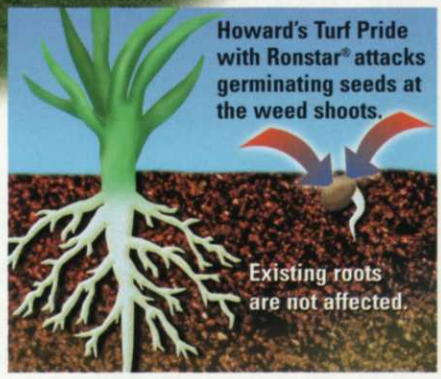
# Howard's Turf Pride with Ronstar® Solves Weed Control Problems *without Getting to the Root*

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**Classification:** Perennial

**Landscape Use:** Mass planting accent in perennial borders or in containers with other flowers

**Characteristics:** Deep violet-blue flowers; lance shaped leaves; blooms through warm months

**FIREPOWER DWARF NANDINA**

A plant long known for its fall color, but underutilized in the landscape is *Nandina Domestica* 'Fire power.' Also called dwarf heavenly bamboo, this dense, low-growing cultivar is usually tinged with orange or red, but becomes an intense red mound in the fall and winter. Firepower, with its rounded habit, reaches a mature height and spread of about two feet.

When planted in groupings or drifts behind low ground covers, Firepower creates an impressive impact. It is adaptable to a wide range of conditions, but prefers moist, fertile and well-drained soils.

**Common Name:** Firepower Dwarf Nandina

**Horticultural Name:** *Nandina domestica* 'Firepower'

**Hardiness**: Zone 6

**Height x Spread:** 2' x 2'

**Classification:** Low growing shrub

**Landscape Use:** Masses or borders

**Characteristics:** Dense, dwarf growing variety; intense fall color of red

## Shrubs

**FIREBUSH**

When designing a landscape in south or central Florida, be sure to give *Hamelia patens* (Firebush) some thought as a small accent tree. Reaching 10 feet in height and six feet in spread in warmer areas, its showy orange tubular flowers (March-November) are a big attraction to butterflies and hummingbirds. The leaves of this evergreen shrub are reddish for much of the year, turning green as they mature. Foliage dam age will occur in the upper 20s with die back in the upper teens. When knocked to the ground by cold, Firebush has been known to bounce back quickly the following spring. This variety

prefers moist conditions and is tolerant of full sun to partial shade. Because it is not drought tolerant, be sure to plant near water loving plants in the garden.

**Common Name:** Firebush

**Botanical Name:** *Hamelia patens*

**Hardiness:** Zone 8

**Mature Height x Spread:** 10' x 6'

**Classification:** Large shrub to small tree

**Landscape Use:** Specimen shrub in partial shade

**Ornamental:** Red leaves with showy orange

**Characteristics:** tubular flowers attracting butterflies and hummingbirds

### PINK LOROPETALUM

A plant that seems to be sweeping the industry is *Loropetalum*. Many of the new popular cultivars are being developed from *Loropetalum chinense* var. *Rubrum,* which has red foliage. Cultivars may reach 10 feet; others are easily maintained at four to six feet. Also called fringe flower, *Loropetalum* is tolerant of full sun to shade in moist, well-drained acid soils. Young leaves are burgundy, maturing to green in the center of the plant. Some cultivars stay redder than others. The pink bloom of the fringe flower is heavy in the spring and then continues sporadically until fall.

Some of the cultivars available in the market today are:

- **Blush** - dense compact growth habit to at best six feet
- **Burgundy** - height will be six to eight feet with drooping branches; expect this cultivar to bloom several times during the year
- **Zhuzhou** - taller, more open growing form; can be trained like Ligustrum as a multi-trunked small tree
- **Monraz' Razzleberri TM** - a Monrovia Nursery (California) introduction with a low-growing weeping form reaching four to six feet in height and spread.

