

the use of recycled and reused materials — my pvc nest cylinders have really caught on. Over the last five years I have put up more than 1000 nest cylinders on 30 central and south Florida golf courses.

Two experiences I had early in my bluebirding indicated that the existence of nice populations of bluebirds in south Florida is not widely known: I once telephoned Lawrence Zeleny, founder of the North American Bluebird Society to get some information.

He asked me where Naples was and when I told him he said, "Forget it! There are no Eastern Bluebirds in that area."

Boy did he have something to learn.

On another occasion I told Bernie Yokel, president of Florida Audubon Society, of my nest box success at Eagle Creek, a property adjacent to Rookery Bay where Bernie had spent two years doing research. He told me that he had no idea that bluebirds were in the area.

Why is there so much interest in bluebirds? Why do people want to promote them by building nest structures? Why do bluebirders throughout the U. S. tend bluebird trails which each year fledge more than 50,000 young from artificial nest structures? Few birds in the U.S. are as colorful as the male bluebird. The blue of the back and the orange-red of the breast are brilliant. Few tropical rainforest birds are more colorful.

Bluebirds should not be confused with the more widely spread blue jay which is about 80 percent larger and has blacks



Male bluebird on top of "raccoon proof" pvc pipe nesting box. Photo by George McBath.

and grays mixed in with its blue. Often when I question golfers about bluebirds, they describe to me the blue jay. The bluebird song is cheerful and pleasing to the ear. Bluebirds are quite gentle, not displaying the aggressive and predaceous qualities of grackles, crows, and jays.

Bluebirds are very accepting of humans and permit very close observation. I have had bluebirds nest at eye level within 10 feet of cart paths and just as close to people's patios.

When I open the top of a nest cylinder to check nesting activity, often the female Bluebird will remain on her eggs

which are within six inches of my eyes. When I show this to golfers, it blows them away.

During the first half of the twentieth century, when our country was more rural, bluebirds were much more abundant. I think many older people are partial to bluebirds because they remind them of times that were much less hectic, crowded, and materialistic.

The exotic European Starling outcompetes bluebirds for abandoned woodpecker cavities to be used for nesting. Bluebirds, by being so accepting of artificial housing, give people positive feelings that they are doing something

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Raccoon Proofing

Raccoon-proofing a bluebird nest cylinder consists of:

- 1) driving a 5-foot-long, 1/2-inch diameter piece of steel rebar 30 inches into the ground;
- 2) slipping a 5-foot long, 1/2-inch diameter piece of steel electrical conduit over the rebar;
- 3) bolting the nest structure to the conduit; and
- 4) waxing the conduit with a carnuba based car wax.



Bluebird Potpourri

LEVEL: When I put up nest cylinders, I always use a carpenter's level. For birds that lay their eggs on the cylinder floor, eg. screech owls and woodpeckers, it is important that the floor be level, both left-right and front-back; otherwise eggs will roll to the cylinder wall. Since bluebirds build nests within the cylinder usually out of pine needles with some grass and palmetto hairs, their nests prevent egg rolling thus functionally leveling the cylinder. Nevertheless, I still level the cylinder for aesthetic reasons.

SPRING CLEANING: Bluebirds build a new nest preceding each clutch of eggs they lay. A nest structure will become filled with nests and unusable to the birds after two or three broods. This can occur in just one nesting season. Therefore it is important to check nest structures each winter and discard old nests.

SNAKES: No matter how much I prepare, it is always startling to check a nest cylinder and come eyeball to eyeball with a snake. Snakes, especially rat snakes, prey on bluebirds when on the nest. Experience suggests that the more shrubs touching a nest tree, the greater the probability that a snake will be in a nest cylinder. Thus I never hang a cylinder where shrubs are touching a tree or touching my raccoon proof rebar-conduit systems.

