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WILLIAM G. "BILL" WAGNER

by Rev. Robert L. Case

EDITORS NOTE:

Following is the memorial service for Bill Wagner. This message was written by Bill's pastor and friend, Reverend Robert L. Case and delivered on February 1, 1988, at First United Methodist Church of Jupiter/Tequesta.

We are gathered together this afternoon with sorrowful hearts because of the passing of Mr. William Wagner. Bill, as we know him, is survived by his wife, Joan, daughters, Susan Early and Peggy Wagner, brother LeRoy Wagner, and two grandchildren.

Although we are sad, we also feel glad and have a sense of joy in the midst of our sorrow. This joy comes from God's promises, the many means He has provided for us to receive comfort, and from the assurance we have concerning the one for whom we sorrow.

The appostle Paul said in 2 Corinthians 1:3-4: "Blessed be God...the God of all comfort; who comforteth us in all our tribulation"

How grateful we are for the many ways in which God comforts us. Let us think of a few of these.

- 1. He provides us with friends. Friends are a precious possession. Bill had many friends. He had many friends because he was a friend. If you want to have friends, you must be a friend. Bill had christian friends which are the best. You too, have friends who sympathize with you and bring you much comfort.
- 2. Then, God has given us loved ones who share our sorrow, as we sympathize with each other, we receive a strength and a comfort. Bill loved his family dearly. He loved all of you who are his loved ones. As you share together your sorrow, you are comforted and strengthened.
- 3. God has given us the ability to remember, which can be a source of comfort. There are many things that we remember about Bill that will bless our lives for years to come. He was a good man. By this we mean that he was honorable, trustworthy, faithful, gentle, kind, sincere. He was good in the christian sense, which is genuinely good.

We remember his love for life and beauty. He fought to live. A number of times he underwent critical surgery in his fight to continue living the life he enjoyed. He loved nature and all the beauties of God's creation. For 22 years he was Golf Course Superintendent of the Tequesta Country Club. He is past president of the Florida Chapter of the Golf Course Superintendents Association of America. He is past president of the Florida Turf Association. He loved beautiful flowers, grass, trees, and shrubbery. Just last week as I walked out of his house with Joan, I remarked about the beautiful Begonias and Impatiens that were blooming in his lawn. Joan told me that Bill usually planted those, but that since he was unable this year, the men who worked with him at the Country Club had planted them.

Joan had read to him a statement somebody else had written that speaks to us so well of Bill's love for the earth. The statement is as follows: "The secret is not a green thumb. The real secret is patience and gentleness. People who take time to care for the earth and love what God has created enhance the earth and all its miraculous ability to bring forth the beauty of God's creation."

The Honorable Carlton Stoddard, Mayor of Tequesta, in a Proclamation of Appreciation for the memorable community service of Bill, tells so beautifully of Bill's love for beauty and his contribution to the community that I shall read the proclaim in its entirety.

Village Of Tequesta

PROCLAMATION

OF APPRECIATION

for the Memorable Community Service of

WILLIAM G. WAGNER

- WHEREAS, on January 29th, in the year of our Lord 1988, death brought to a close the life of William G. Wagner, esteemed Tequesta citizen and public servant who contributed immeasurably to the beauty and quality of life in our community: and
- WHEREAS, the selfless service of Bill Wagner as Chairman of Tequesta's Board of Adjustment established guidelines for a more beautiful Tequesta; and in his role as

WHEREAS, Tequesta Country Club Golf Course Superintendent for 22 years, and Florida President of the Golf Course Superintendents Association of America, he created treasured landscape beauty and recreational enjoyment for the people of Tequesta and the state of Florida.

NOW, THEREFORE, BE IT RESOLVED -

That the Village Council of Tequesta join with our citizens in recognizing the lifetime contribution to our community of William G. "Bill" Wagner, beloved as "God's Gardener" and affectionately know to all as our friend.

In observance whereof, the flags at Tequesta Village Hall and Constitution Park for a period of three days from this date shall be flown at half staff. Duly authorized February 1, 1988, with the official seal of Tequesta affixed hereto.

> Carlton D. Stoddard Mayor

(SEAL)

Attest: Bill C. Kascavelis Village Clerk

We remember Bill's love for Christ and the Church. He always managed to get released from the hospital sooner than the Doctors predicted. He was anxious to get home and back to church. Once when he came home only a few days after critical surgery, I went by his home the next day or so and was told he was at the golf course. He was faithful to duty and he was faithful to Christ and the church. Many times he would come home from having had surgery and the following Sunday he would be ushering - always with a smile and that firm handshake that made you know he was glad to see you.

We will always remember his courage and patience during his illness. He had several critical operations that were extremely painful but I never heard him complain. He went the limit in an effort to live!