**Common Name:** Pink loropetalum

**Horticultural Name:** *Loropetalum chinense* var. *Rubrum*

**Hardiness:** Zones 7 & 8

**Mature Height:** 6' to 10'

**Classification:** Shrub

**Landscape Use:** Accent plant or hedge plant

**Characteristics:** Red foliage, pink flowers

# Everybody wins!

## *Agreement to use Navy's recycled water enables restoration of Donald Ross classic*

Golf course architect Bobby Weed had two golden opportunities in one with the restoration of Timuquana Country Club in Ponte Vedra Beach.

The course is a 1920s Donald Ross design that had succumbed to years of tree overgrowth and drainage problems. Its prime location, on the banks of the St. Johns River south of downtown Jacksonville, also provided the club with another challenge with regard to irrigation water supply.

The local agencies were not going to reissue necessary water permits to the club unless treated water was used to irrigate the golf course.

The solution created a way for the golf club to reduce the amount of water taken from the Floridan aquifer and assist the Navy in its goal of releasing less treated water into the St. Johns River.

"It was a joint effort as both the club and the Navy were pursuing a good outcome for what looked like a difficult situation, "Weed said.

"The Navy, which borders the course, had been looking for a way to discharge less treated water into the St. Johns River. The course needed a supply of treated water to irrigate due to the mandate by the state and water management district. The members were also seeking a solution to the drainage difficulties that caused the course to be closed after heavy rains, which we get quite often in north Florida."

After negotiations between Timuquana Country Club, Rear Admiral Kevin Delaney, commander Naval Base Jacksonville; Captain Dick Steinbrugge, commanding officer, Public Works Center; and Captain Robert Whitmire, commanding officer Naval Air Station Jacksonville, it was decided that the Navy would send treated water to Timuquana Country Club and the club would complete a golf course restoration along with a new irrigation system to accommodate use of the Navy's wastewater.

"This was the right thing to do," said Michael Lanaham of Timuquana Country Club.

"We have an agreement. that says we can take as much effluent water as we can use."

"We'll send more than 100 million gallons per year of treated water from our wastewater treatment plant to Timuquana Country Club to irrigate their golf course," Capt. Steinbrugge said. "NAS Jacksonville's wastewater treatment plant treats, on average, one million gallons of water per day."

Kathy Chinoy of the St. Johns River Water Management District Governing Board hailed the agreement as a victory for "common sense."

Chinoy added that the continued growth in Jacksonville is draining the Floridan aquifer and that community water reuse systems need to be established to reduce consumption of valuable groundwater, improve the quality of drinking water and aid in clean up of the St. Johns River.

The Navy completed the water treatment system and installed a pipeline to a pumphouse at the east side of the property line of the golf course. From there, the club now routes the water to a large collecting pond which it uses to irrigate the course.

The soil removed to form the collection pond was used by the Navy on the base, which benefited both parties.

Weed is a member of the American Society of Golf Course Architects, the Donald Ross Society, the Golf Course Superintendents Association of America and the Florida Turfgrass Association.

*Robert C. Weed, Jr.*
*Weed Golf Course Design*

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*GCSAA water study confirms...*

# Pesticide runoff, leaching are minimal

A GCSAA-funded water quality study confirmed the results of previous research that pesticide runoff and leaching to ground water from golf courses is minimal, and when detected, at levels that are usually well below health advisory standards.

Researchers Stuart Cohen, Ph.D., Amelia Svrjcek, Tom Durborow and N. LaJan Barnes analyzed data from 36 golf courses, all in the United States with the exception of one on Prince Edward Island, Canada.

The group analyzed water quality monitoring data for the pesticides, metabolites, solvents and nitrate/nitrogen used on courses.

Summaries of data were also obtained from Guam and Japan, but were treated separately. The results were published in the November issue of *Golf Course Management.*

The study determined that just nine of 12,101 analyses for pesticides in groundwater samples were in excess of drinking water health advisory levels. Only eight of 2,731 analyses for pesticides in surface water samples exceeded their respective drinking water limits, and 25 exceeded guidelines for aquatic organisms.