TERRITORIAL: Like most birds, bluebirds are territorial. A bluebird pair will chase other bluebirds away from their territory. Bluebird territories extend in a radius of approximately 125 yards from the nest. Therefore, I try to keep my nest cylinders at least 125 yards apart. Frequently home owners ask me for their own bluebird house in addition to the ones on the golf course. If this request violates the 125 yard rule, I explain territoriality to them. If they still insist, I put up the house for them. Their enthusiasm will educate neighbors and gain support for the nest cylinder project on their course.

HEAT BUILDUP: Most bluebirders say that nest structures should face east so that the late afternoon sun does not heat up the structures. The two professionals who gave me the most guidance when I was starting out felt that this wasn't necessary. My experience supports this. I usually face my cylinders in the direction that most people will see them or in the direction of the most open grass. These two factors being equal, I face them east. I have not found dead nestlings in my nest cylinders which indicates that I don't have a heat build-up problem. Additionally, I paint my cylinders a light color which therefore reflects rather than absorbs the sun's rays. This also prevents heat build up in the cylinders.

COWBIRDS: Bluebird eggs are a light blue color. Occasionally I find a slightly larger white egg with brown speckling accompanying bluebird eggs in the nest. These eggs are laid by a nest parasite, the brown-headed cowbird. If the cowbird egg is permitted to hatch, the larger young cowbird will heave the smaller young bluebirds out of the nest. The adult bluebirds end up raising a cowbird. I always destroy cowbird eggs.

good for the environment as well as for these wonderful little creatures.

And finally people like bluebirds because their diet is almost entirely insects. I have found parts of mole crickets in their nest cylinders. Is there anyone who doesn't hate bugs? They will eat wild berries in the winter.

Of the 30 central and south Florida golf courses that I have done breeding bird nest projects on, only nine courses have had bluebirds. Please note that

screech owls, great crested flycatchers, red-bellied woodpeckers, downy woodpeckers, carolina wrens, brown-headed nuthatches and purple martins in various combinations have also used my nest cylinders at these courses.

In south Florida most golf courses have been built in areas where the original plant communities were coastal scrub, wet cypress woods or slash pine flatwoods of either the dense, xeric palmetto type or the more hydric, open type

dominated by grasses and shrubs.

Of these four plant community types, bluebirds are almost exclusively found in the more hydric, open flatwoods. Therefore only golf courses built in this latter plant community will have bluebirds. So far it is only on these courses that bluebirds have used my nest cylinders.

Bluebirds hunt insects by sitting on low and mid-level tree branches and searching open ground cover for insects. Apparently in the other plant community types, the ground cover is too dense for bluebirds to successfully catch insects.

However, in the process of building golf courses, a lot of dense ground cover is removed in creating tees, greens, and fairways. These open areas, if they have islands of slash pines, somewhat mimic open pine flatwoods and may in the future attract bluebirds.

For this reason I put up six to ten bluebird nest cylinders on courses that appear not to have bluebirds. The hope is that at some time in the future, bluebirds will be dispersed into the area and the presence of the nest cylinders will help them become resident breeders.

Ideally bluebird nest structures should be checked every 7-10 days during the nesting season (mid-March to mid-June). Only by doing so can it be discovered whether predation, heat, ants, cowbird nest parasitism, or abandonment are affecting the nesting birds. By constant checking I learned that raccoons can be terrible predators on bluebirds using nest structures on golf courses.

I am not thrilled that it took me three nesting seasons to realize this and how to prevent it. It probably takes one to two seasons for raccoons to learn that bluebird nest structures mean a free lunch and to start regularly raiding these structures.

In my third year at Eagle Creek, five of ten nestings were destroyed and at Foxfire CC, six of 12 nestings were destroyed. At Embassy Woods CC, where I surreptitiously hung five nest cylinders, a sad progression occurred. There were five nesting pairs the first year. Three the second, and none the third. Since the

management at Embassy Woods would not let me do a raccoon-proof nest project, I removed all five nest cylinders.

