100% Biological product
- Contains Ascophyllum Nodosum Algae
- Increases plant defense system

DIRECTIONS FOR USE

Sports Turf: apply 2 L/Ha in 300 – 600 L /Ha every 4 weeks.

In use as Co-Enzymes: 250 - 750 ml/Ha weekly

Soil: application through drip irrigation: 1 liter **OCEAN** per Ha every 2 weeks.

As Foliar/Spray: apply 2 liters of **OCEAN** per Ha in 300 - 600 Liters of water every 3-4 weeks.

Available in packages of 1L and 10L
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands



COMPOSITION:

Total Nitrogen (N).....0,4%
Available Phosphate (P2O5).....0,2%
Soluble Potash (K2O)......4%

Distributed by:

Liquid TS

New generation of organic fertilizer

- Stimulates growth of new plants
- Increases stress resistance
- Improves consistency of the playing surface



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Liquid TS

Organic liquid fertilizer derived from tea seed meal

Liquid TS is a special liquid soil conditioner with a low nutrient analysis, made from plant extracts designed to refine the soil. **Liquid TS** is suitable for all turfgrass areas. It can be used all year round, but for best results **Liquid TS** should be applied before rainfall or watered in after application.

PRODUCT DETAILS

- Improves root mass and increases nutrient uptake
- Increases plant tolerance to stress conditions
- Encourages faster grow-in and establishment of new grass seedlings
- Maintains plant count entering into a dormant period
- Acts as a bio stimulant, which will enhance microbial activity
- Can be applied to all types of turf
- Suitable for all types of soil

DIRECTIONS FOR USE

100 L/Ha, evenly applied over the turf. For best results, apply before rainfall or water it in with a minimum of 10 mm of water. Optimum results have been achieved when the soil is already saturated.

Available in packages of 20 L, 200 L and 1.000 L.
Please check availability with your distributor

COUNTRY OF ORIGIN: Belgium

Liquid TS

COMPOSITION:

Total Nitrogen (N) 2,0%
Available phosphate (P₂O₅) 0,0%
Soluble Potash (K₂O) 4,0%

Contains Tea Seed Saponins

Distributed by:

AQUA-Sil

Increase defensibility of plant and soil

- Increases quality of both plant and soil
- Increases stress resistance
- Boosts the crops yield
- Naturally fermented product



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AQUA-Sil

Increase defensibility of plant and soil

Silicon is an indispensable element in many biological processes. By using Silicon as a fertilizer, the quality of both the plant and the soil improves. **AQUA-Sil** is a fermented product which naturally releases (Ortho) Silicon, amongst natural and plant beneficial elements. These elements are readily absorbable for the plant because of active micro-organisms, this will strengthen both the soil and the plants health. A healthier plant has a higher resistance to physical stress, which increases the plants' productivity. Research has shown that when applying **AQUA-Sil**, the plant needs less water and is stronger. Analysis after application of **AQUA-Sil** also show an increase of chlorophyll in the plant.

PRODUCT DETAILS

- Increased quality of both soil and plant
- Increased resilience to physical stress
- Higher plant yield
- Increased nutrient uptake
- Reduced water use
- Increased level of chlorophyll production

DIRECTIONS FOR USE

Apply **AQUA-Sil** at 0,3 - 1L/Ha per week.

Available in packaging of 1L and 5L
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands

COMPOSITION:

Silicon 2,0%
Amino acids 6,0%
Proteine content 20,0%
Organic matter 30,0%

Distributed by:

SOLAR

Sun protection for plants

- Filters harmful UV and infrared lights
- Reduces evaporation and plant stress
- MRL free



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SOLAR

Sun protection for plants

SOLAR is a 100% natural product based on a blend of Titanium Dioxide and plant feeding extracts. **SOLAR** reduces the impact damage of extreme UV and infrared sunlight during summer heat conditions. **SOLAR** balances moisture behavior within the plant and increases stress tolerance. Titanium Dioxide is a natural product that scatters sunlight but allows enough light for the plant to grow of sunlight. **SOLAR** is MRL free and protects the plant against cell wall deformation. **SOLAR** reduces plant stress during summer conditions and reduces water consumption up to 30%. Leaving no residue, **SOLAR** is 100% safe for the environment.

