

Care of Live Christmas Tree

by James A. Fizzell, Sr. Ext. Adviser
University of Illinois

The trend in recent years is that more and more homeowners like to have a live Christmas tree ... a growing tree with roots.

It is recommended that you take these steps in order to get the best results and pleasure from your live tree:

1. Now is the time to dig the hole where you anticipate planting the tree, preferably before the ground is frozen. Mulch the hole to prevent freezing too far down. Keep the soil from the hole where it will not freeze and can be used when you plant your live tree.

2. Keep the tree indoors for as short a time as possible. Make the change in temperature by a series of gradations ... perhaps one day in the garage, one day in a cool basement and then into the room where you plan to set it up and decorate it. Repeat this same process in reverse when you take it outdoors.

3. It is usually better if the supplier pots the tree for you. A balled and burlapped evergreen tree should be placed in a porous pot, but keep the pot small so it will be inconspicuous. Try the use of a plastic antidesiccant spray on the foliage before bringing the tree into the house.

4. Water the tree as you would a house plant. Water frequently and thoroughly but never let the soil get either dried out or muddy.

5. Indoor temperatures should be kept as cool as possible, especially at night. Be sure the tree does not receive direct sunlight, even through a window. Never place the tree near a fireplace or against an operating radiator or other source of heat.

6. Plant outdoors in the hole prepared for the tree. Use unfrozen soil in order to get it firm around the roots of the tree. Be sure to mulch well.

7. Soak the soil thoroughly after planting to firm it, and every month or so if the temperature remains mild and there is no rain. Watering will be necessary during droughty periods next summer, too.

It is fun to have a live Christmas tree. Use it indoors at Christmas and then use it outdoors as an evergreen in your foundation planting or as a specimen tree where it will remind you of Christmas past.

"Penn State Wins Tournament"

by Dudley Smith
Silver Lake C.C.

The October golf outing at Wilmette Golf Club was played on a cold blustery day; the grounds were soggy from recent flooding; and mittens, rainwear and schnapps were the uniform of the day.

The annual collegiate tournament was played as scheduled and the Nittany Lion Alumni from Penn State are the 1986 champions. Ed Fischer, David Louttit, Dave Blomquist and Bill Douglas outscored the Fighting Illini who finished second.

Graduates in turf from Purdue, Rutgers, Nebraska, Wisconsin, Michigan State, and Amherst also played in the event.

Veteran Bill Krafft, 71, Valparaiso Country Club, Amherst Class of 1946, was individual champion with gross score of 80. (His schnapps was unleaded).

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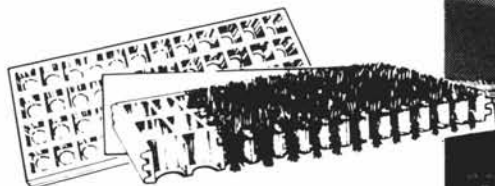
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December 9-11 — North Central Turfgrass Exposition
January 6-7 — GCSAA & MAGCS Seminars at Pheasant Run
January 26 - February 3 — GCSAA Conference in Phoenix
January 31 — Prayer Breakfast in Phoenix
March 2-4 — Midwest Regional Turf Conference

The annual meeting on November 5th, 1986 had 43 voting members who at that time voted in a dues decrease for themselves, but increased the dues for all other members who were not in attendance. The dues increase for those not in attendance is to go up an additional \$25.00 for a total yearly dues of \$60.00. These 43 daring superintendents also elected the following members to the 1987 Board of Directors: President, Jim Evans; Vice President, Mike Nass; 2nd Vice President, Al Fierst; Sect'y.-Treasurer, Dave Meyer. Board Members are: Brian Chalifoux, Dave Louttit, Ray Schmitz, Bruce Williams, Dennis Wilson and Dave Behrman.

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(Editor's comment): I am going "down under" to visit the countries of Australia and New Zealand on January 13, 1987. I will need any articles, notes, for sale and etc. for the February & March issues by January 10, 1987. In my absence, Roger Stewart will be taking over my duties and will help out if there are any questions. All advertisers are asked to make sure I have their ad copies by December 10th, 1986 for their needs in 1987. If anyone has any contacts in the countries that I will be visiting, please give me a call. I will be returning around February 18th.