Signs of raccoon nest predation on bluebirds are missing eggs or young (you need to know that eggs hatch in 13 to 16 days and young fledge in 15 to 20, averaging 19 days); destroyed nests in the cylinder (part of the nest is sticking out of the entrance hole or is on the ground); muddy footprints on the cylinder; blood and/or feathers stuck on the cylinder; or parts of dead birds on the ground.

When I realized the magnitude of my predation problem, I searched *Sialia*, the Journal of the North American Bluebird Society, and discovered a method of raccoon-proofing bluebird nest structures that had proven very successful in the upper Midwest. It is described in the sidebar.

The wax makes the conduit too slippery for the raccoons to climb. I do not wipe off the powdery wax residue. If raccoons try to climb the conduit, they leave foot prints on the residue thereby giving me an idea of what is going on. This year at Quail Creek CC. all seven nest cylinders with nesting bluebirds has raccoon foot prints on the conduits.

For the three years I have been using this rebar-conduit system, I have had no raccoon predation, but many attempts are recorded on the residue.

Each December or January when I check the nest cylinders, I throw out last year's old bird and hornet nests and make minor repairs. At the same time I steel wool and apply new wax to create maximum slipperiness of the conduit for the

upcoming nesting season.

From my six years experience with raccoon predation of bluebird nest cylinders on nine golf courses, I have come to this harsh conclusion: If a golf course has a bluebird nest structure program with nesting bluebirds and does not use a raccoon proof nest structure system, that course is signing bluebird death warrants.

I do not raccoon-proof the cylinders until a course has its first nesting success because of time, expense and other considerations. Not raccoon proofing will cause the decline and possible loss of bluebirds on that course. These beautiful creatures, fellow passengers on spaceship earth, do not deserve this. Don't be an ugly human and ignore the need for raccoon-proofing bluebird houses.

Bluebird Experiences

Once while checking nest cylinders adjacent to a golfer's home, the woman of the house rushed toward me and demanded I remove the nest cylinder which barely two weeks before she had given me permission to put up. She said she was tired of watching to see if the bluebirds were going to arrive. Two weeks was all time she was going to give them!

On another course an elderly resident who had, many years before, immigrated from Italy where they hunt and eat song birds, asked me, when I showed him a nest of hatchlings, when was I coming back to collect the "squab" and eat them. Needless to say I did not feel good about leaving those birds to his care.

Much is made of instructions for

...bluebirds are almost exclusively found in the more hydric, open flatwoods. Therefore only golf courses built in this latter plant community will have bluebirds.

building and placing bluebird houses. The house should be 8 inches deep, 5 inches wide, entrance hole 1-1/2 inches wide, and hung 5 to 10 feet above the ground. However there are always exceptions.

At Foxfire I had a nest of bluebirds that twice in a period of two weeks had its eggs robbed, probably by grackles. Two weeks later when I returned, the house was abandoned. When I checked a nearby screech owl nest cylinder, guess who was nesting in it? Those troubled bluebirds had selected a nest cylinder that was 15 inches deep, 8 inches wide, 3-inch entrance hole, and hung 15 feet above the ground. Sometimes there is just no telling.

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Another time at Foxfire I saw something I could not believe. As I approached a nest cylinder, a homeowner about 30 yards away stepped out of his lanai and rung a bell. Immediately two bluebirds left the nest cylinder and the tree above and flew to the homeowner's feeder to collect some fresh meal worms. Over the course of the spring that person has conditioned those birds to come get meal worms whenever he ran his bell. Unbelievable!

Once in late winter toward dusk, as I was hanging up the last of 24 bluebird nest cylinders at Quail Creek CC, I looked up into the tree that I was nailing the cylinder to. There sat two bluebirds watching me as I worked. How rewarding! And yes, that cylinder had nesting birds in the spring.