PRODUCT DETAILS

- Filters harmful UV and infrared light
- Reduces organic pollution on the leaf
- Leaves enough useful light for the plant
- Forms a protection shield that offers resistance and promotes growth
- Mechanical resistance to pollution

DIRECTIONS FOR USE

Depending on crop / total leaf surface; for example on Turf:
Greens: 1L/Ha Weekly or Tees: Fairways 2 L/Ha Biweekly
Flowers/potatoes/bulbs: 1 - 2,5 L/Ha weekly during the growing season depending on leaf surface development and solar stress.

Available in packages of 10L
Please check availability with your distributor

COUNTRY OF ORIGIN: The Netherlands



COMPOSITION:

Total Nitrogen (N) 1,1
Available Phosphate (P2O5) 0,9
Soluble Potash (K2O) 2,0
Magnesium (Mg) 0,3

Content Titanmium Dioxide.....30%

Distributed by:

Tools

Aqua-Aid is an official dealer of the Spectrum Technologies Fieldscout soil moisture meters. Responsible irrigation management and reducing costs is possible by using the Fieldscout Soil Moisture Meters. The TDR-technology has proven itself for over 30 years as a very accurate meter for soil moisture measurements in a lot of soil types.

There are three meters available, the **TDR-150**, **TDR-250** and the **TDR-350**.

After years of loyal service the FieldScout TDR-100 Soil Moisture Meter has been succeeded by the FieldScout **TDR-150** Soil Moisture Meter. Without compromising the reliability, the new moisture meter has been improved in terms of performance and accuracy. Next to that the meter gained several new functionalities. The **TDR-150** meter measures the exact volumetric water content (VWC) in a percentage. Next to the VWC the **TDR-150** meter also measures the electroconductivity (EC) of the soil in mS/cm.

Every TDR can measure the VWC on several depths, in order to do this several measuring rods are available. The end-user can choose the depth according to the measuring needs. The following lengths are available: 3,8 cm, 7,5 cm, 12 cm and 20 cm.

It is possible to equip the meter with a GPS and Bluetooth application. This way you can link the soil measurements to GPS coordinates. With the Bluetooth function it is very easy to link the meter to every smartphone. In combination with the FieldScout Mobile App the measurements will be made visible in a colorful way.

The **TDR-250** is a simplified and portable ergonomic designed moisture meter.

The **TDR-350** is standard equipped with GPS and Bluetooth. This way you can link the soil measurements to GPS coordinates.

Almost all greenkeeping work is weather-dependent. But especially in times of changing climates, old weather rules or typical weather patterns at certain times of the year are no longer valid. The reality is that extreme weather conditions are becoming more and more common, putting a lot of stress on the grasses. By tracking different parameters like humidity, temperature, wind speed, precipitation and evapotranspiration one can take the necessary precautions. All these measurements are ideally performed with the **Watchdog 3250**.

TDR-350



Watchdog 3250



The **Fieldscout EC Meter** can test the salt content of water sources used for irrigation and tank mix solutions. EC is an important diagnostic indicator for identifying soil health issues.

The **SoilStik pH** meter from Spectrum is an easy to use and cost efficient pH meter. Manage pH for a healthier growing environment and better soil, water, disease, and nutrient management.

The primary objective for the development of the **TruFirm** is to improve championship-caliber playability by cultivating greens that are both firm and fast. By measuring the relationship between the compaction of the soil and the moisture level, greenkeepers are able to ensure healthy, aesthetically-pleasing greens that offer exceptional playability.

The **Penetrometer** is a simple tool measuring the degree of soil compaction at depths from 0 - 45 centimeters.

The **Turf Color Meter (TCM) 500 NDVI Meter** from Spectrum helps diagnose plant health based on colour. The meter will calculate the Normalized Difference Vegetation Index (NDVI) based on the color of the grass.

The **Hahn Spray Bug**, a walking spray system which combines precision application with ease of use and simple calibration. It allows you to spray your greens more accurately while keeping vehicles off tender turf. The system's nozzles are visible to the user during spraying, and the boom shroud eliminates drift while putting your spray material precisely where you want it. The Spray Bug is now wider, faster, comes with a larger tank, and is an effective method for micro-dosing nutrients.