***...just nine of 12,101 analyses for pesticides in groundwater samples were in excess of drinking water health advisory levels. Only eight of 2,731 analyses for pesticides in surface water samples exceeded their respective drinking water limits...***

In the surface water samples, there were no readings of nitrate/nitrogen levels above the federal drinking water standard, while just 31 of 849 groundwater samples exceeded the standards. The results from Guam and Japan were similar.

GCSAA Director of Research Jeff Nus, Ph.D., said the study was the first attempt at a comprehensive examination of water quality on golf courses. Past research, with similar results, was limited to just one geographic region.

Still, Nus said this most recent study was not meant to be national estimates for golf course impacts on water quality.

"Based upon previous scientific research funded by the United States Golf Association, GCSAA had contended that properly managed golf courses do not pose a discernible health risk, and in many cases improve the quality of water," Nus said. "This latest study is important because the data analyzed from surface and ground water from golf courses support the results of the previous USGA-funded studies under carefully controlled laboratory conditions."

Nus said three factors largely explain the positive results of the study:

1. Golf course superintendents are educated, licensed and regulated in the application of golf course chemicals—therefore they judiciously employ their use and adhere to science-based course management practices.

2. Healthy turfgrass acts as a good filter of water, thereby removing pollutants. Additionally, chemicals in water are broken down by microbes in the turfgrass ecosystem before they reach water sources.

3. The U.S. Environmental Protection Agency intensely scrutinizes all pesticides before they are registered for use.

"These results should not be used to support a relaxation of environmental stewardship by superintendents, especially when one considers the geographic data gaps," said Cohen, President of Environmental & Turf Services and principal investigator of the study. "However, these results invalidate the claims by some that golf courses should be treated as if they are hazardous-waste sites."

***'These results should not be used to support a relaxation of environmental stewardship by superintendents, especially when one considers the geographic data gaps... However, these results invalidate the claims by some that golf courses should be treated as if they are hazardous-waste sites.'***

While this study is significant, Nus said additional scrutiny is likely. The issue of water quality for all uses (golf courses, industry, agriculture, etc.) is receiving considerable attention from researchers. He indicated that the United States Golf Association has contributed major funding to the issue of pesticide and nutrient fate.

For additional information contact: Stuart Cohen, Ph.D., President, Environmental & Turf Services, Inc. Wheaton, Md., at 301/933-4700. Jeff Nus, Ph.D., GCSAA Director of Research, 800/472-7878 ext. 429 or E-mail jeffnus@gcsaa.org

*From GCSAA Online News*

*Planting and cutting-in the "ultradwarf" sprigs at the Olde Florida test green. Note the separation boards. Photo by Darren Davis.*

# *Are 'ultradwarfs' the answer?*

**The excitement is certainly understandable with the years of struggling that many superintendents have gone through with contaminated or mutated turfgrass.**

BY DARREN J. DAVIS
*Golf Course Superintendent*
*Olde Florida Golf Club*

In life, sometimes there are things that are just too good to be true. Most likely, we have all experienced this scenario at some point in time. With this said, there are some people that would have you believe that the new "ultradwarfs" or "vertical dwarfs" are a new wonder grass that will make us all heroes with our golfers.

Well, more than ever golf course superintendents in the south are in need of a "magic crystal ball" so that we can determine the destiny of these new, putting green grasses. These new grasses have certainly created quite a stir and superintendents all over the south are talking about them. The excitement is certainly understandable with the years of struggling that many superintendents have gone through with contaminated or mutated turfgrass.

Since these new ultradwarfs have been grown in test plots around the country for several years, it is certainly safe to say they can succeed in some situations. I have even personally seen three of these new varieties look outstanding, at certain times of the year.

But there have been some negative things seen dealing with stress, overseeding transition, and thatch accumulation. Therefore, it may be wise to allow some time for these new bermudagrass to be

***Since these new ultradwarfs have been grown in test plots around the country for several years, it is certainly safe to say they can succeed in some situations.***

tested in "real life" situations.