Late one May at the Glades CC, I was doing a nest check on a cylinder that had eggs and young birds on previous checks. As I approached the tree, I noticed an envelope tacked next to the cylinder. It was addressed to the "Bluebird Man."

In an enclosed note, a snowbird resident told me that the young birds had fledged three days before. She thanked me for providing the best thing in her life over the last six weeks. She wrote that the highlight of her days had been to watch those beautiful creatures find the cylinder, pair through song, build a nest, come and go feeding their young, and finally the fledging. Now that the birds had fledged, it was time for her to fledge back to Canada.

Audubon Cooperative Sanctuary



Female bluebird on eggs in a pvc nesting box. The strong maternal instinct to remain on their eggs makes bluebirds very vulnerable to raccoon predation. Photo by George McBath

My bluebirding activities gave an important assist to Foxfire CC in getting them registered and eventually certified in the Audubon Cooperative Sanctuary Program. Foxfire is across the street from where I live. While bicycling on their cart paths, I noticed that they had bluebirds very early, New Years Day! I surreptitiously put up five nest cylinders on their course with my telephone number on them.

About mid-March I began getting telephone calls from residents indicating they were seeing bluebirds at the nest cylinders and asking me to put up cylinders in their yards. I had done this for seven or eight people when I got a call from resident Dean Lang who asked me

to do the same. Our conversation eventually got around to the ACSP.

Dean became very interested in the ACSP and decided to take the idea to club management. Just prior to this, the club manager had made an inquiry to the ASCP, and their papers were sitting on his desk.

Dean decided to lead an "adopt a nest cylinder project" and advertised the idea on the Foxfire in-house TV channel. Unbelievably, 51 residents sent in money for nest cylinders to be placed around the course! The resident sponsor's name was put on each cylinder and its location and nesting success was reported to each resident.

Five years later Foxfire residents eagerly await the annual nesting report. I believe it was this overwhelming support for the nest cylinder project that convinced Foxfire officials to go ahead with the ACSP.

Bluebirding on south Florida golf courses has been a lot of fun for me and has been very well received by course superintendents, players, and residents. If there is any chance you have these wonderful birds at your course, I urge you to put up nest cylinders for them. It will be a very rewarding project.

Editor's note: George McBath is a retired biology professor and self-described ACSP advocate. If you have any questions about starting a bluebird nest project on your course, or maybe would like to have him talk to your chapter or golf course members, you can reach him at (941) 774-2820.

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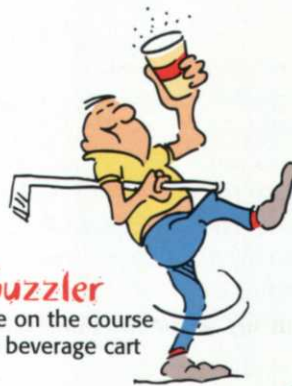
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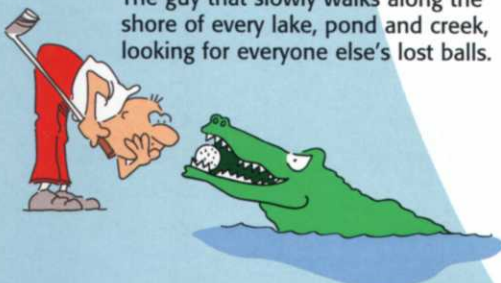
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Ultradwarf Bermudagrasses Meet the Real World (Part 3)

TifEagle: Make Sure You Have a Good Mechanic and an Extra Set of Bedknives

(Editor's Note: This is the third installment in a series of in-depth looks at real-world management of the new ultradwarf bermudagrasses.

At Pelican Sound: Loses Aesthetics, Retains Playability During Cold Weather

BY RANDY KORF

Golf Course Superintendent

Routine Cultural Practices

Mowing

We use Toro 3100 Triplex mowers daily with Wiehle front rollers and smooth back rollers. The height of cut is .125 inch, and has not been changed since January.

