Introducing the new advantage in irrigation repair, replacement and upgrade.

From LESCO and Bear™ Irrigation comes the advantage you've been looking for in golf course irrigation. Improved performance from a new line of components designed to upgrade your Toro® 600 and 700 Series valve-in-head sprinklers.

Included are two conversion assembly kits engineered to replace as many as 23 original equipment manufacturer assemblies. And also a unique Bear Evolution™ Series RG850 Sprinkler.

Loaded with features like three and four-inch pop-up heads, ground-hugging flush fit, dual front nozzles, greater pattern flexibility and a superior distribution pattern, these components offer never before encountered benefits.

Experience the Bear Irrigation advantage. Ask your LESCO Sales Representative for information or call 800-321-5325.

LESCO™

The golf maintenance staff of The Hamlet County Club. Photo by Joel Jackson.

The Hamlet Country Club

Location: Delray Beach, Florida.

Ownership: Equity.

Playing policy: Private.

Management Team: Clubhouse Manager, Kevin Kenny; Club President, Mrs. Muriel Kornheiser; Head Golf Professional, Mark Morgan; Green Chairman, Mr. Harold Duris; Green Co-Chairman, Mr. Edward Turner; Past Presient, Mr. Belford Small.

Designed by: Joe Lee. 18 holes. Length = Blue 6,552 yds; White 6,278 yds; Gold 5,824 yds; Red 5,639 yds.

Course/Slope Ratings: Blue 71.6/130; White 70.3/128; Gold 69.2/127; Red 72.6/132

Opened: 1973

Major projects: 1994, Joe Lee renovation. Contractor: Tifton Turf. Used Rapid Turf grass for greens. Closed from June to September 1994. Rebuilt 21 greens and slopes; 100 bunkers; 8 tees; 2 bulkheads; added 1 waterfall; removed 2.5 acres of brazilian pepper; transplanted overgrown trees. Mid September to mid November, two months after re-opening re-paved all cart paths and added curbing for traffic control. In December 1994 and January1995 after new clubhouse construction we installed new plant material, irrigation and paving around the cluhouse. Also new landscaping and irrigation of new entrance/front gate complex.

Acreage under maintenance: 179 acres.

Waterways = 22 acres.

Greens: 3 acres. Average size = 6,700 square feet. Turf type = Georgia Certified Tifdwarf. HOC = 1/8" - 3/16". Overseeding = 1 pound Pencross bentgrass in 1995 & 1996 season. May not overseed for '96-'97 season. Green speed goal = 8.0 - 8.5

Tees: 2 acres. Turf type = Tifway 419. HOC = 1/2". No overseeding

Fairways: 50 acres. Turf type = Tifway 419. HOC = 5/8". No overseeding.

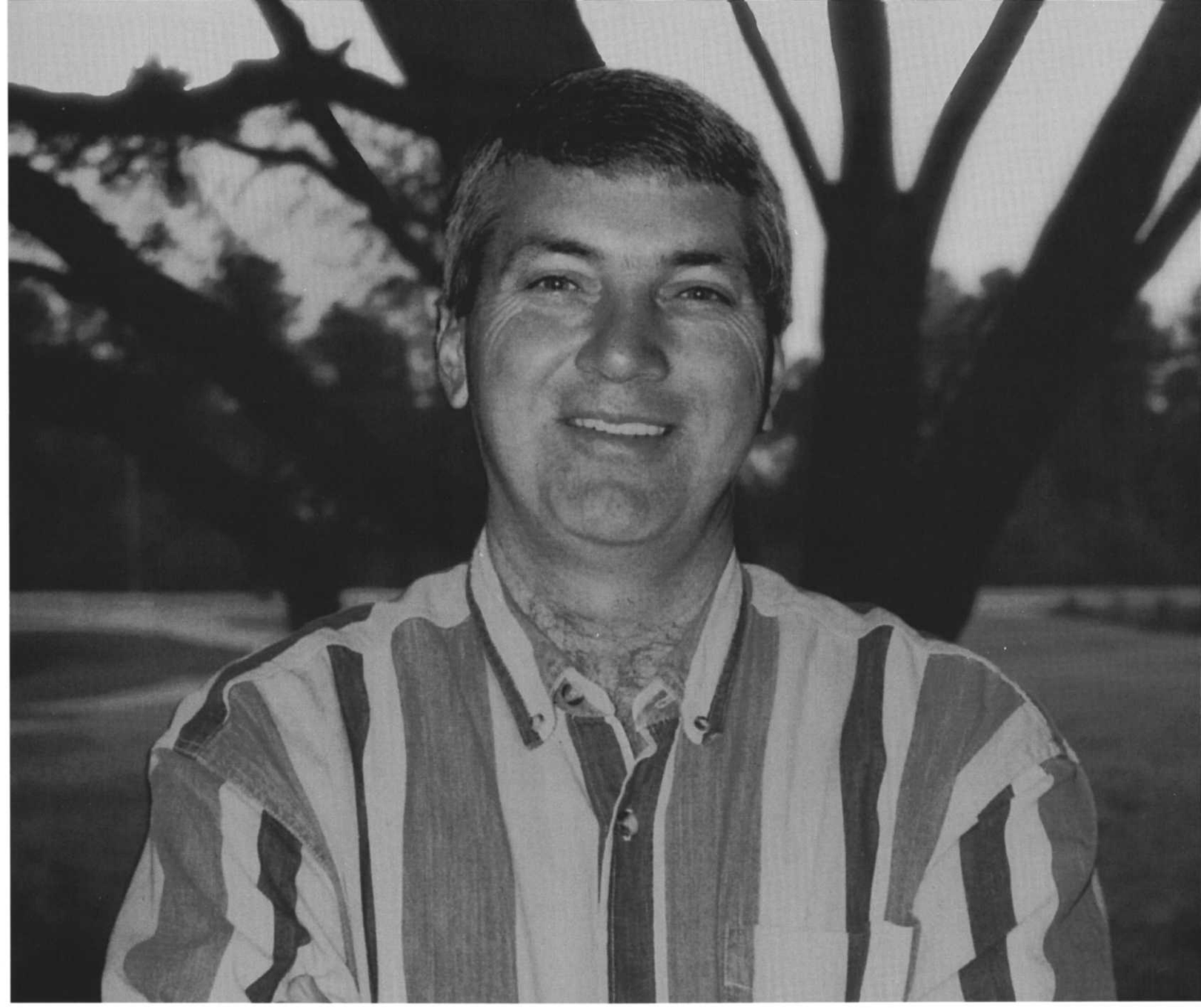
Roughs: 55 acres. Turf type = Tifway 419, Floratam St. Augustine and Zoysia in shady areas. HOC = 1 1/4' - 2".