Since testing of these new bermudagrasses on actual "in play" golf course greens has been very limited, the Everglades Chapter of the FGCSA in conjunction with Olde Florida Golf Club planted a test green on August 20, 1997.

The green was planted by Olde Florida Golf Club turf maintenance staff under the supervision of a committee of people including John Foy, director, Florida Region USGA; Raymond Snyder, University of Florida (Dr. John Cisars' assistant); Roy Bates, immediate past president, Florida Turfgrass Association; and myself.

Dr. J. V. Krans, professor, Mississippi State University, and Dr. Wayne Hanna, geneticist, USDA/ARS both of whom are also on the committee helping to oversee this project, were unable to attend. However, both of these scientists reviewed the planting protocol and provided valuable input.

All four ultradwarfs — FloraDwarf, TifEagle, MS-Supreme and Champion — arrived at Olde Florida on August 19, or 20. The material was shipped via airfreight, Federal Express or trucked in (FloraDwarf). It is our determination that all of the material arrived in similar condition.

Earl Elsner, director, Georgia Seed Development Commission, provided input on the method of sprig measurement to assure equal amounts of all the varieties were planted on the test green. It was our determination that the FloraDwarf was delivered with a quantity closest to our desired sprig rate of twenty bushels; it was also the least amount delivered of the four. Therefore, the quantity of FloraDwarf we had on hand was the standard used to decide the total volume of sprigs planted of each variety.

The method of sprig measurement used is as follows: Sprigs were put in a five-gallon bucket until it was half full. A tray of weights was then used to compress the sprigs in the container. The remainder of the bucket was then filled and compacted again. Finally, the full bucket was weighed and the remaining nine buckets that were filled with sprigs (10 total) were weighed to assure we had ten equal containers of sprigs.

***But there have been some negative things seen dealing with stress, overseeding transition, and thatch accumulation.***

Although the four varieties all weighed different amounts (due to variances in soil or moisture content), it is our judgment that each variety was planted in very close volume amounts, at a rate that is standard in the industry (20-25 bushels/ 1000 sq.ft.).

After each variety was placed in the ten containers they were transported to the green and dispersed by hand evenly on the two predetermined plots. The green had been separated the day before into eight equal-width plots so that each of the four varieties could be planted in duplicate strips.

Care was taken in the planting process to ensure no material was accidentally placed on another variety's plot. Immediately after the sprigs were placed on the greens surface, they were manually sliced in using a dull, flat-pointed shovel. Several employees performed this task in an attempt to "cut in" as much of the material as possible.

Prior to placing the next turfgrass variety into the ten buckets, all of the containers were thoroughly cleaned with water. The floor that we were working on, inside the turf maintenance facility, was also swept and then blown clean.

Prior to planting, the plots were tem-

*Growing in the test plots. Guillermo Gomez hand-mows the plots after the sprigs take hold. Photo by Darren Davis*

porarily physically separated with plywood that was installed six inches below, and extended six inches above the surface of the green. This helped keep the varieties separated during the planting process and also the grow-in. It did create some hardships with the grow-in but it was believed to be crucial in keeping the individual plots "pure".

After all four varieties were planted and cut in, the green was irrigated to seal the surface. An irrigation program was immediately installed in the controller to keep the surface moist at all times during daylight hours.

This irrigation program remained in place until the turf was sufficiently tacked down. Once the turf was tacked down a vibratory mechanical compactor plate was used to smooth the surface. Care was taken to assure the machine did not transport any material between plots.

Prior to planting the turfgrass, Milorganite (6-2-0) was applied at 5 pounds of N/1000 sq.ft. and Scott's Starter Fertilizer (19-26-5) was applied at 1 pound P/1000 sq.ft.. Both materials were worked in to the soil by a mechanical trap rake.