Ed Wollenberg had a surprise going away part from his many friends. About 65 superintendents and friends showed up on October 28th for lunch at Ballatore's Italian Tavern and showered Ed with their club hats and sweaters. Dudley, of course, also had a surprise entertainment lined up, kind of a Dudley tradition so to speak. Ed and his wife Agnes then left for Florida and a cruise. Good Luck Ed & Agnes on your retirement, we will miss you in the Chicago area.

Bob Williams had emergency surgery on November 1, 1986 when he had a four-way by-pass heart operation in Northwest Memorial Hospital. Bob, we all wish you a very speedy recovery.

Joel Purpur of Bartlett had shoulder surgery in early October and is getting along at the present time. Since he couldn't shave with his left hand he grew a beard and it looks pretty good. All guys with beards look good!

Mary Robbins has left Top Soil Testing for a job change. I for one will miss her for she was always so agreeable to take pictures for "The Bull Sheet". Good Luck, Mary in your new chosen field.

Duane Cotte of Chicago Turf & Irrigation has also made a change. Duane and his wife are going into the retail business in Elgin. He will still be selling the "red" machines, but to the local home owners. Good luck and success in your new venture.

Readers, please remember this is "The Bull Sheet" and everything you read may or may not be the total truth. For example 43 voting **did not** vote in a decrease in dues for themselves and an increase for all of those of you who did not attend the annual meeting! But they could have done something at this annual meeting to get you upset! The Board of Directors at their meeting before the annual meeting decided after looking at the financial statement that a dues increase was not called for. The point I am trying to make is that it is YOUR association and YOUR input should be there at the annual meeting.



Board of Directors

L to R: Dave Meyer, Ray Schmitz, Brian Chalifoux, Bruce Williams, Al Fierst, Dennis Wilson, Mike Nass, Dave Louttit, Penny Meyer, Executive Secretary; Dave Behrman, Jim Evans, President; and Fred Opperman, Editor of "The Bull Sheet"

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Kenneth R. Zanzig

“Flowers in January”

by Fred Opperman, CGCS
Glen Oak C.C., Glen Ellyn, IL

Flowers in January? Who thinks of flowers at this time of year with snow on the ground and freezing temperatures? If you do think of them you would think of just the house plants that flower, like the Poinsettias.

But here at Glen Oak C.C. I start thinking of what flowers will be planted around the clubhouse flower beds this coming May. I do it now for if there is a certain type of flower or color combination I want, the greenhouse has time to order the seeds I need and the lead time to plant them for me. The greenhouse then can schedule all my plant selections to be ready by the third week in May. It is extremely risky to plant any earlier than the third week in May due to late frosts that can and do occur. The safest planting date is really May 30th.

Here at Glen Oak we have eighteen flower beds ranging from 75 to 800 square feet, plus about 15 flower pots/planters. We rarely repeat or plant the same thing two years in a row in any of these beds, but there are exceptions which I'll mention later. Another thing we do is keep a log on what flowers are planted in each bed for every year, and a picture log is kept up on these beds. I usually take color pictures of all beds in early August when they are at their peak. The records state the following: type of plant, color, size when full grown, spacing when planted (both in row and between the rows), total number of each plant in the bed, and comments on that bed. Comments being if the bed was good, bad, needed more plants, or the colors really didn't go together like you thought they would. A person may wonder why I need all that information. Well, when it comes time for me to start planning my next year's flower beds, I can go back a couple of years, find a very successful flower bed, and repeat it. I have all the information that I need for ordering and planting of that bed. It also guarantees that I won't be making the same mistake twice with flowers that didn't work out before.

We employ a full time gardener during the season, and I usually have a woman to handle this position. She would usually start the first of May and work thru August. By late August the flower beds need only a few hours a week of care. During the growing and flowering season the gardener is kept busy weeding, watering, cultivating, pinching back, and removing dead flowers. She also handles all the edging and trimming around the clubhouse area. All mowing is done by the grounds crew.