We also use Toro 1600 26-inch walk mowers from October through April for perimeters. Their height of cut is set to .115 inch to match triplexes. We will raise if perimeter is stressed. The reels are ground every 25 hours or sooner if needed. Bed knives are ground two or three times, then discarded (tournament thin bed knives). Primo growth regulator has not been used.

Verticutting

We use Toro triplexes with verticut reels. We go a minimum of every two

weeks, or weekly if needed, and the perimeter if needed. Depth is typically 1/4 inch but will back off to 3/16 inch from December to April. We verticut in two directions at 1/8 inch. This produces great speed and true roll. Vertigrooming has not been effective. Traded in groomer reels for second set of verticut reels. Frequent verticutting eliminates all grain.

Topdressing

A Vicon spreader is used for light applications although I think a Terra Topper would be better. A Meter-Matic is used after aerifications. We topdress a minimum of every two weeks after verticutting, sometimes weekly but only after verticutting. The sand/soil mix is same as construction material (90/10). A drag brush is used followed by an irrigation syringe.

Fertility Program

Granular products 10-2-20 and 0-0-30 are alternated every two weeks, and applied after verticutting/topdressing. Liquid products 12-0-0 with minors or potassium nitrate and a chelated minor product are alternated between granular applications. Humate is applied twice a year. Gypsum is applied every 6-8 weeks at 10 lb/1,000 sq. ft.

Aerification

We use a contract aerification service. They use Coremaster aerifiers. Our schedule:

- June, 5/8-inch tines at 1.75-inch depth
- July, 1/2-inch tines at 1.75-inch depth
- August, 5/8-inch tines at 1.75-inch depth
- September, 1/2-inch tines at 1.75-inch depth

The cores are collected and topdressing applied. A greens spiker with 1.5-inch solid tines on a drum is used from October to May. This does not disrupt the putting surface.

Irrigation Practices

We have a Rain Bird Maxi Nimbus II control system. A typical schedule applies .2 inches of precipitation daily. We typically apply .5 inches of precipitation after topdressing/fertilizing.

When hydrophobic conditions arise (frequently from March to May) a granular wetting agent is applied. Then the irrigation schedule is adjusted to a 6-minute cycle/30-minute soak and repeated for two or three total cycles.

General Comments

Contours: We see slight scalping on slopes over 2 percent, but verticutting is

Overall, TifEagle has performed even better than I expected. Response has been favorable regarding the quality of the putting surface... I cannot say that TifEagle is a better choice than FloraDwarf or Champion, but I can say that I cannot ever go back to Tifdwarf.

Correction

In the Superintendent Journal section of the Fall 1999 issue, the FloraDwarf article titled Ponte Vedra Inn should have been titled The Forest. The author of that material was Rick Tatum and not Jay Reister. Don't ask me how I did that one! JJ

TifEagle Establishment/Grow-in at Pelican Sound

(Greens had 100% coverage at week number 5)

IRRIGATION

Week 1—Every hour 7 a.m. to 6 pm
8 minutes per head

Week 2—Every 2 hours 7 a.m. to 6
p.m. 8 minutes per head

Week 3,4—3 times per day 8
minutes per head

Week 5—Once a day with about .2
inch precipitation rate

FERTILITY

Week 1—Milorganite (.5 lb N) then
ammonium sulfate (.5 lb N)

Week 2—D.A.P. (1 lb P) then
complete fertilizer (.5 lb N)

Week 3,4—Alternate ammonium
sulfate/complete fertilizer (.5 lb
N)

Week 5—Alternate use of 10-2-20 (1
lb N) and 0-0-30 (1 lb K) every
two weeks, with liquid
application in between.