Designed from the ground up to be compact, lightweight and gentle on turf but also rugged enough for commercial service. Wide slick soft rubber tires minimize turf marking. The Spray Bug also has a compact and efficient electric drivetrain and chassis design which eliminates all unnecessary weight. Turf friendly and provides maximum performance and productivity.

The spray process with the Spray Bug is better for operators and better for turf. Designed with a focus on reducing operator exposure to the spray and preventing tracking through spray. Because the Spray Bug is self propelled, the operator walks in front of the spray pattern and is not forced to walk through the spray as with other walk spray systems.

Also, since the tires are not tracking through the spray, a more precise and controlled spray process is possible.

Hahn Spray Bug



TDR 150/250/350

Fieldscout Soil Moisture Meters

Highly accurate soil moisture measurements of any soil condition



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Spectrum
Technologies, Inc.



TDR 150/250/350

Fieldscout Soil Moisture Meters

The Fieldscout **TDR 150/250/350** is a soil moisture meter that takes soil moisture readings at the press of a button. With variable rod length options, you can measure soil moisture at your ideal root zone. The Fieldscout **TDR 150/250/350** is the expanded and completely updated version of the **TDR 100/300**, it combines a compact display with an advanced soil moisture probe that is connected to each other via a 1.5 meter long cable. The **TDR 150/250/350** is made for convenient carrying. With new enhancements, the **TDR 150/250/350** provides significant improvements in performance and measurement accuracy for optimal soil conditions. The meters can be used in various applications, such as on sports fields and golf courses, horticulture, container and open ground areas, road construction and in public green areas.

PRODUCT DETAILS :

Features	TDR 150	TDR 250	TDR 350
Measure VWC %	✓	✓	✓
Displays EC + Surface Temp.	✓	✗	✓
Interchangeable soil probes	✓	✓	✓
Backlit Display	✓	✓	✓
T-handle	✗	✓	Telescoping
Infrared Temperature Sensor	Optional	✗	Optional
GPS / GNSS + Bluetooth	Optional	✗	✓
Carrying Case	✓	✗	✓
Fieldscout Mobile / SpecConnect	✓	✗	✓

All devices are equipped with a industry exclusive backlit display. Data is collected with USB flash drive. No PC interface needed.

The measuring probes of 3,8cm, 7,5cm, 12cm or 20cm are not supplied as standard, and need to be ordered separately.



Distributed by:

WATCHDOG 3250

Wireless ET Weather Station



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WATCHDOG 3250

Wireless 3250 ET Weather Station

The award-winning third generation of WatchDog Weather Stations offers integrated cellular modems that send essential turf data to the SpecConnect cloud. Use your PC or WatchDog Mobile app to view current conditions on your smartphone. Station set-up is easy, and configuration is simple with the WatchDog app.

The newly developed 3250 Wireless ET Weather Station is a mobile, fully integrated weather station. The station is solar powered and has a built-in modem, this means there are no power or network cables to attach - increasing the flexibility of the system.

With the SpecConnect cloud, you can easily view reports for degree-days, chill hours, disease and insect pressure, monthly weather reports, soil moisture trends and more.

Frost/temp alerts are sent to your smartphone so you can respond quickly and reduce turf damage. Now, you will have the real-time data you need to respond to changing weather conditions and make timely, smart decisions.

The Watchdog 3250 is the most elaborate version of the 3000 series weather stations. Next to all the actual measurements, it also performs a range of calculations, including the important ET (evapotranspiration) rate. These are all the measuring features of the 3250 Wireless ET Weather Station :

Features	3250	Range	Accuracy
Air Temperature	✓	-40 to 125 °C	+/- 0,3 °C
Relative Humidity	✓	0 to 100 %	+/- 2,0 % @ 25 °C
Rainfall	✓	0,254 mm resolution	+/- 2,0 % @ 5 cm / hr
Wind Speed	✓	0,1 to 322 km/h	+/- 3,0 km/h
Wind Direction	✓	1 to 359°, 1° increments	+/- 3,0°
Solar Radiation	✓	0 to 1500 W/m²	+/- 5,0 %
External ports	1		

Distributed by:

EC METER FIELDSCOUT

Direct Soil EC Meter

The Fieldscout EC Meter can test the salt content of water sources used for irrigation and tank mix solutions.