Irrigation: Source = wells that recharge lakes. Equipment = Sullivan Electric VFD pump station. Toro VTII Central Controls.

Staff: Total of 19 including the superintendent. Assitant superintendent, Charlie Oliver. Equipment technician, James Howell. Pest Control Tech, Robin Hinote. Irrigation Tech, Lou Oliverria. The staff is responsible for maintaining the golf course and the landscape at the clubhouse, tennis courts, and Resident's Association front gate and roadways.

Mowing equipment: Greens & Collars = 8 Toro 1000 walk mowers; Tees = 2 Toro 3000 triplex mowers; Fairways = 1 Toro 11 blade 450D & 1 Toro 6700 Fairway mower; Roughs = 2 Toro 7 blade 450D's & 2 Toro 325 72" Rotary mowers with recycling decks.

Cultural & Fertility Programs: Aerify greens, tees and fairways once per year with a Soil Reliever with 1' hollow tines at 10" spacing and greens and tees once per year with a Ryan Greensaire II with 5/8" tines at 4" spacing. Also fairways with a Ryan pull-behind aerifier with 3/4" tines at 6' spacing. Pest Control all IPM administered as needed except wall to wall preemergent application in roughs. Fertility requirements based on soil tests and visual inspection of clippings harvest and color. Slow release materials with Milorganite in bulk applications. Liquid Ag fertigation to manage color and growth rates. pHairway water treatment to prevent salt build up and align soil chemistry for most efficent nutrient release. Lakes = have been using tilapia and grass carp to minimize need for chemical work in lakes by our aquatic contractor.



"We have learned how to get the right grasses for every region, to minimize grow-in and maintenance problems. Right now I am working on faster completion because it means huge savings for the owners and operators. I'm using the 1-2-3 program from ROOTS inc., because it gives me strong root growth, excellent color, and two to three weeks earlier completion."

Derrell Spikes, Tifton Select Grassing, Inc. 912-387-7475

1-2-3

roots inc. A Division of LISA Products Corporation, 3120 Weatherford Road, Independence MO

Shhhhhhhhhhhhhhhhhhhhhh!

with **HANDDREDGING** the play goes on!

◆ EXCLUSIVE HAND DREDGING ◆

WITH OUR PATENTED SYSTEM THE *PLAY GOES ON!* WHILE WE CLEAN DREDGE YOUR LAKES, PONDS, CULVERTS, PIPES AND INTAKES. MAKING YOU LOOK GOOD! MAKES US LOOK GOOD!

◆ EXCLUSIVE PUMP &DUMP ◆

WITH OUR PATENTED SYSTEM PUMP & DUMP WE PUMP DIRECTLY INTO OUR WAITING TRUCKS, FAR FROM THE DREDGE SITE. WE'RE QUIET, FAST, EFFICIENT AND ENVIRONMENTALLY SAFE.

FOR MORE INFORMATION CALL:

1-800-432-7658

SUBAQUEOUS SERVICES INC.

4201 KEAN ROAD, FORT LAUDERDALE, FL 33314

SERVING FLORIDA FOR OVER20 YEARS


Hector
TURF


WESCO TURF
INCORPORATED


ZAUN

and

TORO®

present...

TORO®

Multi Pro® 5500

A major breakthrough in spraying technology.
The simplest, most controllable sprayer ever built.
For incredibly precise applications.

The new Toro Multi Pro® 5500 is sophisticated yet simple.

Meet the newest member of Toro's family of Multi Pro work vehicles. Including a precision liquid application system technologically sophisticated but decidedly simple. A product of inspired engineering based on your needs.

Unprecedented Controllability

This is what makes the 5500 a breakthrough in spraying technology. Controllability as never before. For precise, consistent applications. Thanks to features like an ergonomically designed cockpit. Dashboard instrumentation clustered directly in front of the operator. A foot controlled master on-off switch for hands-free boom operation. And more.

Quietly Powerful

The Multi Pro 5500 is powered by a 45 hp, 4 cylinder, liquid cooled Ford industrial engine. Teamed with the most efficient hydrostatic drive ever designed. Giving the 5500 infinitely variable speed for easy going. And full power steering means there's quick turning maneuverability essential to spraying controllability.

What's more, considering its hard working power, the 5500 is remarkably quiet. Due primarily to its low tone muffler with exhaust pipe. Registering only 83 decibels at the operator's ear. Something your golfers and neighbors will also appreciate.

Liquid Assets

The 5500 covers a lot of turf in little time. It carries an extra large 300 gallon elliptical polyethylene tank with no corners to trap chemicals. Even with the 300 gallon capacity, ground pressure is still limited to 10.9 psi, like that of a riding greens mower.

It also features jet agitation to produce the rolling action necessary for most effective mixing of spray materials. The elliptical shape also provides a lower center of gravity and easy access to the oversized 16 inch fillwell and anti-siphon valve.