ROLLING

Week 2—Roll two directions

Week 3, 4, 5—Roll one direction
each week

MOWING

Week 3—Walkmow at .200" then
.175"

Week 4—Walkmow at .150" twice

Week 5—Walkmow .150" every
other day

Week 6—Triplex .140" daily

Week 12—Triplex .135" daily (later
dropped to .125")

TOPDRESSING

Week 6—Topdress lightly

Week 8—Quadra-tine aerify, drag in
cores

Week 10—Topdress lightly

Week 12—Quadra-tine aerify, drag in
cores

TifEagle Grow-In Program at Jupiter Island

JULY 1998

9 Apply 10-10-10 pre plant fertilizer
to Group 1 greens (holes
1,2,5,6,7,8 and 9)

10 Sprig Group 1 greens

15 Fertilize Group 1 greens with 10-
10-20, setting "K."

20 Walk verticut Group 1 greens and
roll with 1 ton roller.

21 Fertilize Group 1 greens with
D.A.P. (Di-ammonium Phosphate),
Setting "L."

24 Fertilize Group 1 greens with 10-
10-20, setting "H."

27 Fertilize Group 1 greens with
AmSO4 (Ammonium Sulfate)

30 Walkmow Group 1 greens at .170
inches. No buckets.

31 Fertilize Group 1 greens with 10-
10-20, setting H."

AUGUST 1998

3 Walkmow Group 1 greens (.170").
Fertilize with 12-0-2, setting "H."

4 Spiked Group 1 greens and rolled
with Jacobsen Triplex rollers

5 Walkmow Group 1 greens (.170")

6 Spiked Group 1 Greens. Applied
pre plant fertilizer 10-10-10 to
Group 2 greens (holes
3 & 4 and 10-18)

7 Walkmow Group 1 greens (.170")
and fertilize with 13-4-13. Sprayed
with Battle.

Sprig Group 2 greens.

10 Verticut and mow (.160) Group 1
greens with triplex. Topdress.

11 Fertilize Group 1 greens with 12-
0-24.

12 Walk verticut Group 2 greens (2x)
and roll with one ton roller. Spike
and triplex roll Group 1 greens.

13 Fertilize Group 2 greens with
D.A.P.

16 Fertilize Group 2 greens with
AmSO4.

17 Triplex verticut Group 1 greens
(2x). Topdress with walking
topdressers. Fertilize with 12-0-24

19 Spike all greens (1x)

20 Fertilize all greens with 10-10-20

24 Verticut all greens. Walking
topdresser. Fertilize with 12-0-24

26 Roll Group 2 greens with one ton
roller. Mow Group 1 greens (.140)

27 Spike Group 2 greens (2x)

29 Sprayed all greens with Eco-N
and 8% Fe (Iron)

31 Verticut, Topdress and fertilize
Group 1 greens

SEPTEMBER 1998

1 Roll Group 2 greens with one ton
roller

2 Spike Group 1 greens (4x) and roll
with Salsco roller

3 Hand spread weak areas on Group
1 greens with Milorganite

4 Fertilize Group 2 greens with
Milorganite

8 Fertilize Group 2 greens with
AmSO4

9 Aerify Group 1 greens and roll
with one ton roller

10th Fertilize Group 1 greens with
13-4-13. Walk topdress all greens
1-18. Sprig putting green.

11 Spray all greens Eco-N, Eco Mix,
minors, and Battle

12 Fertilize Group 2 greens with 10-
10-20

13 Group 1 greens now puttable

14 Mow Group 1 - everyday now

15 Triplex verticut - Group 2 (2x),
Group 1 (1x). Walk topdress
Group 2 and fertilize with 10-10-
20. Roll with one ton roller.

17 Spike Group 2 (1x). Fertilize
Group 1 with 0-0-26 and Group 2
with 10-10-20

21 Fertilize Group 2 with 10-10-20.
Spike Group 1 (1x) and fertilize
with 13-4-13

22 Triplex verticut and walk topdress
Group 2

23 Fertilize Group 2 with 13-4-13

29 Spray all greens with minors, Eco-
N and Battle

30 Triplex verticut Group 2 greens
and top dress

OCTOBER

1 Mow Group 2 greens at .125

5 Begin regular maintenance on all
greens. Mow every day. Light
verticut and topdressing. Split
fertilizers between 13-4-13 and 0-
0-26.