After planting, Lesco Ammonium Sulfate (21-0-0) was applied weekly at 1 pound of N/1000 sq.ft.. Also applied weekly on a different day of the week was the 19-26-5 at 1 pound of P/1000 sq.ft.. This fertility program remained in place until the turf was well established.

When the sprigs had sufficiently tacked down, a Toro GR 1000 greens mower was used to mow the plots. The initial bench setting on the GR 1000 was .300. This was lowered gradually as the turf allowed.

We probably could have begun mowing sooner but we were very concerned about dislodging sprigs from the surface of the green and possibly transporting them to other plots. In the mowing process, to be extra cautious, both plots of each variety were mowed and the mower was then thoroughly washed clean prior to mowing the next variety.

The basket was also used to ensure no material was physically thrown over the plywood barrier into another plot. Each time the turfgrass was cut with the greens mower, a Red Max hand-held reciprocator was used to cut the turf next to the board where the mower was unable to cut. After the mowing began, the green was also rolled numerous times with a riding greens mower to help smooth the surface.

After 6 weeks of growing, a triplex vertical mower was used to groom the plots and help encourage lateral growth. Again, we probably could have performed this process sooner if the green were a mono-stand. Each variety was vertically mowed separately. Immediately after the vertical mowing, the plots were cut with a greens mower (with the basket attached) to help clean up debris on the surface.

The plots were also blown clean. Prior to beginning the next variety, the machine was cleaned thoroughly. All of the plots were also carefully inspected prior to being vertically mowed for any material that may have been transported from another plot. In this process the plywood certainly enabled us to keep the material separate.

The plywood remained in place until the plots were close to 100 percent filled in. This was to assure that there would be no open spaces for runners to encroach into the adjacent plot. We are comfortable that by having the boards in place during the grow-in, there will be very little merging of the varieties unless one variety is dominant or one is severely weakened by stress or by some other factor.

The last step in the establishment of the new test green was the installation of the Greens Encroachment Barrier System to keep out any encroachment from the surrounding fairway and rough "Tift 94" bermudagrass.

With the grown-in now complete, we have determined that there are no unusual facts to report on the establishment of the four varieties from sprig material.

They all appear to grow in at about the same rate. Although Tifdwarf is not included in the test, it appears that there is little difference in the grow-in rate from sprigs of the four "ultradwarfs" compared to Tifdwarf.

The only difference in the establishment of the individual plots on the test green was that the varieties whose sprigs were delivered a little "clumpier" took hold a little better. I do not feel that this is the "norm" but in our situation we were unable to utilize a mechanical sprig slicer because of the placement of the above-ground plywood barrier. Instead the sprigs were manually sliced-in with shovels.

Had we been able to achieve better soil/sprig contact across the entire plot it would have certainly resulted in better survival of the sprigs. For example, the varieties that were "shredded" were unable to be 100% sliced in and consequently some of the sprig material that remained on top (with no roots or soil), dried out before the turf was able to take hold.

Obviously the greater percentage of material that is worked into the soil, the better the survival rate will be. There was not a huge difference in the four varieties but some difference in this regard was noticeable. This is in no way a negative for any of the varieties. They all appear to grow in at about the same rate.

Turfgrass managers in the south are keeping their fingers crossed that these new varieties are successful. However, many experts feel there is a need for caution.

In the November/December 1997 issue of the *USGA Green Section Record*, John Foy (USGA agronomist) wrote, "The development and introduction of new bermudagrass cultivars holds great promise for warm-season golf courses. However, some patience needs to be exercised. The new bermudagrasses have not been thoroughly evaluated in replicated putting green and fairway trials

"A number of questions still need to be answered regarding the stress- and pest-tolerances of these grasses over a wide range of locations. Furthermore some of the new putting green bermudagrass cultivars exhibit a faster rate of thatch production."

To me, this is an accurate assessment of where we are at now with the new grasses. There will be some leaders that will take a slight gamble and plant these new turfgrasses, but only with time will we know the long-term success with the new ultradwarfs.