The first time Bill had surgery, after I became pastor here, my wife and I went to Miami to see him. To our surprise, he was already up and out with Joan walking over the hospital grounds. And my, how faithfully and lovingly Joan stood by him. She was his constant companion and such a source of strength for him all the way to the end. He acknowledged his love and appreciation for such a wonderful wife, as well as wonderful daughters and other loved ones.

A few months ago he as president of the Methodist Men, an organization he loved, told of his illness. He said some people were healed, but God had not seen fit to heal him. This, however, had not affected his faith in God. He was still a man of strong faith.

The last time he was able to talk to me was about a week ago and he could only say one word at a time. He was not conscious most of that time, but then he was and I asked if he felt better and he said, "Yes." I asked a couple other questions that he answered, "Yes." Then I said, "Bill, I know you are trusting in God." and he said clearly, "Yes." Then I said, "Goodbye, Bill." and he said, "Bye." His faith remained strong to the end.

His concern for others will never be forgotten. A week ago Thursday, which was the last day that he received any nourishment, I stopped by for a brief visit and he was sitting in his recliner leaning back. I shook hands with him and even though he was weak, he still had that firm handshake. I asked him how he was feeling and he replied, "Better today, but I want to know how you are." He knew I had been having some trouble with my back. That was an example of his concern for others.

- 4. We also receive much comfort from promises in God's word. Jesus said: "I am the resurrection and the life. He that believeth in me, though he were dead, yet shall he live." He also said: "Because I live, ye shall live also." Bill believed this and this gives us assurance concerning him. We are thankful for the confidence that he is no longer suffering but is in the presence of our Lord, where he shall dwell forevermore.
- 5. Finally, we are grateful that God is present with us to provide the comfort and strength that we need. Although we are frail in our humanity, we are strong in the Lord.

I want to close with words and scripture given to me by Joan, which is as follows:

Joan said: "My Bill is a valiant man, strong in the Lord to the end. God's grace was sufficient for him."

His favorite Bible verse was Micah 6:8. "He hath showed thee, O man, what is good; and what doth the Lord require of thee, but to do justly, and to love mercy, and to walk humbly with thy God."

Others that were favorites:

Isaiah 26:3-4, "Thou wilt keep him in perfect peace, whose mind is stayed on thee; because he trusteth in thee." "Trust ye in the Lord forever: for in the Lord Jehovah is everlasting strength:"

Romans 8:28-30. "And we know that all things work together for good to them that love God, to them who are the called according to his purpose. For whom he did foreknow, he also did predestinate to be conformed to the image of his son, that he might be the firstborn among many brethren.

Moreover whom he did predestinate, them he also called: and whom he called, them he also justified: and whom he justified, them he also glorified."



The FGCSA has been in existence and extremely productive for the past seven years. We now feel that we need to give annual recognition to a deserving Golf Course Superintendent.

This recognition will come in the form of an award, and will be most prestigious, similar to our profession's most highest award — the GCSAA Distinguished Service Award.

Therefore, selecting recipients will be a monumental task; making sure the proposed recipients are of the highest esteem, that they are deserving, that they have performed outstanding achievements as a Golf Course Superintendent, and that they have given their time unselfishly in promoting Golf Course Management and unification of the Florida Golf Course Superintendent.

Rules for eligibility of nominees and assimilation of information on nominees was laid out by our Awards Committee. A name was selected. The name will be The Florida Golf Course Superintendents Association's Distinguished Service Award. Our first goes to Past President, William G. Wagner (left), at the FTGA Annual Award Luncheon in Tampa on October 1, 1985.





FT-GA's Most Prestigious Award Presented to Bill Wagner

At the October annual meeting of the Florida Turf-Grass Association, a surprised and humble, Bill Wagner, accepted the Wreath of Grass Award from out-going President Mike Swanson, along with the gavel representing the beginning of his term of office as President of the Association.

The Wreath of Grass Award is the highest honor the Association can bestow on a person, and is presented to one who has made a significant contribution to the turfgrass industry.

Bill was born in Philadelphia and grew up in Quakertown, Pennsylvania. Moving to Florida in 1959, he operated his own service station, candy and tobacco business. Being in the auto mechanics business with an interest in agriculture, he was eventually led into the golf course business, to which he has devoted over twenty years. He has been the golf course superintendent at Tequesta Country Club for the past nineteen of these years. He has served on the Curriculum Advisory Commission for the mechanics program at Lake City Community College.

While serving as President of the Florida Golf Superintendents, Bill effectively organized the state association so that it became a powerful political influence in the national association. He has also been very effective working very closely with the South Florida Water Management District in establishing rules for restrictive water use in Florida.

His colleagues agree that Bill is a quiet force in the turfgrass industry. Congratulations, Bill, for your accomplishments and receiving this distinguished award!

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Sunlight and Your Skin

By STEPHEN E. CHIARELLO, M.D., P.A. Dermatology & Dermatological Surgery Diplomate of the American Board of Dermatology

Why Avoid the Sun?