EC METER FIELDSCOUT

Direct Soil EC Meter

The Fieldscout EC Meter makes instant and accurate EC measurements. EC is an important diagnostic indicator for identifying soil health issues. High salt levels will cause toxicity, infiltration problems, a decrease in beneficial microorganisms and an ineffective nutrient uptake. With the Fieldscout EC meter it is possible to test the salt content of water sources used for irrigation and tank mix solutions.

PRODUCT DETAILS

- Professional grade meter - Patented
- No need to prepare samples - simply sample through the profile
- Range : 0 to 19,9 mS/cm (+/- 1 % accuracy)
- Patented paired sensor tip provides maximum soil-sensor contact and higher accuracy
- Automatic temperature compensation, long lasting and waterproof



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Spectrum[®]
Technologies, Inc.

FIELDSCOUT[®]

Distributed by:

PH METER FIELDSCOUT

SoilStik™ pH Meter

The SoilStik pH meter from Spectrum is an easy to use and cost efficient pH meter.



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Spectrum®
Technologies, Inc.



PH METER FIELDSCOUT

SoilStik™ pH Meter

The SoilStik pH meter from Spectrum is an easy to use and cost efficient pH meter. Manage pH for a healthier growing environment and better soil, water, disease, and nutrient management.

PRODUCT DETAILS

- Flat surface electrode measures pH in soil, semi-solids and liquids
- Memory records and recalls 15 sequentially tagged readings
- pH range : 0,00 to 14,00
- Accuracy : +/- 0,01 pH
- 1- or 2-point calibration: automatically recognizes buffer solutions
- RENEW indicator tells you when it's time to replace your electrode - eliminatinig guesswork
- CAL alert tells you it's time to recalibrate to ensure accuracy

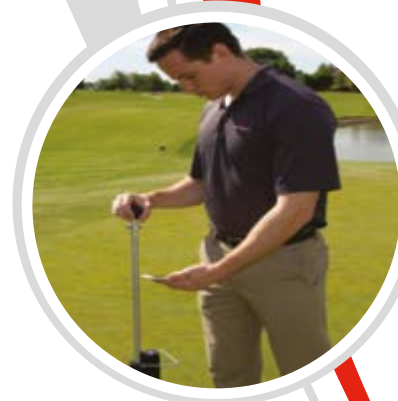
To Measure Is To Know

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TRUFIRM FIELDSCOUT

Firmness Meter

Based on technology developed by the USGA, the FieldScout TruFirm offers a quick, easy and affordable method to measure the firmness of turf and bunker sands.



TRUFIRM FIELDSCOUT

Firmness Meter

The primary objective for the development of the TruFirm is to improve championship-caliber playability by cultivating greens that are both firm and fast. By measuring the relationship between the compaction of the soil and the moisture level, greenkeepers are able to ensure healthy, aesthetically-pleasing greens that offer exceptional playability. Data acquired from the device allows golf course superintendents and sports turf managers the ability to take appropriate actions to reach the desired firmness of golf course greens, fairways, and bunkers, as well as other playing surfaces. The patented TruFirm system utilizes a hemisphere-shaped impact hammer that mimics the shape of a golf ball to better simulate golf ball impacts. The mass is dropped from a consistent height and the maximum turf penetration value is recorded and correlated to the surface firmness – the lower the penetration value, the firmer the turf.

PRODUCT DETAILS

- Evaluate trends and monitor sections of turf relative to one another
- Easy-to-use design provides instantaneous measurements
- Logged data can be sent via Bluetooth to a mobile/handheld Android device for plotting specific greens or other surfaces
- Lightweight design results in an easily portable device without the need for extra parts
- Includes soft-sided carrying case

To Measure Is To Know

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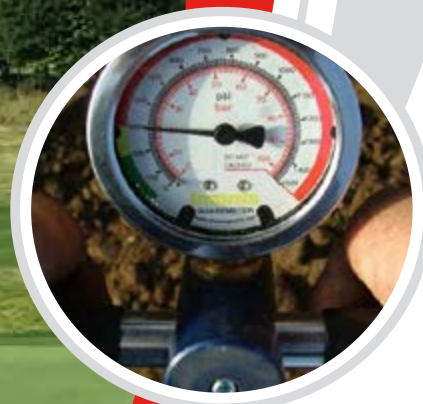
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PENETROMETER

Soil Compaction Meter

This simple tool allows you to observe the degree of soil compaction at depths from 0-18 inches (0-45 centimeters).