Multi Pro® 5500 Specifications*

MULTI PRO 5500, MODEL 41564

ENGINE	Ford, 4,cycle, 4 cylinder, overhead valve liquid cooled gasoline engine with centrifugal water pump. 45 hp (33.6 kW) @ 3200 rpm. 79 cu. in. (1.3 liter) displacement. Pressure lube/filter. 3.5 qt. (3.3 liter) oil capacity with replaceable filter. Distributorless electronic ignition. Forged connecting rods, cast iron cylinder head and block. Mechanical fuel pump. Heavy duty, 2-stage remote mounted air cleaner. Low-tone muffler with tailpipe.
COOLING SYSTEM	Mid mount radiator with oil cooler mounted in front of radiator. Cooling system capacity is 12 quarts (11.5 liters).
FUEL SYSTEM	11 gallon (42 liter) unleaded gasoline.
TRACTION DRIVE	Hydrostatic type, foot pedal control with electric pedal lock, 2 wheel motors and planetary final drives.
GROUND SPEED/ CLEARANCE	Forward: 0-11.5 mph (0-18.5 km/h). Reverse: 0-4 mph (0-6.4 km/h). Ground clearance: 6.5" (16.5 cm)
TIRES	Front: 23x10.5-12, 4-ply rating, turf tread. Rear: 26.5x14-12, 4-ply rating, turf tread.
BRAKES	Individual totally enclosed, multi-disc, wet brakes and parking brakes on rear traction wheels. Hydrostatic braking through traction drive.
MAIN FRAME	Welded high strength steel tubing.
SUSPENSION	Front: straight axle with twin independent leaf springs, dual shock absorbers. Rear: rigid frame.
STEERING	Full hydraulic power with dedicated power source.
GAUGES	Sprayer pressure gauge, engine oil pressure warning light, temperature gauge, voltmeter, and hour meter.

CONTROLS	Foot operated traction pedal, brake, brake lock pedals, and remote boom on/off switch. Hand operated throttle, speed control, choke control, ignition switch, light switch, pressure increase/decrease, master boom on/off, hydraulic spray pump, agitator, and individual boom on/off switches.
SEATS	Twin molded cushions and back rests with hip restraints.
ELECTRICAL FEATURES	12 volt with 420 cold cranking amps at 0°F (-18°C) maintenance free battery. Dash mounted ignition switch, 51 amp alternator with I/C regulator. Automotive type electrical system. Traction interlock switch.
LIGHTS	Twin halogen headlights.
SOUND LEVEL	83 dB(A) at operator's ear under normal operation.
WARRANTY	One year limited warranty: refer to the Multi Pro 5500 Operators Manual for further details.
PAYLOAD & MGVW	3,500 lb. (1,588 kg) payload. Maximum Gross Vehicle Weight (MGVW): 6,040 lb. (2,740 kg).
WEIGHT	Base Unit without Operator — 1,750 lb. (794 kg). Standard Spray System with Operator — 2,540 lb. (1,152 kg) - empty; 5,040 lb. (2,286 kg) - full. Spray System with all Accessories — 3,540 lb. (1,606 kg) - empty; 6,040 lb. (2,740 kg) - full.
DIMENSIONS	*Measurements with spray system —* Overall Length: 136" (345 cm) Overall Width: 72" (183 cm) Height: 57.5" (146 cm) Wheelbase: 78" (198 cm) Turning Diameter: 9´ (2.7 m) — inside 25´ (7.6 m) — outside Box Turning Width: 23´ (7 m)

MULTI PRO 5500 ACCESSORIES

SPRAYER ATTACHMENTS

SOLUTION TANK	High density, impact resistant polyethylene with large 16" (41 cm) fillwell.
RATED CAPACITY	300 gallon (1,136 liter).
PUMP	Closed impeller hydraulic centrifugal. Adjustable hydraulic drive. 120 gpm (454 liters per minute), 100 psi (690 kPa) maximums.
AGITATOR	Three jet agitators for full tank length agitation.
CONTROLS	Electric jet agitator on/off valve, pump engagement switch. Electric solenoid valves to each boom section operated from console. Electronic pressure regulator with gauge.
BOOM ASSEMBLY	3-section, 18.5 ft. (5.6 m) working width. Breaks away fore and aft. Folds rearward behind tank for storage or transport. Optional Go Boom™ (Model 41030) or Sonic Boom™ (Model 41089) for added lift; individual control adjusts boom height to any angle.
SPRAY NOZZLES	Drift reduction, quick-disconnect with diaphragm check valves.
MOUNTING	Attaches easily with two bolts.

TOPDRESSER, MODEL 41570

HOPPER	12 gauge steel, 45° sloped sides for free flow of material. Adjustable flow gate.
CAPACITY	30.4 cu. ft. (.851 m^3) at level; 3,500 lb. (1,588 kg) maximum.
SPREAD WIDTH	15 feet (457 cm)
FLOW RATE	Up to 1,350 lb. (612 kg) per minute.
DRIVE	Hydraulically driven conveyor and spinner.
CONVEYOR	Self cleaning pintle chain is formed alloy steel with heat-treated hardened steel pins. Heavy duty drag bars on 4-1/2" (11.4 cm) centers.
SPINNER ASSEMBLY	13" (33 cm) diameter, 10 gauge steel disc with 4 steel vanes gives a uniform trajectory distribution. Adjustable baffle chute standard.
WEIGHT	Base unit w/top-dresser and operator: 2,500 lb. (1,134 kg) — empty 6,000 lb. (2,722 kg) — full

CARGO BED, MODEL 41560

MODEL	Model No. 41560
BODY	14 and 13 gauge steel with structural steel frame.
CAPACITY	3,500 lb. (1,588 kg) maximum.
TAILGATE	Double-acting with flow control adjustment; removable.
LIFT SYSTEM	Hydraulically raises bed angle to 47°, safety locking post. Double-acting cylinder with quick coupled hydraulic hoses.
INSIDE DIMENSIONS & WEIGHT	Length: 66" (168 cm) Width: 49" (124 cm) Depth: 18" (46 cm) Shipping Weight: 490 lb. (222 kg) Base unit with cargo bed and operator: 2,450 lb. (1,111 kg) — empty 5,950 lb. (2,699 kg) — full