Sunlight permanently damages skin. Ordinary sun exposure during tanning and outdoor sports causes permanent skin changes. These changes build up over the years, so that even moderate repeated sun exposure causes visible skin damage. Most of the wrinkling, roughening, and freckling that appears on the face, hands and arms of white adults comes from sun damage, not age. You can see this if you compare less sun-exposed areas, such as your abdomen or the undersides of your arms, with sun-exposed areas such as your face, neck, or upper surfaces of your arms. The natural coloration of your skin, pigment, protects you from the damaging effects of sunlight. Persons with fair skin, who have little pigment, are more prone to sun damage than dark-skinned individuals.

The Skin-Damaging Effects of Sunlight

The skin-damaging effects of sunlight gradually lead to roughening, freckling, and wrinkling. Many people in their 30s and 40s are unhappy because their wrinkled, roughened, sun-damaged skin makes them appear 10 or 15 years older. Unfortunately, there's no way to undo these changes. Young people should realize that they'll ultimately pay a steep price for the temporary glamour of a deep tan.

A more serious effect of sun damage is skin cancer. Sun damage is the chief cause of skin cancer. Here again, fairskinned individuals are much more susceptible. Skin cancer rarely occurs in blacks. As you might expect, skin cancer tends to occur on sun-exposed areas such as the face, neck, shoulders, and arms. While skin cancers can usually be removed by minor surgery in a doctor's office, it's better to prevent them.

Ultraviolet Rays - The Invisible Enemy

Sunlight contains both ordinary, harmless, visible light and shorter, invisible light rays called ultraviolet light. Tanning, burning, and skin damage from sunlight are caused by ultraviolet rays. Since ultraviolet rays produce both tanning and skin damage, it's impossible to tan "safely" and avoid permanent skin damage. Discussions on sunbathing that describe "safe" tanning refer to the avoidance of sunburn. By proper timing, most persons can get a deep tan without a sunburn. However, no one can get a tan without some skin damage.

Sun-Protective Measures

There are two basic ways of protecting your skin from the damaging effects of ultraviolet rays: (1) blocking out all light with an opaque material such as clothing and (2) using a chemical sunscreen that selectively absorbs ultraviolet rays. Blocking out all light with clothing is most effective. Certain sun protectives depend on the same principle. They coat the skin with a paintlike pigment that mechanically blocks light. They work well, but they're messy and rather unsightly. There are also many clear sunscreens that absorb ultraviolet light. These "clean" sunscreens contain either PABA (para-aminobenzoic acid) or a benzophenone compound. Some of the PABA-containing sunscreens are taken up by the skin and will provide some protection in the water, provided they're applied one or two hours before swimming. An occasional person is allergic to PABA or its derivative. So please try PABA-type sunscreens on a small area of skin before spreading it all over your body. The other chemical class of sun protectives, the benzophenones, rarely cause skin allergy. Benzophenones wash off, however, and therefore do not protect swimmers. Some benzophenones have a bitter taste that can be annoying when applied near the mouth.

There are many sun protectives on the market. If they're designed and act as "sunlight blockers" and contain a PABA derivative or benzophenone, they're probably adequate. Water removes most sunscreens. Remember to put on another coat of sunscreen after swimming or bathing. If you're sweating heavily, use some more sunscreen every hour or two. If you're in very bright sunlight, it's wise to protect your skin as much as possible with clothing (long sleeves, gloves, wide-brimmed hats) and use one of the "clean" chemical sunscreens on the parts of your skin exposed to the sun.

Protect your lips from sun damage. The darker lipstick shades are effective for women. Men — and women who don't wear lipstick — should use ultraviolet - absorbing lip pomade. Women can use make-up with a sun protective. The sun protective should be applied first, then the make-up itself — especially if heavily colored — provides some sun protection.

You should aim to minimize sun exposure, not avoid it. Being outdoors is fun and healthy; don't let fear of sun damage keep you inside during sunny weather. Do use sun protectives when enjoying sports or a walk in the sun.

Specific Sun Protection Instructions

- 1. Avoid the 10 a.m. to 2:00 p.m. sun whenever possible as 70% of the earth's harmful radiation reaches us at that time.
- 2. Wear protective clothing: a broad brimmed hat and long sleeved, tightly woven white cotton shirt.
- 3. Apply a sunscreen containing both PABA and Benzophenone to dry skin at least one (1) hour before sun exposure for maximium protection. Wipe or wash residual from palms. Let dry before putting on clothes.

Hydration of Skin: (Bath or Shower) Immediately before application, provides an increased "protection reservoir". Daily application maintains this "protective reservoir". Always reapply after swimming or excessive sweating.

Exposed areas of the skin most likely to suffer sun damage are the face, (especially ears and nose, the scalp if you are bald), the back of the neck, arms, top of the hands and exposed parts of the chest.