26 Open golf course

more likely to thin the turf on those areas.

Greens construction: Modified USGA greens, no gravel, 90/10 Canadian peat mix, no preplant, sprig rate 20 bushels/1,000 sq. ft.

Overall performance:

Drought tolerance is high; when localized dry spots develop, the greens get mottled and "ugly," but it's aesthetic only, and they recover without turf loss.

Cloudy, rainy periods can cause thinning of turf on slopes and perimeters, but verticutting is a contributing factor. Daconil and Mancozeb are used to prevent/treat algae on weak areas.

TifEagle goes off color during cold snaps, turning a mottled yellow followed by purple color, which fades with a return to warmer weather.

Ball roll is excellent, with good speed and true roll. Desired green speed is easily attained and maintained, provided that the mowing height is .125 or less, verticutting is frequent, and nitrogen use is limited to prevent excess growth.

Budget factors (fertilizer, sand, pesticides) are similar for maintenance of Tifdwarf, although equipment needs are higher, maintenance of equipment is more intensive, and labor to maintain the greens is higher.

Some of the specific problems at Pelican Sound include thatch accumulation, which has been significant, especially compared to Tifdwarf. TifEagle has a 3/4-inch layer of thatch or mat or "biomass." Whatever it's called, it is a frightening aspect of the grass, and causes the localized dry spots and hydrophobic conditions because water just can't get through that layer.

Fairy rings have been a problem as well, but that is probably not associated with the grass type.

Using the Toro Hydroject caused severe scalping of uneven ridges which resulted from the weight of the machine and the softening of the aerification; height of cut would have to be raised following its use. Ideally, the greens could be walkmowed at .125 or less; it's difficult to consistently get the best quality of cut at that height with the triplex.

Overall, TifEagle has performed even

better than I expected. Response has been favorable regarding the quality of the putting surface, even though aesthetically the greens do not have a lush bright green appearance due to our maintenance practices of verticutting, low height of cut, and low rates of nitrogen. I cannot say that TifEagle is a better choice than FloraDwarf or Champion, but I can say that I cannot ever go back to Tifdwarf.

At Jupiter Island: Extremely Dense and Sensitive to Shade; Slow to Heal

BY ROB KLOSKA

Golf Course Superintendent

Establishment/Grow-in Program

I highly recommend sprigging at 30 bushels per 1,000 sq.ft. to facilitate grow-in. We also had a mixture of Nitroform and coated potash incorporated into the greens mix.

This helped tremendously to push the greens. After sprigging we waited approximately 10 days and began verticutting and rolling with a one-ton roller.

Five to seven days after that we started cutting with walk mowers set at .175 inch. After two weeks we lowered the height .010 every week until we reached .125 inches. (*See sidebar for complete grow-in program*)

Routine Cultural Practices

I recommend using walk mowers all year. We used grooved rollers in warm weather and solid rollers in the cool season. Our height of cut for the winter golf season is .110 to .125 inches and we raise them to .125 to .145 in the summer especially when we have cloudy and wet weather conditions. We maintain stimpmeter readings of 9.0.

We do less actual verticutting and more brushing and grooming to manicure the surfaces. We topdress every week. During the winter season we use dry bagged sand spread with Lesco rotary spreaders. In the summer we use a Vicon spreader with the fertilizer spout.

The turf is so dense that water has a hard time penetrating... The grass grows vertically more than Tifdwarf. Seems slower to heal over. Suggest you have a large turf nursery for repairs. Watch out for root rot and Helminthosporium when the tropical season is active.