PA-17 SPREADER, MODEL 41502

HOPPER	1/8" (3.2 mm) steel.
CAPACITY	17.1 cu. ft. (.478 cubic meters); 1,000 lb. (454 kg) maximum.
WORKING WIDTH	Adjustable, 15 to 60 feet (4.6 to 18.3 meters).
DRIVE	Hydraulic motor driven through a single universal joint and hub attached to spreader. Quick coupled hoses attach to main control valve.
CONTROLS	On/off lever and flow regulator from operator seat. Swath width adjuster on spreader.
FLOW RATE	Up to 625 lb. (284 kg) per minute.
DIMENSIONS/ WEIGHT	Width: 51" (130 cm) Length: 51" (130 cm) Height (mounted): 59" (150 cm) Shipping weight: 400 lb. (181 kg) Base unit with spreader & operator: 2,450 lb. (1,111 kg) — empty 3,450 lb. (1,565 kg) — full

A Safety Reminder: prior to any application know the chemical content and the manufacturer's recommendation for protective clothing. Always wear proper clothing and mask when applying chemicals.

*Specifications and design subject to change without notice. "Toro", "Multi Pro", "Go Boom", "Pro Control", and "Sonic Boom" are trademarks of The Toro Company, 8111 Lyndale Avenue South, Minneapolis, Minnesota, 55420-1196. Products depicted in this advertisement are for demonstration purposes only. Actual products offered for sale may vary in use, design, required attachments and safety features. Consult your local Toro distributor.

COMMERCIAL PRODUCTS

TORO®

Easy on the Environment. 50% Recycled Fiber – 10% Post Consumer.

Helping You Put Quality Into Play®

Form No. 96-89-T

Printed in U.S.A

Standard Spray Precision

The 18.5 foot, three section rigid boom efficiently covers the largest areas right down to the tightest spots. In the event of impact, breakaway hinges allow boom extensions to pivot rearward.

Using a high volume, low maintenance centrifugal pump, coupled with three ¾ inch boom hoses, the Multi Pro 5500 spray system ensures virtually no pressure drop at the highest rates of application for confident calibration.

Drift reduction nozzles mean more spray material on the target, and less in the air. And quick-disconnect hoses permit fast conversion to other attachments.

Upfront Controllability

Operator comfort and easy operability are critical for spraying controllability. Starting with bucket seats to combat fatigue. A tight turning radius maximizes maneuverability. State of the art ergonomics to virtually make the operator and machine as one. Controls, gauges and boom indicator lights directly in front of the operator for accurate readings at a glance.

Standard Spray Control

The 5500's standard operator-controlled system features fingertip controls for operation of individual boom selection, master boom on/off, and pressure adjust, all in a convenient console.

Unique Pressure Control System

The 5500 has a unique pressure control system in that the pressure control valve is eliminated and spray pressure is adjusted hydraulically, direct from pump to boom, which provides faster, more accurate calibrations and saves on overall system energy resources.

Sprayer System Accessories

The Pro Control system can significantly increase the efficiency of any spray program by automatically calibrating and maintaining an even rate on every area to be sprayed, regardless of vehicle speed or terrain. Accurate to within 1%, the Pro Control will quickly pay for itself in savings of time, labor and chemicals.

Clearly marked functions mean simple programming and operation without special training. The state of the art LCD display makes console viewing possible in bright sunlight or overcast weather. Two different application rates can be programmed and activated with a flip of a switch. And manual override is provided for spot spraying. Booms are controlled individually for optimum performance. All data is retained for accurate records. And, optional printer capabilities are available as well. The Pro Control system consists of two plug-in components and easily connects or disconnects to your standard spray system.

Go Boom™

Without leaving the seat, the operator can adjust the boom extension height on-the-go, to follow uneven terrain and avoid obstacles. Electric controls allow the operator to raise and lower each boom independently, saving valuable time and maintaining proper boom height even over severely contoured terrain.

Sonic Boom™

Utilizing the advanced technology of sonar, the addition of the Sonic Boom provides the most innovative boom system available. Using sonar, proper spray height is automatically maintained as the booms pass over varying ground contours.

Spray Gun

Sprays ornamentals and hard to reach areas. Easily adjusts from straight stream to wide angle pattern.

Boomless Nozzle

For maneuvering through tight work areas, the single nozzle produces a wide, flood type pattern.

Electric Hose Reel

Mounts conveniently over tank. Includes 150 feet of ⅝" hose and electric rewind.

Foam Marker

Helps eliminate overlap and skips of spray material. Electrical valves control flow of foam to either boom or both.

PA-17 Pendulum Action Spreader

Unlike other hoppers that can fracture or wear, the PA-17 steel hopper stands up to abrasive materials and hard knocks. You can topdress sand at 625 pounds per minute at an effective working width adjustable from 15 to 20 feet. With the infinitely adjustable arc of the spreader spout, you can also spread fertilizers, seed or lime to fit the application exactly. Anywhere from 15 to 60 feet. The control lever activates the feed gate for instant on/off operation.

High-speed oscillation of the spout doesn't separate particles of differing weights the way some spreaders do. With proper overlap, pendulum action produces the most uniform pattern.

Topdresser

The Multi Pro 5500 Topdresser has a hopper capacity of 3500 lbs. and a spreading width of up to 15 feet, for spreading various materials in record time. An easily adjustable metering gate controls the amount of material being applied with rates up to 1350 lbs. per minute. Sides sloped to 45 degrees ensure free flow of material to the conveyor. Easily interchangeable with other attachments.

Cargo Carrier

It will carry more than 30 cubic feet in a single load. Its dual action tailgate and 3500 lb. payload capacity prove their worth when you haul heavy loads. And specific functional design means the Multi Pro cargo carrier retains its load handling ability for many years to come.

Six superintendents' 1996 plans for growth regulators and overseeding

BY JOEL D. JACKSON, CGCS

I know! I know! You're finally getting over the effects of the Winter of '96 and here I am talking about overseeding already! But, the Fall Issue comes out too late and history tells me that seed orders are placed by late summer. So, if there are any tips or ideas that might influence your planing for next year then I'd better run them now. Instead of questionnaires this time, I interviewed six superintendents at the Poa Annua Classic representing the state from Duval to Palm Beach Counties.