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DON'T EAT COCONUTS FROM TREES TREATED FOR LETHAL YELLOWING

By: Chuck Woods

Please don't eat the coconuts. That's the advice of a University of Florida palm expert who warns that coconuts from trees treated with antibiotics to stop lethal yellowing could be hazardous to your health.

With the recent outbreak of the palm disease in southwest Florida, many cities and homeowners are injecting palms with oxytetracycline, a drug that causes resistance to the disease as long as the treatment is repeated every three or four months. And now there's concern about the safety of eating coconuts from these injected palms.

"For a normal person, eating coconuts from palms that have been injected with oxytetracycline would have no effect on that person. But some people can have allergic reactions to some antibiotics," said Dr. Henry Donselman of the Institute of Food and Agricultural Sciences (IFAS) research center in Ft. Lauderdale.

"Oxytetracycline is also known to cause discoloring in the developing teeth of newborns and toddlers," he said.

"The bottom line on eating coconuts from injected palm trees is not how safe it is but the fact that it is contrary to the product label recommendations for use of the drug to prevent lethal yellowing," he explained.

He said there is a distinction between a chemical labeled for a food crop and one labeled for an ornamental crop. The use of oxytetracycline on "ornamental" palms is clearly stated on the label.

"This means we need to recognize that this is a nonfood label and that coconuts from these trees are not to be used for consumption," Donselman explained.

Lethal yellowing is a serious disease that strikes the original "Jamaica Tall" coconut palms in south Florida. Although most of these palms have already died of lethal yellowing on the east coast of Florida, large numbers still remain on the west coast, particularly in Lee and Collier counties.

Donselman said injection of Jamaica Tall palms is an effective way to combat the disease. "However, to insure the continued overall tropical beauty of palms in our landscape, we need to place a strong emphasis on underplanting our existing, susceptible palms with resistant ones such as the Malayan Dwarf and hybrid Maypan.

"Not only will these add to our landscape, but they will provide us with coconuts that are perfectly safe and legal to eat," Donselman concluded.

FOR ADDITIONAL INFORMATION, CONTACT DONSELMAN AT (305) 475-8990.





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PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS & DOMESTIC ANIMALS CAUTION: Harmful if swallowed. Causes eye irritation. Avoid contact with eyes, skin and clothing. Avoid breath-ing dust or spray mist. Keep children and animals off treated areas until these areas are dry. STATEMENT OF PRACTICAL TREATMENT: If swallowed, give a large amount of water to drink, make person vomit and call a doctor. In case of eye contact, wash eyes with fresh water for 15 minutes. If irritation continues, see a doctor. Wash hands thoroughly after handling. Note to Physicians: Emergency Information—call (415) 233-3737. Acephate is a cholinesterase inhibitor. If signs of cholinesterase inhibition appear, atropine is antidotal. 2-PAM may also be used in conjunction with atropine but should not be used alone. ENVIRONMENTAL HAZARDS: This pesticide is toxic to birds. Do not apply directly to water or wetlands. Cover or soil-incorporate spills.

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or soil-incorporate spills. This product is highly toxic to bees exposed to direct treatment or residues on blooming crops or weeds. Do not apply this product or allow it to drift to blooming crops or weeds if bees are visiting treatment area.

DIRECTIONS FOR USE: It is a violation of Federal law to use this product in a manner inconsistent with its labeling. READ ENTIRE LABEL AND PAMPHLET. USE STRICTLY IN ACCORDANCE WITH PRECAUTIONARY STATEMENTS AND DIRECTIONS. AND WITH APPLICABLE STATE AND FEDERAL REGULATIONS.

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Keep all unprotected persons out of operating areas or vicinity where there may be drift.

Do not enter treated areas without protective clothing until sprays have dried. Certain states may require more restrictive reentry intervals; consult your State Department of Agriculture for further

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Written or oral warnings regarding use of protective clothing and accidental exposure must be given to workers who are expected to be in treated areas or in areas about to be treated.

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Amount of ORTHENE 75 S Soluble Powder	1-1/3 lbs.	1 lb.	2/3 lb.	4 oz.	2 oz.
Amount Active Contained	1 lb.	3/4 lb.	1/2 lb.	1/5 lb.	1/10 lb

SPECIALTY LISES

Crops Insect		Amount ORTHENE 75 S Per Acre	Further Use Instructions	Days to Harvest
Non-Crop Areas	Imported Fire Ants	Mound Treatment— Dry Method: Evenly distribute 1 to 2. teaspoons over the mound. Drench Method: Mix 1 oz. in 5 gals. of water. Apply 1 gal. of mix to each mound area by sprinkling the mound area by sprinkling the sprinkling the sprinkli	For best results apply the material in the early morning or late afternoon when the ants are most active. Applications made under prolonged hot and dry conditions may be ineffective due to the location of the ants deep within the nest. Grass in treated area may be injured. Do not treat mound more than once per season.	