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PENETROMETER

Soil Compaction Meter

The Imants Penetrometer is a compaction meter. Its purpose is to locate compaction in soil/turf so the correct measurements can be taken to eliminate the compaction. As a rule of thumb, compaction greater than 20 bar (285psi) needs to be avoided as roots will have great difficulty to penetrate the soil. In addition, lack of air is also a great problem as roots need oxygen to get nutrients available to the plant. The Penetrometer helps to monitor the rootzone.

The penetrometer consists of removal tapered-tip cone, a rod with depth marks at 3" (7.5cm) intervals, a machined precision-bore pressure chamber, and a 0-1000 Psi (0-60 bar) pressure gauge. The diameter of the bore / piston and tip cone base are essentially equal. This means that the pressure reading of the meter is approximately the same as the pressure required at the tip to force the rod through the soil.

REMINDER: Soil must be moist in order to obtain meaningful readings.

DIRECTIONS FOR USE

The 0 – 1000 psi / 0 – 60 bar gauge allows you to monitor highly compacted soils and then measure the improvements as you modify farming practices. Tillage techniques and timing may be altered to see if relative improvement occurs. Soil wetting agents may also be evaluated for their effectiveness.

The depth marks along the rod allow you to determine the penetration resistance at various depths. By watching the gauge as you pass each mark, you can see the relative compaction at each depth.

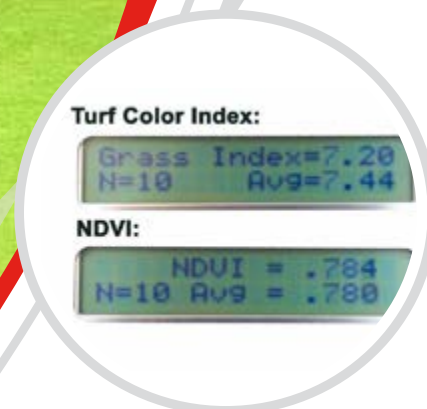
imants

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TCM 500 NDVI FIELDSCOUT

Turf Colour Meter

The TCM 500 NDVI Meter from
Spectrum helps diagnose plant
health based on colour.



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TCM 500 NDVI FIELDSCOUT

Turf Colour Meter

Turfgrass quality is visually evaluated by human assessors based on a scale of 1 (dead grass) to 9 (perfect grass) in the current assessment method. This evaluation practice has several disadvantages and therefore, there is the need for a better evaluation technique. Individual biases are inevitable and lead to some level of inconsistency, even among the most highly trained observers. Research from Clemson University, "Predicting Visual Quality Ratings of Turfgrass Research Plots Using Spectral Reflectance" (Muharrem, Keskin, Roy B. Dodd, Young J. Han, Ahmad Khalilian - Paper # 031114, ASAE 2003 Annual Meeting) is the basis for the technology used in this meter.

PRODUCT DETAILS

- Measures reflected light from approximately a 3 inch (7.6 cm) diameter section of turfgrass
- Uses an internal light source to negate the effect of sunny versus cloudy conditions
- Measures reflectance in the red (660 nm) and near infrared (850 nm) spectral bands
- Displays result as NDVI, percent reflectance, or as a user-adjustable grass index from 1 to 9
- Equipped with internal data logger and RS-232 port
- Records 3,250 measurements (1,350 with added GPS/DGPS option)
- Configure and download meter with FieldScout® software and USB-to-3.5mm-Stereo-Plug Adaptor (Item 3661U. (included)
- Compatible with SpecConnect
- Includes hard carrying case, batteries, and TCM 500 T-Handle (item 2975H)