Alan Puckett, Lake Region Y & CC, Winter Haven

JJ: Alan, in 1991 when Lake Region was on the cover of The Florida Green, you were using a rye/Poa triv blend on your greens. is that still the case?

AP: No, for the past three years, we have been using a blend of 2 pounds per thousand square feet of Pennway bentgrass and 10 pounds per thousand square feet Sabre Poa trivialis. The bermuda was a little thin going into the fall from all the rain so we ended up using an extra pound of bent and an extra two pounds of Sabre.

JJ: Did the old adage, "thin going in, thin coming out prove true this spring?

AP: Oddly enough we had less thin areas than I thought we would. I figured we might need 3 pallets of dwarf and we only used one. Normally, we are on a stringent liquid fertilizer program all winter. When we had those weird warm spells this winter amongst all the cold periods, I applied IBDU and Milorganite which I think helped us fill in with some background bermuda. We are definitely farther ahead than I thought we'd be.

JJ: How did you apply your seed with this new blend?

AP: I measured out the correct amount of bentgrass required for each green and mixed it with a bag of Milorganite. We then adjusted the cyclone spreaders to put it out in two directions over the green. We did the same with the Sabre but we went approximately 5 directions to put down the seed. After each application we lightly top dressed with a Terra Topper and watered it in.

JJ: How did you grow in the greens?

AP: We waited a day or two and then mowed late in the day without baskets and dragged them with a small piece of carpet to settle any seed on top. One to two weeks prior to seeding we raised the height of cut to 3/16" and stayed there for three to four weeks after seeding. Then we gradually lower the height down to 5/32". Our green speed goal is 8.5-9.0 when the grass is mature.

JJ: How did you manage the overseeding during peak season?

AP: Well, besides the extra granular fertilizers that I mentioned earlier, we used our normal rotation of alternating complete and minor liquid fertilizer applications. We would spike every two weeks conditions permitting and by late February early March, I would aerify with 1/4" solid tines for compaction especially in the collars.

JJ: What do you do to manage transition time?

AP: First I watch chronic hot spots when it starts to warm up, hand watering as needed. Then I start applying 17-1-10 at .75 pounds of nitrogen per thousand every two weeks. Depending on the weather we start sooner and go more often.

JJ: Any other comments about this season's overseeding.

AP: Well, during some of the colder spells the grass got beat down pretty good. As more dormant bermuda was exposed the off color turf was more noticeable and generated some comments from the members.

JJ: Another topic we want to cover is growth regulators. Where do you use them?

AP: Well, when a new product comes out, I like to wait and see how it works before jumping in. Last year we used Primo on our range and on our wetter fairways(12 oz per acre). Based on Steve Ciardullo's results at Mountain Lake, I may try 2-3 ozs per acre on my greens every two weeks. We will be using it more this year on our trap fingers and lake banks and on the fairways that have some common bermuda in them(16 oz per acre).

John Gallagher, Boca Woods, Boca Raton.

JJ: Tell me about your season, John.

JG: I used 10 pounds per thousand of straight Sabre Poa trivialis this year. We had a great germination. I didn't even have to use the extra seed I had in reserve to dust thin spots. We got them down to 1/8" this season. The members were real happy.

JJ: That's great! Tell us about the actual preparation and application process you used.

JG: Pretty simple actually. We just raised the HOC(height of cut) to 3/16"

prior to seeding. The next day we made two passes (different directions) with drop spreaders in the dew. After about six to seven days we started hand mowing at 1/4". Our collars did take a beating in this colder than normal winter, so we may overseed collars, tees and fairways next year! I applied Surflan pre-emergent to the collars this year. I will be trying something else, perhaps Barricade next year.

JJ: What did you do to manage the turf during peak season?

JG: Once the seedlings reach the three or four leaf stage we starting bumping the HOC down 1/32 of an inch through mid-January until we got to 1/8". This winter we had two Salsco rollers which made our greens a hit this year. They really helped us achieve the desired speeds more easily. Our fertilizer program is all foliar. Usually

20-20-20 at a 1/4 to 1/2 pound per thousand rate alternating with a minors blend.

JJ: How was transition in Boca Raton?

JG: Well, we had some serious transition this year. Yes, we had some thin areas. We try to explain in our club newsletter the effects of the alternating warm and cold weather this winter and how we have two grasses competing and growing at the same time in the same place.

JJ: Tell me about your experience with growth regulators?

JG: I think it (Primo) is a valuable tool. Last year we targeted our fairways(8 oz per acre). We had over 80% suppression of the common bermuda seedheads. It was incredible. We got the best compliments on the fairways I've heard in my eight years here. We might try the greens this year.

Bill Plante, Orange Park CC, Orange Park.

JJ: Bill, with your weather up in Duval County, you fellows really depend on the success of your seeding programs. What do you use?

BP: For the past three years I have been very pleased with a blend of ten pounds of Laser Poa trivialis and one pound of Southshore bent. We put it all out in one application.

JJ: Did this winter make you think about changing your blend?

BP: Not really! It was a tough winter no matter what seed you used!

JJ: What do you do to get your greens ready to seed?

BP: I like to have a few days growth on the greens when we seed so the seed will nestle down and stay put for dragging. Prior to seeding: we verticut two ways; raise the HOC to 1/4" and then stop mowing for a couple of days before seeding. We lightly top dress two ways with a Vicon spreader.

We go two ways with a cyclone spreader for the Laser and one way with a drop spreader for the bentgrass. Then in the afternoon we come back and make three more passes with the Vicon and drag it all in with a carpet drag.

JJ: When do you start mowing?

BP: We let the seed bed sit for eight to nine days or until I feel we won't pick up any seed. Then we start mowing at 1/4".

We are a private club and so the members know the routine.The top dressing helps give them a passable putting surface until we start mowing. We stay at 1/4" for about three weeks and then start coming down 1/32" at a time to 5/32" for normal play and 9/64" for special events.