We try to roto-till the flower beds a week or two before planting. In most of our beds we have added substantial quantities of spent mushroom soil which we have a ready supply of a nearby mushroom farm. A granular fertilizer is added when the beds are roto-tilled at about one pound per 100 square feet of a 1-2-2 ratio.

The flowers are then fertilized with a liquid fertilizer which is sprayed on about once a month. Insects are watched for and handled as they come up with the proper chemical used for control.

The following are some of my favorite flowers which we use around Glen Oak:

Petunia — One of the showest and longest continual bloomer of any plant and comes in any color.

Marigolds — Great bloomer which comes in various sizes

and shades of gold or yellow or mixed.

Purple Salvia — If you need a blue or purple, this is the plant, reaches about two feet and is a constant bloomer.

Snapdragons — good bloomer, comes in all sizes. My favorite is Floral Carpet about 10-12" high which just blooms and blooms. Snaps need attention to be the spectacular bloomers so be prepared to pinch them back and constantly pick off all dead flowers.

Impatiens — Great plant for a shady area. Comes in various sizes and colors.

Dusty Miller — A good edging plant with different leaves to choose from. Rabbits like them too.

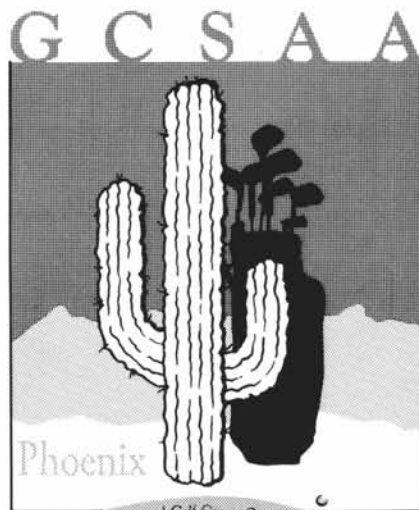
Celosia — You have two colors to choose from and two forms: the cockscomb or feather type.

Cleome (Spider plant) — Here is a different plant for you if you have the space for large flowering plants. It will reach 4 to 5 feet and will have continuous blooms up to frost. This plant will re-ssed itself every year. This is one of the flowre beds I don't change every year due to them re-seeding and the area where they are located.

Portulaca (Moss Rose) — Is a very excellent plant in a hot dry full sun area. This plant also re-seeds itself.

Geranium — Blooms well, very good in pots, needs to have old blooms and leaves picked regularly.


I don't use bulbs in any formal beds around the clubhouse. But do use them where they can be "naturalized" in shrub beds, under trees, etc. I use only a few tulips for to me they seem so formal. Instead we use a lot of daffodils and narcissia for our spring blooms and color.



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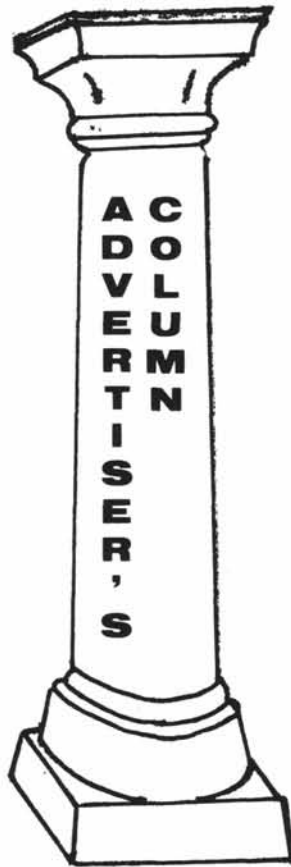
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In 1965 a satellite operation had been established in McHenry run by Bob and Ted and the original farm continued to be managed by Tom. In 1983 it was deemed to be in the best interests of the business to split into 2 distinct operations. Tom presently operates the original Elgin acreage which has grown to 500 acres and is known as Thornton's Sod Nursery, while Bob and Ted operate the McHenry farm as Thornton's Turf Nursery.

1987 will be our 25th year in the sod business and we have enjoyed serving many of the fine golf courses in the Chicago land area. We hope to be around for the next 25 to be able to continue that pleasant relationship.