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1 lb.	7-1/2 oz.	3	
1-1/3 lbs.	10 oz.	4	

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Plants	Insects	Amount ORTHENE 75 S Per 1,000 Sq. Ft.	Time of Application	Recommended Application
Turfgrass	Fall Armyworm Yellow Striped Armyworm Southern Armyworm	1/2 to 1.2 oz. (1-1/3 to 3-1/4 lbs. per acre)	As the insects appear. A repeat application at 2 week intervals may be necessary.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. Use a minimum of 5 gals. water per 1,000 sq. ft. to obtain good coverage.
-	Cutworm	1.2 to 2.4 oz. (3-1/4 to 6-2/3 lbs. per acre)		
÷	Sod Webworm (Crambus spp.)	72 to 1 oz. (1-1/3 to 2-3/4 lbs. per acre)	As sod webworms begin to appear. Use the higher amount when guick knock- down is needed or with heavy infestations. Repeat application may be necessary. Do not repeat at more than 1 week intervals.	Apply the specified amount of ORTHENE 75 Soluble Powder per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.
	Leafhopper	1 oz. (2-3/4 lbs. per acre)	As the leafhoppers begin to appear. A repeat application at 1 week intervals may be necessary.	Apply the specified amount of ORTHENE 75 S Soluble Powder per 1,000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage.
	Mole Crickets (Except CA)	1.0 to 1.9 oz. (2.66–5.2 lbs. per acre)	As mole crickets begin to appear. For knockdown of exist- ing populations, more than one application may be required throughout the grow- ing season. For heavy infestations, use the higher dos- age rate.	Apply the specified amount of ORTHENE 75S Soluble Powder per 1000 sq. ft. Use 1 to 15 gals. water per 1,000 sq. ft. to obtain good coverage. Apply during late afternoon or early evening hours and after an irrigation. Do not irrigate after application.
	Greenbug (Schizaphis graminun) Grasshoppers	1/2 oz. (1-1/3 lbs. per acre)	Apply when insects or their damage first appears. Repeat as necessary. Appli- cation is not to be repeated at more than 1 week intervals.	Apply the specified amount of ORTHENE 75 S Soluble Powder. Use 4 gais of water per 1,000 sq. ft. to obtain good coverage. Do not mow turfgrass for at least 24 hours after application.

Do not apply under conditions involving possible drift to food, forage or other plantings that might be damaged or the crops thereof rendered unfit for sale, use or consumption. NOTE: This product is sold by weight and package is full when packed, but due to fluffy nature this material is inclined to settle

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What Subdue is How Subdue works		A new type of fungicide registered for use against Pythium and Phytophthora diseases in turf and ornamentals. It is laweled for use on more than 50 species of ornamental plants.		
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How to apply		Spread Subdue granules uniformly over turf, or container, bench, or bed grown ornamen- tals, and irrigate with enough water to thoroughly moisten the root zone.		
		Within a listed rate range, use the lower rate for the shortest interval given, and the higher rate for the longest interval. Under severe disease conditions, use the highest rate and the shortest interval specified.		

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We Make the Solution to Water Quality Problems

Crystal Clear





Barebo – A profile of continuing commitment



1

The success story of Barebo, Inc. began with a goal to develop more natural, energy efficient and simple methods of treating water quality problems. Through the manufacture of Otterbine[®] Aeration Systems, Barebo, Inc. has met many of the water management needs of golf courses, parks, retention ponds, recreational lakes and waterways as well as wastewater treatment facilities and commercial fish farms.

With the assistance of a dedicated team of engineers, our product line has grown in less than ten years into one of the largest selections of aerators available today. Much of our company's success can be attributed to the fact that we are family owned and operated. That means that we take pride in every product we produce. After all, it must be good enough to carry the Barebo name.

Each year, more people are realizing the many benefits of Otterbine Floating Aerators. In addition to enhancing the natural beauty of its surroundings, an Otterbine Aerator prevents the build-up of algae, aquatic weeds, bottom sludge and unpleasant aquatic odors resulting in cleaner, clearer water. This is accomplished through a process called aeration. As the Otterbine's spray droplets travel through the air, they absorb atmospheric oxygen, transferring this oxygen to the water as the droplets strike the surface. Hence, the greater the pumping rate, the greater the aeration factor. An Otterbine's oxygen transfer rate (OTR) is approximately 3.6 pounds of dissolved oxygen per horsepower hour.

Otterbine Aerators have prevented algae blooms, sludge build-up and weed growth

in applications throughout the U.S. and abroad. These aerators have met the water management requirements of golf courses, parks and schools, hospitals, industrial complexes, cemeteries, housing developments and amusement parks. And, the range of Otterbine applications is continually expanding.