JJ: What are your management practices once the overseed matures?

BP: We don't do too much to them from January through April other than an occasional rolling. In March, if they start to get hairy, we might do some light verticutting. We use liquid fertilizers like 20-20-20 and a minors blend with iron about once per month. primarily and may put out one to two granular applications of 13-2-13 at 1/2 pound of nitrogen.

JJ: How about your transition?

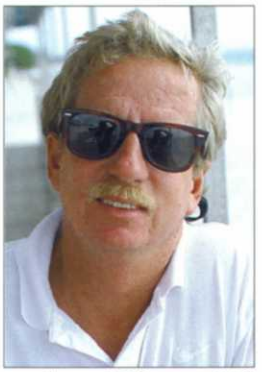
BP: Well, we aerified April 29th and 30th hoping to start thinning the overseed, but this spring has been so cool it only seemed to stimulate it. Normally, we increase our fertilizer amounts and the frequency of verticutting to help ease out the overseed.

JJ: Bill, have you used growth regulators?

BP: Not that much. I used to think we couldn't afford to use it, but now I think we can't afford NOT to use it. We are resodding our bunker faces and adding a lot more flymo area. I'm going to try Primo there to help save some labor costs. I will also be trying it on my fairways and maybe even experiment on the greens.

Those three superintendents gave us glimpses into programs from North, Central and South Florida. Here are the highlights from the next three interviews:

Peter Brooks, The Everglades Club, Palm Beach.



JJ: Most superintendents I've been talking to have Tifdwarf greens. Peter, you have Tifgreen 328 greens how do you prep them for overseeding?

PB: We start cutting back on the nitrogen in September. Just prior to seeding we verticut fairly severely four times. We go up and back the same pass in two different directions. Then we scalp them down. Quadra tine aerify, topdress, drag and then apply the seed. We are more aggressive because of the thatchy nature of 328.

Just before seeding we put down a 5-10-10 granular pre-plant fertilizer and spray the greens with 4 oz per acre of Primo to slow down the bermuda competition.

JJ: What else?

PB: Well, I like to apply Subdue the day before I expect germination. I take a one gallon pot and add soil and sow some seed the week before we do the greens. By checking the pot daily it is easier to see how long it takes for germination rather than trying to pick out the seedlings in the bermuda greens.

JJ: What about your peak season and

transition management?

PB: We hand mow exclusively, double cutting as many as 5 times per week. We skip Sundays and Thursdays. I've found that double cutting, even at higher heights, produces a denser stand of grass and a good surface. To take out the overseed we drop the HOC near an 1/8" and top dress aggressively every two weeks. I use Dale Mitchell's top dressing blend that includes 6-9-16 fertilizer, humic acid and wetting agent. I think it helps promote the return of the bermuda. I also cut back the irrigation to every other night.

JJ: Are you using growth regulators?

PB: I think Primo has been one of the best advances in our industry. We used to bail hay in the summer. My club was built in 1919. We have a Heinz 57 variety of grasses out there. It's like a miracle providing uniformity, density and reducing seedheads and clippings. We are almost wall to wall in using it. I go 10 oz/A on my tees and 12-13 oz/A in the roughs.

Joe Ondo, Winter Pines GC, Winter Park.

JJ: Joe, what are you doing different these days?

JO: We used to seed the first of November and try to be up and growing by the Thanksgiving holidays which is a busy time for us. This year we seeded the first week in December. We stayed with our Gator, Derby and Regal rye mix at 30-35 pounds per thousand and added 2-5 pounds of Winter Play Poa triv per thousand two weeks later to fill in any voids or thin pots after the rye was up. It was one of our best catches ever! Next year, less rye and more Poa triv.

JJ: Anything else unusual?

JO: We have seven greens that are new. We spiked all the greens three to four ways, but we also verticut the older greens two ways before seeding. We used the Rubigan program to treat some greens that had a Poa annua problem in the past. But we will just monitor them next year. Because of the age difference we also supplement our IBDU and Liquid fertilizer program with some 0-8-16 on the newer greens.

JJ: How about transition?

JO: As you know we are a very busy public course so we try to hold the overseeding until Memorial Day. We spike weekly in March and lightly verticut going deeper gradually. Then we renovate in June. If the collars are weak we just do the greens. I increase the fertility by using 19-0-17 and 1/2 pound per thousand of ammonium sulfate or nitrate.

JJ: Have you tried growth regulators?

JO: Last year was the first year. I put some on the fairways once and watched the turf response. We used it on our range and wetter fairways. The turf tightened up and could support the weight of our large mower. I'm not sure about using it on greens or tees. If you have a disease, how do you grow it out? Not ready to go once per month, but it is a tool that can be used under special circumstances.

Mark Hopkins, Sun N' Lake, Sebring.

JJ: Mark, tell me something new?

MH: Well, I use straight Gator ryegrass at 30 pounds per thousand. We close each nine for a week. I verticut and drag brush them the day before we seed. I use Harrell's 6-12-18 starter mix the day after the seed goes down. We keep them moist till they geminate. I keep them at 1/4" for a month and drop them to 5/32" after January 1st.

JJ: How about routine management?

MH: From January on we lightly verticut and top dress every week and a half to two weeks conditions permitting. We try to maintain green speeds between 8 and 9. By mid April we are verticutting and aerifying. I check greens color and clippings harvest to determine when to fertilize. Generally, we apply 14-2-14 once per month with an iron supplement for color as needed. Going into the renovation we'll pump them up with a little sulfate or nitate to stimulate the bermuda.

JJ: Are you a Primo fan also?

MH: Haven't used it! Going to use it this year. We are closing nine holes this summer to rebuild some greens and I'll use it on the fairways to save time. Then we'll see how it goes!