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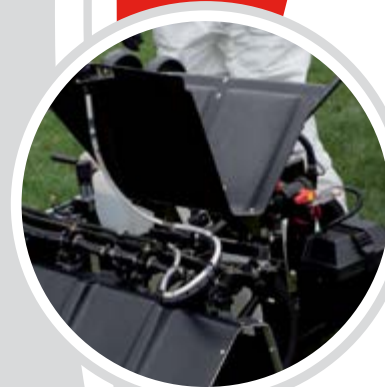
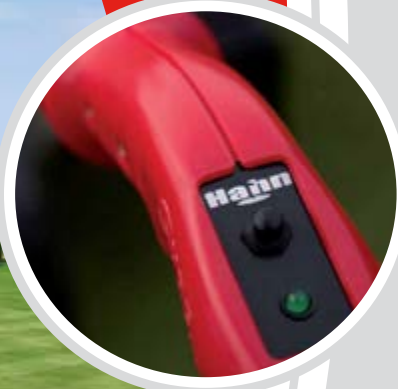
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HAHN SPRAY BUG

Be kind to your greens

Introducing the Spray Bug, a
Self-Propelled user friendly full
electrical sprayer.

For low impact operation on
greens and hard to reach areas.



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Hahn
SPRAY
BUG
PRECISION DETAIL SPRAYER

HAHN SPRAY BUG

Be kind to your greens

Greens require personal attention and precise application control. Current walking booms are labor-intensive and difficult to use and calibrate. The Spray Bug changes all of that!

The **Hahn Spray Bug** is an electric powered, self-propelled and covered 2m wide boom system with a self-contained 56L spray tank and complete spray system. The operator walks in front of the boom system and not through the spray, and the wheels do not track through the application. Nozzles are visible to the operator while spraying. Because the **Hahn Spray Bug** is self-contained, a hose with reel is not needed. The constant forward speed combined with accurate pump volume guarantee precise application and avoid over application. A foam applicator is offered optional. The tank can be easily recharged from a larger sprayer or utility vehicle with the included, dry lock transfer system.

PRODUCT DETAILS:

- Weight: Empty: 63 kg Full: 118 kg
- Width Working Spray width: 200 cm
Width sprayer unfolded: 275 cm Shroud
Max width w/Shroud Stored: 145 cm (transport)
- Nozzle Height: 35 - 40 cm adjustable
- Tank volume: 56 l
- Pump capacity: Diaphragm, 19 l/min
- Speed: 4,2 km/hr, fixed with speed control
- Capacity per battery set 1,1 Ha on average
- Application (dep on nozzle): between 150 and 1.070 l/ha
- Options: Transport trailer
Foam Marker Trailer hitch
Extra battery kit

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GANDY DROP SPREADERS

Make accurate, professional applications of dry free-flowing materials

- Available in 36" and 42"
- Durable powder coat finish for long life
- Pneumatic wheels
- Uniform application



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GANDY DROP SPREADERS

Make accurate, professional applications

The Gandy Drop Spreaders are available in two different versions; the 36" and 42" spreaders.

The **36" drop spreader** with push-handle and 13" pneumatic wheels. Features a positive shutoff lever, adjustable variable-rate stainless steel bottom/slide, steel tri-bar rotor for internal agitation, spread plate and porous oil-impregnated bearings.

The **42" drop spreader** with tow hitch and 16" pneumatic wheels. Features a positive shutoff lever, steel tri-bar rotor for internal agitation, adjustable variable-rate stainless steel bottom/slide, spread plate and porous, oil-impregnated bearings.

Both models can be used to apply a variety of seeds, granular chemicals, fungicides, fumigants and fertilizers.

PRODUCT DETAILS

- Steel hopper with durable powder coat finish for long life
- Adjustable stainless steel snap-on bottom and slide with triangular openings spaced 1-1/8" inches apart
- Bottom and slide snaps off for quick removal and cleaning
- Steel tri-bar rotor provides internal agitation
- Spread plate included to evenly distribute material over the surface
- Positive shutoff lever closes the slide stopping flow and eliminating dribble
- Porous oil-impregnated bearings for long life

COUNTRY OF ORIGIN: USA



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