Recently, there has been a dramatic increase in the variety of aerator systems we offer. More sizes and types are now available to meet specific pond and lake needs. Although Barebo has enlarged its product line and more than tripled in size, you will find that we still uphold the same commitment to producing quality products that we were founded on. Our pledge is to continue to meet the many needs of our customers and to explore new markets that can benefit from the use of Otterbine Aerators.



Natural Water Quality Management

Otterbine Aerators are designed to biologically treat the true causes of algae blooms and unpleasant aquatic odors poor water quality. Due to the systems' spray and wave-making action, adequate amounts of oxygen are added to and circulated through the water with numerous beneficial effects on its appearance and quality.



Otterbine® Aerators

The Otterbine speeds up the biodegrading process of organic wastes and fertilizer run-off by the addition of oxygen and circulation. The added dissolved oxygen helps the bacteria in the pond respire and break down unpleasant odors and organic wastes. The result is clearer. cleaner, odor-free water. Otterbine Aerators greatly inhibit the growth of algae which can gradually destroy oxygen concentrations required by all forms of aquatic wildlife (plant and animal), clog irrigation equipment and create an unsightly, stagnant appearance. By continually circulating large amounts of water the aerator prevents thermal stratification. Thermal stratification is the phenomenon where the upper layers of the lake or pond become much hotter than the lower depths. Algae has a tendency to thrive in warmer waters.

Other methods of water quality control, such as algaecides and lake dyes treat the symptoms of poor water quality, algae and unpleasant odor, but fail to manage the root of the problem—poor water quality. The use of expensive and timeconsuming chemicals does not solve organic waste and aquatic odor problems and requires that strict government application regulations be met. Through the use of an Otterbine Aerator, chemical use is often eliminated or greatly reduced.

Aeration systems are an environmentally acceptable way to improve water quality by helping to solve problems at the onset and preventing their re-occurrence later.

Sizes and Capacities

These floating mechanical pumps are compact, self-contained units that range in primary pumping capacity from 80 to 3,000 gallons of oxygen-enriched water per minute—in addition, the secondary circulation currents move 10 times the primary pumping rates. Our small 1/20 horsepower units circulate over 600,000 gallons of water in a 24-hour period, and our largest unit circulates over 20 million gallons per day.

Units are available in sizes ranging from 1/20 to ten horsepower. They can be installed in pools as small as 10 feet in diameter with as little as 18 inches of water. This complete, turnkey system is delivered fully assembled and ready for installation. No foundations, external pumps or other costly plumbing fixtures are required.

An Otterbine Aerator can be installed by two people in about one hour by simply floating the unit to the desired position, mooring or anchoring in place and connecting the system to on-shore electrical service through a furnished underwater power cable. It is recommended that all electrical work be performed by a qualified electrician.

Aerators designed by Barebo are ideal for use during the entire year. Special circulator cap attachments provide operation at below freezing temperatures by circulating warm water from the bottom and mixing it with cooler surface waters. This process raises the overall pond temperature. The circulator assembly will keep a sufficient area open around the Otterbine to prevent a total freeze-up and winterkill of fish.

Enhanced Surroundings

Special stainless steel Otterbine Aerators can be used in all types of water—from harsh, alkaline desert lakes to brackish salt water. And, the best bonus of all is the way these aerators enhance their surroundings with dramatic and graceful water sculptures.

The grounds of numerous facilities golf courses, recreational facilities and amusement parks, industrial complexes and hospitals—have all benefited from the beauty and sound of the softly falling water.

Nationwide Dealer Network

Begin solving your water quality problems today by contacting one of our many qualified dealers from our nationwide network. Through this dealer system and our main Pennsylvania facility, you can be assured of fast, effective service. Our professionally trained personnel can even "trouble-shoot" over the telephone if necessary!

Your Otterbine dealer will analyze the specific problems of your lake or pond and prescribe an Otterbine that will efficiently and cost-effectively solve those problems. Factory application engineering services are also available through your Otterbine dealer.









"We're looking forward to an algae-free, odor-free summer...for the first time in the Club's history!"

PHOENIX

- Paul J. Bihuniak Chairman of the Cavalry Club Landscape Committee Manlius, New York

CONSTELLATION



The dramatic display pictured is created by a 500 Rocket surrounded by 300 Sunbursts. A Constellation can be designed using any combination of sizes and shapes of spray patterns. Your imagination is your only limit.



Simulating natural aeration from wave and wind action, the Starburst unit produces an attractive spray that effectively stimulates biological water cleanup processes.



Shown in this photo is an Otterbine Aerator accessory, the Rock Float Cover, described on page 6.



Two beautiful spray patterns emerge from one unit to create a dynamic pattern.

SUNBURST



Manufactured of stainless steel components for corrosive applications or aluminum for other usages, the Sunburst is available in a variety of sizes and is designed especially for tough conditions.