Our fertility program consists of foliar applications all winter of 28-0-0 Coron, monopotassium phosphate, and Regal Maxi-Green. In the summer we apply 13-4-13 with Nutralene at .5 to .75 pounds per 1,000 sq.ft. per month and 0-0-30 at 1.0 lbs per 1,000 sq. ft. per month. I am experimenting with a Grigg Brothers product in weak shaded areas.

I recommend a monthly core aerification during the summer months with small hollow tines. In the winter we aerify with a Toro Hydroject. We spike almost every week.

Irrigation: I try to dry out the green's cavity. Then water heavily to promote the root system.

General Comments

The turf is so dense that water has a hard time penetrating. It is extremely sensitive to shade. The grass grows vertically more than Tifdwarf. Seems slower to heal over. Suggest you have a large turf nursery for repairs. Watch out for root rot and Helminthosporium when the tropical season is active. And last, you must have a good mechanic and extra sets of bed knives.

Howard's Turf Pride® with RONSTAR® Solves Weed Control Problems Without Harming Turf Roots



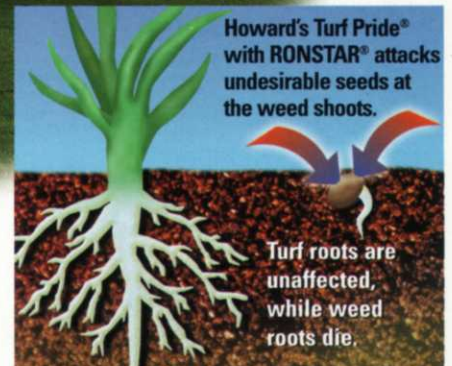
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a bad root from a good one.
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Howard's *Turf Pride*® with *RONSTAR*® attacks undesirable seeds at the weed shoots.

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crabgrass and *Poa annua*. Use Howard's *Turf Pride*® with *RONSTAR*® to kill weeds without affecting new turf sprigs. Help turf recover with *RONSTAR*® for quick and long lasting results.



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Good Night, Irene!

A stand of five green buttonwood trees in the right rough of the second hole on The Falls County Club immediately after the eye of Hurricane Irene passed just north of Lake Worth. A small sample of 130 trees lost at The Falls C.C. Photo by Steve Pearson.



The same stand of buttonwood trees one year before Hurricane Irene. Photo by Steve Pearson.

Storm Was Weak... But it Dumped 15 Inches of Water

BY W. CRAIG WEYANDT

The Yacht & Country Club of Stuart

I had no idea that Hurricane Irene would impact the Treasure Coast... or the east coast of Florida, for that matter. When I went to sleep on Friday night the last thing that I remember was that Irene was going up the west coast and possibly going to move just west of Lake Okeechobee.

That meant lots of rain for me but not much else. There was a lot of wind and rain but with Irene being only a category 1 hurricane, I thought that there was no real concern. As everybody said afterward, 'It came so fast that I didn't really

have time to prepare.' That was especially true for me.

I woke up on Saturday morning just after 3 and had to let the dog out. He has a way of sticking his big black cold nose in my face that gets me right out of bed. We went out in the front yard like we would any other morning but something was weird this time. I couldn't figure it out.

Then it hit me... there is no wind! When I went to bed, the wind had been howling and rain coming down in buckets. It couldn't be over that fast. The storm was huge. It must be. It couldn't be. I'm in the EYE!

I ran back inside and turned on the television. I was lucky. We never lost power. I turned on the TV and WOW! I couldn't believe what I saw. The leading edge of the eye had just passed over and

we were inside. Just like they always said, no wind and no rain.

Heck, I could even see the stars. I woke the wife to show her and was surprised to find that she was not quite as impressed as I was. I told her I was going into work. She said, "You're nuts!" I said what has to be one of the most stupid things I have ever said, "Honey the eye is the safest time to be out, I better go in now." She didn't buy it but I went into work anyway.

I got there by 3:30 a.m. only to see two huge ficus (3-foot diameter) blown over in the entrance. The guard shack was