RUB OF THE GREEN

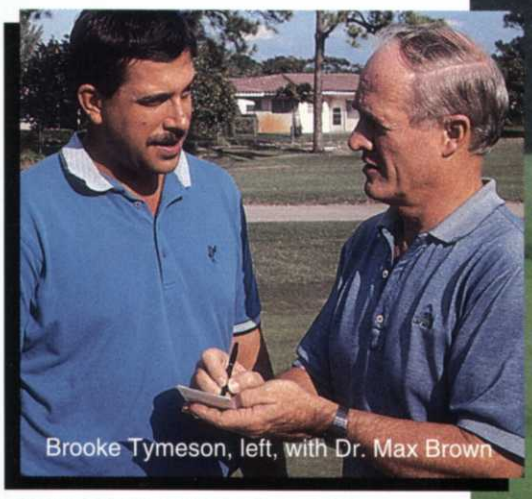
WANTED: Golf Course Superintendent

Qualifications: College graduate with extensive knowledge and experience is the following fields: Turf Grass Management, Horticulture, Irrigation, Design and Repair, Construction, Personnel Management, Budget Development and Implementation, Mechanics, and Public Relations. You must be willing to work as many hours as necessary to get the job done, regardless of personal life. You must be willing to work for hundreds of bosses who will second guess every decision and program you propose. You will be expected to forecast, compensate for and budget for every whim of nature. You must be able to motivate underpaid employees to produce top-quality work on a daily basis. All these goals must be accomplished without interruption to play or inconvenience to the membership. Finally, you must be willing to work in a Barn.

Editor's Note: America On Line E-mail from CPTxAggie from a "GCS newsletter in the Northwest."

THE ENVIROMENTALITY

It is our goal to become your partner in solving the agronomic problems you face each day. Liquid Ag provides unique, environmentally-responsible solutions to these challenges. Stay on the leading edge of enviro-agronomic technology. Enviro•Products for the Enviromentality.



Brooke Tymeson, left, with Dr. Max Brown

OUR NEW ENVIRO-PRODUCTS:

- ENVIRO-SE
- ENVIRO-PHOS
- ENVIRO-RESTORE
- ENVIRO-ZEST
- ENVIRO-START
- ENVIRO-GREEN PREMIUM FERTILIZERS

OTHER VALUABLE SERVICES:

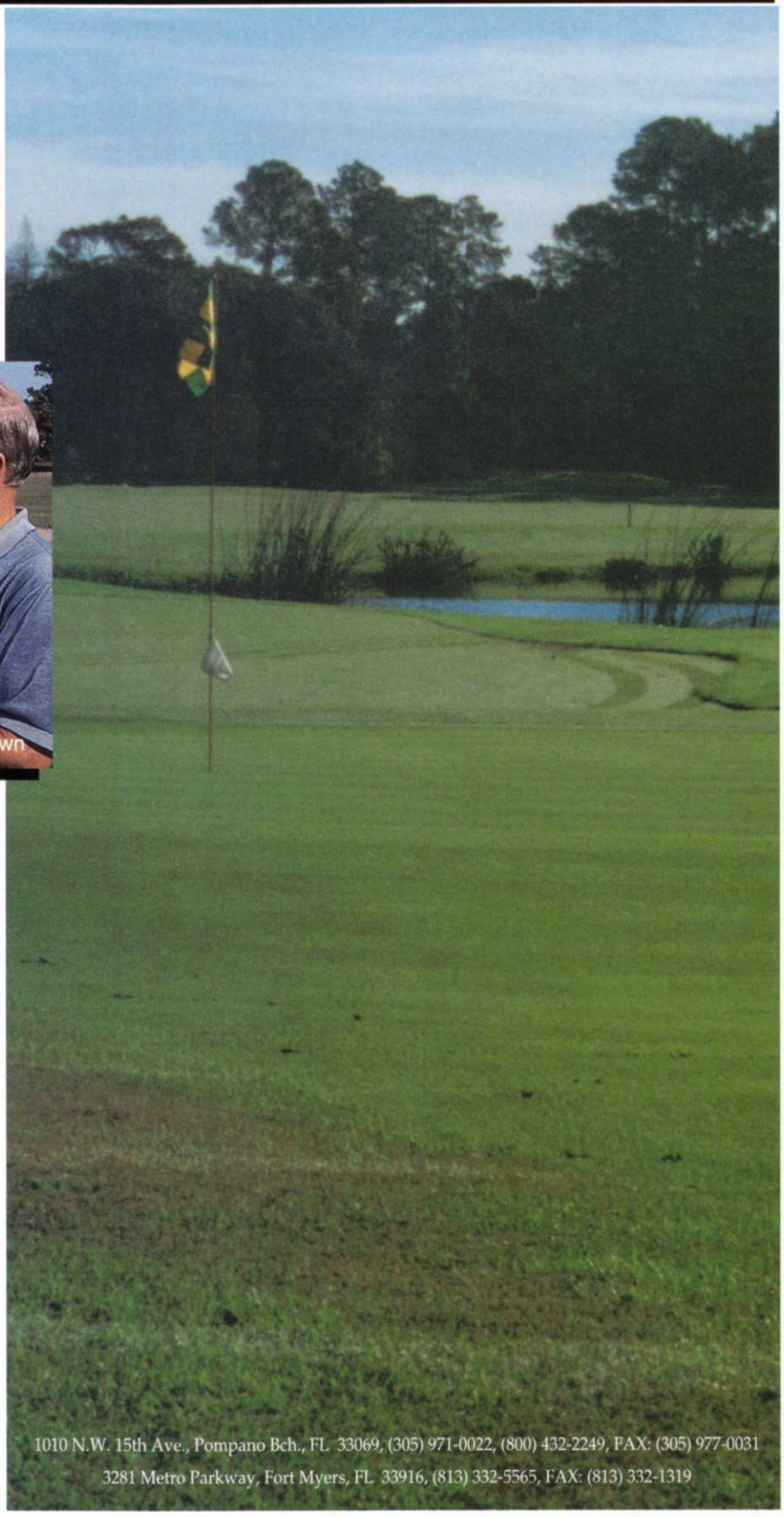
- Collaboration for nutritional programs
- Soil, water and tissue sampling/analysis
- Plant nutritional products through your irrigation systems
- Irrigation water treatment
- Environmentally sensitive alternatives for reducing harsh chemical use

TURF
FARM
NURSERY
LAWN CARE

ENVIRO-PRODUCTS™

Manufactured by

Liquid Ag Systems, inc.