"We plan to purchase a second Otterbine Aerator. With today's inflationary costs of chemicals and environmentalists on standby...the mechanical aerator is the way to go!"

> - Bob Orazi Golf Course Superintendent of the Hunt Valley Golf Club Hunt Valley, Maryland





Available in various horsepower sizes, these heavy duty units are the "work horses" of the Otterbine line.



The Pockat's biob-shooting spray is ideal for use in

The Rocket's high-shooting spray is ideal for use in landscape architecture applications, providing an extremely dramatic and attractive effect.



Plug-type underwater connector resists leakage.

- Smoothly molded flow chamber for unobstructed pumping.
- One-piece water intake casting with screen to prevent entry of foreign objects.
- Long-life, submersible motor.
- Motor bearings, continuously lubricated in reservoir of circulating transformer oil especially designed for Otterbine Aerators by a major oil company. Motor runs cooler and longer due to heat transferral to water through aluminum motor housing.
- UL approved, triple-insulated underwater power cable available in one-piece lengths up to 1000 feet.
- Stainless steel fasteners.
- Shorter driveshaft minimizes vibration which prolongs bearing and seal life.
- Note: Plastic foam-filled float remains on water surface even if damaged.

Power Control Center



The Otterbine Power Control Center is available in capacities that range from 115V single phase up

ETL Approved

Otterbine Aerators meet the high safety standards of the Electrical Testing Laboratory. Units are rigorously tested to ETL specifications. Make sure any equipment you purchase is safety tested and rated by ETL or UL.

to 460V three phase. Designed with built-in protection from phase unbalancing, power surges, low voltage and spikes, these control boxes are UL, CSA and ETL safety tested.

Each Control Center is a NEMA 3R weather resistant combination starter equipped with a hand-off automatic switch and 24 hour operational timer.

GFI is suggested for areas where people are using the water for recreational purposes. Custom panels are available at additional cost.

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Technical Data

Model	HP	Voltage*	Running Amperage Draw	Spray Height in Feet	Spray Diameter in Feet	Pumping Rate GPM	Induced Circulation Rate GPM
Standard-STD							
100	1	115	13.4	2.5	7	625	3125
		230	7.7	2.5	7	625	3125
200	2	230	12.5	3	10	1180	5900
200	-	250	12.0		10	1100	5500
300	3	230	9	4	12	1500	7500
		460	4.5	4	12	1500	7500
500	5	230	16	5	14	2000	10000
		460	8	5	14	2000	10000
Starburst-SB							
200	2	230	12.5	4	20	1180	5900
300	3	230	9	5	26	1500	7500
100000		460	4.5	5	26	1500	7500
500	5	230	16	6	32	2000	10000
		460	8	6	32	2000	10000
Sunburst-SNB							
100	1	115	13.4	4	15	625	3125
		230	7.7	4	15	625	3125
200	2	230	12.5	6	25	1180	5900
300	3	230	9	7	30	1500	7500
		460	4.5	7	30	1500	7500
500	5	230	16	8	35	2000	10000
		460	8	8	35	2000	10000
1000	10	230	24	10	40	3100	15500
1000	10	460	12	10	40	3100	15500
Rocket-RKT		400	16	10	40	5100	15500
100	1	230	7.7	10 - 11	4	400	NA
200	2	230	12.5	15 - 16	4	590	NA
300	3	230	9	19 - 20	4	750	NA
	-	460	4.5	19 - 20	4	750	N/A
500	5	230	16	26 - 28	4	1000	N/A
		460	8	26 - 28	4	1000	N/A
Phoenix-PHX				Inside Outside	Inside Outside	1000	
200	2	230	12.5	12 6	3 22	1180	3125
500	5	230	16	16 8	3 32	2000	10000
		460	8	16 8	3 32	2000	10000
LSS350	1/3	115	5.0	3	6	185	925
		230	2.5	3	6	185	925
LSS350 RKT	1/3	115	5.0	5	2	. 185	925
		230	2.5	5	2	185	925

Constellation — The Constellation consists of a base unit and any number, size, and type satellite units you desire.

*All 230V motors are available in 208V at no extra cost. All 2HP motors and lower are single phase. All 3HP and larger are three phase. The above specifications are computer results and may vary under local conditions.

Otterbine Aerator Accessories Creating Dynamic Effects Around the Clock

The Otterbine Fountain-Glo[™] Lighting system extends the beauty of your daytime waterscape. Two to six lights can be mounted on each unit. Heavy duty transfomers are available for multiple lights and longer cord runs. A light sequencer is now available that can bring up different colored lights at timed intervals resulting in a dramatic light-show at night.

The Fountain-Glo unit comes with an automatic timer that can be programmed to turn on and off according to your needs. Best of all, it operates on a safe, lowvoltage electrical system that keeps costs to a minimum. For just pennies a day, you can display a beautifully glowing flowing aerator at night.

The Rock Float Cover accessory gives the impression that your aerator is completely natural, as the water shoots geyerslike from this decorative, rock-look-alike cover.

A Circulator Cap may be added to keep waterways and ponds open in the winter-time by directing warm water to the surface.







BAREBO, INC. P.O. Box 217, R.D. 2, Emmaus, Pennsylvania 18049

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"DESIGNED TO PROTECT GROUNDWATER"

IFAS Researcher Patents New Turf Herbicide For Commercial Market

By: Chuck Woods

GAINESVILLE — A turf herbicide designed to reduce the danger of groundwater contamination has been invented and patented by a researcher with the University of Florida's Institute of Food and Agricultural Sciences (IFAS).

The herbicide will control weeds in lawns, golf greens and other grassy areas. It will be marketed under the "Premier" trademark by the Ciba-Geigy Corporation, Greensboro, North Carolina, as soon as the product's federal registration is approved by the Environmental Protection Agency (EPA).

Dr. Merrill Wilcox, professor in the IFAS Agronomy Department who synthesized the chemical compound, has assigned patent rights for the new product to the University of Florida, which will receive royalties from sales of the chemical.

Wilcox, who is licensed to practice patent law, says EPA approval is the only remaining obstacle to getting the product ready for the commercial market. He hopes EPA will clear the product within the next year.

"We're very confident EPA will look favorably on this herbicide because of its low toxicity and the fact it will be for a non-food use. The water solubility of this chemical is so low (18 parts per billion) that there will be no danger of ground water contamination in areas like Florida where chemicals tend to move rapidly through the soil profile," Wilcox explains.

Wilcox says the product is also being evaluated for weed control in non-bearing citrus where it also shows considerable promise.

"The extremely low water solubility of Premiere will protect sensitive Florida aquifers which are often very easily recharged from the surface in citrus soils such as those on the ridge," he explains.

"When it comes to developing and actually marketing a new pesticide, only one in 18,000 compounds ever makes it from the laboratory through the lengthy and complicated efficacy and regulatory process all the way to the commercial marketplace. For this reason, it's easy to see why this type of research is often described as being 'high risk' with little chance for return on investment.

"In this case, however, it looks like our research effort over the past seven years will pay off, resulting in a commercially viable product for a rapidly growing segment of the worldwide herbicide market. The market for controlling weeds in turf grass is second only to that for controlling weeds in corn," the IFAS agronomist explains.



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WE'LL HAVE CHECKS, NOT HATS, IN OUR HANDS'

FTGA begins project to raise \$5 million fund for turfgrass research

By Larry Kieffer

ORLANDO, Fla.

The 1987 Florida Turfgrass Association Conference and Show in Tampa Oct. 10-13 probably will be remembered most as the launching pad for the organization's ambitious five-year drive to create a \$5 million endowment fund for turf research.

If the effort is successful, with apologies to the late Winston Churchill, never again will such little things have caused so few to do so much for so many.

The "little things" are the two-inch-long mole cricket and the microscopic nematode, which together account for more turf damage than all other causes combined.

The "few" are the members of the FTGA in general, and golf course superintendents in particular. Although golf accounts for less than 10 percent of Florida's \$8 billion turf industry (some claim it's less than five percent), golf course superintendents make up about half the FTGA membership. And they account for nearly 80 percent of all money raised for turf research.

The "many" are Florida's homeowners, who now spend more than \$37 million a year just to repair the damage done by mole crickets. In all, private homeowners account for \$4.2 billion in turf care expenditures and professional lawncare services spend another \$2.5 billion. No figures are available for either the sports turf industry as a whole or the golf industry in particular. While golf course superintendents may be unsung heroes in the battle against turf problems, by no means are they completely altruistic.

"If we don't solve the mole cricket problem, they will cause the demise of the golf game in Florida," said Bob Yount, newly appointed vice president for development of the Florida Turfgrass Research Foundation, a mechanism created by the FTGA. Yount's job is to raise the \$5 million and administer the proceeds.

The 51-year-old Yount spent the last 10 years in Orlando as a field sales rep for Elanco Products, the turf chemical branch of pharmaceutical giant Eli Lilly. He went to work for Lilly shortly after graduation from Butler University in Indianapolis with degrees in marketing and psychology.

He is well known to Florida's turf professionals who will be the source of his \$5 million warchest. A longtime resident of Arnold Palmer's Bay Hill Club, Yount sports an eight handicap. He was general chairman last year of the Hertz Bay Hill Classic so he knows his way around Florida's golf circles.

Since he is not a professional fundraiser, Yount will rely heavily on advice from Larry Pauley, a consultant with Ford Thompson of Atlanta, a firm hired by the FTGA to help set up the research foundation and raise its endowment.