1010 N.W. 15th Ave., Pompano Bch., FL 33069, (305) 971-0022, (800) 432-2249, FAX: (305) 977-0031

3281 Metro Parkway, Fort Myers, FL 33916, (813) 332-5565, FAX: (813) 332-1319

Distinguishing off-types in Tifway and Tifdwarf bermudagrass

BY PHIL BUSEY, AL DUDECK, CHARLIE GUY AND NIGEL HARRISON

Interim report, July 1995 through May 1996

Objective and Brief Summary

The research will determine the feasibility of distinguishing off-types in Tifway and Tifdwarf bermudagrasses.

We have found that DNA banding patterns are powerful in distinguishing off-types from Tifway. Samples of fairway off-types from different golf courses can be matched by their RAPD patterns. Therefore, the off-types appear not to have originated on the various golf courses, but were carried in as planting stock.

For the greens, in contrast, few DNA bands distinguish Tifdwarf from its apparent off-types. We are retesting recollections of one interesting off-type, T-74, which appears to have several distinctive DNA banding pattern differences from Tifdwarf. If we can show again that off-types did not originate on, but were carried to, a golf course, this would minimize the role of recurring mutation as a source of off-types. Morphology data are complementing DNA banding pattern data.

Background

The main idea of the proposal is that DNA banding patterns (i.e., RAPD mark

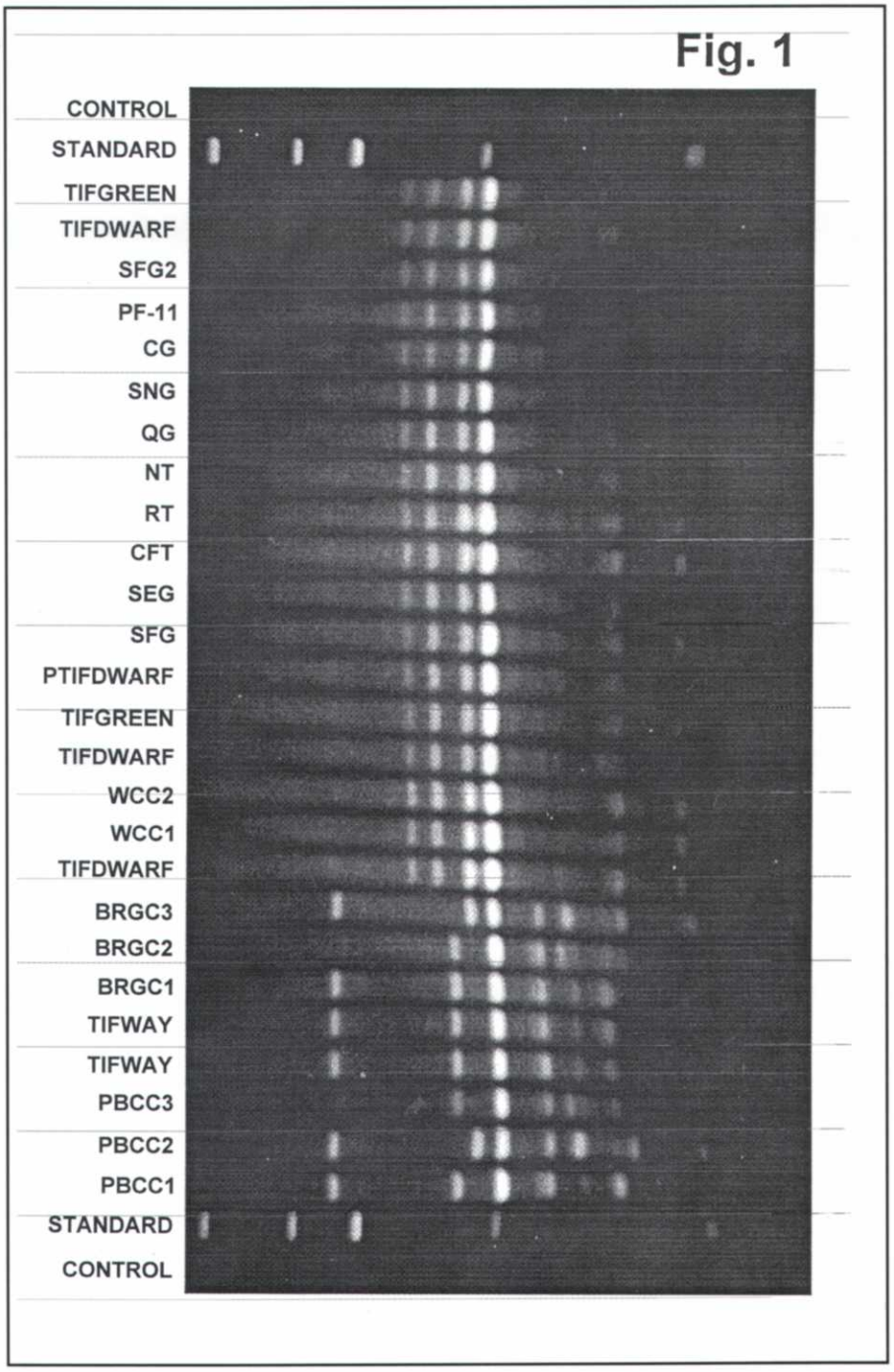


Fig. 1. *Image of PCR amplification products from 26 bermudagrasses, based on primer AK18. ("Standard" refers to a molecular size reference, and is not grass DNA.) At the top, the banding patterns for 18 greens bermudagrasses (Tifgreen, Tifdwarf, SFG2. . .Tifdwarf) were indistinguishable. In striking contrast, the banding patterns for 8 fairway grasses at the bottom of the image (BRGC3, BRGC2. . .PCC1) varied.*