Tom Thornton



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 From: Jim Ethridge, Horticulture Department Chairman
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 Re: An Alternative Education to Full Time Day Programs

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TENTATIVE CLASS SCHEDULE

Agri 150 — Intro to Agriculture Mechanization

Monday Date: Dec. 1 through March 30, 1987
 Time: 6:00 - 8:55 p.m.

Hort 162 — Woody Ornamentals

Tuesday Date: Dec. 2 through March 31, 1987
 Time: 6:00 - 8:55 p.m.

Hort 160 — Principles of Horticultural Plants

Wednesday Date: Nov. 26 through April 8, 1987
 Time: 6:00 - 10:00 p.m.

Hort 250 — Landscape Plans

Thursday Date: Dec. 4 through April 1, 1987
 Time: 6:00 - 8:55 p.m.

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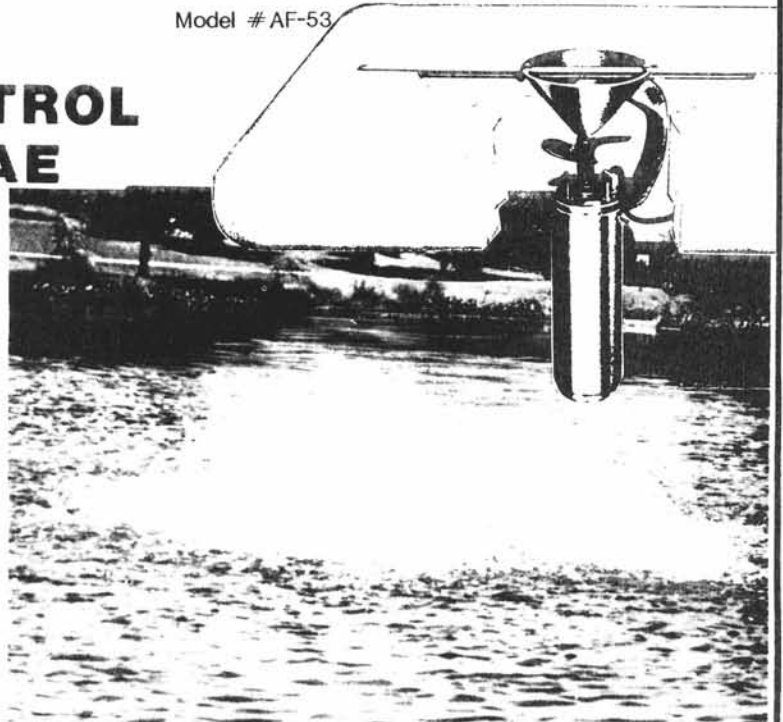
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What Are Endophytes?

by Dr. David Sleper
University of Missouri
Columbia, MO

New information on endophytes has attracted attention in recent months. Both short term and long term value and positive and negative value are being discussed. Dr. David Sleper of the University of Missouri lists the following points as important in answering the question, "What are endophytes?"

—An endophyte is a plant within a plant. In the future, much will be learned about these relationships. In effect, they are fungus-grass connections.

—The fungus, *Epichloe typhina* (ET) can function as a endophyte.

—Choke disease results from a mass of mycelia going through the sexual stage.

—In ryegrasses and tall fescues the fungus does not go through the sexual stage in its life cycle.

—*Sphacela typhina* was identified as an endophyte in 1881. Now, *Acremonium coenophialum* has endophytic properties.

—Endophytes are known to create adverse effects in some animals.

—"Ryegrass Staggers" and "Summer Syndrome" are believed caused by endophytes.

—When sheep graze on endophyte infested forage, they get rough coats and muscle tremors.

—Poor animal performance is often correlated with: elevated rectal temperature, failure to shed winter coat, uncomfortable feeling necessitating attempts to cool off by standing in water or rolling in mud, poor conception rates, low milk production, loss of weight, even death.

—Endophytes also have advantages they can depart to some plants:

- insect resistance;
- disease resistance;
- enhanced heat tolerance;
- enhanced drought tolerance;
- improved persistence;
- increased density;
- faster recovery from injury;
- more attractive appearance;
- greater vigor;
- reduced crabgrass invasion.

—Increased resistance to cutworms, armyworms, and Argentine stem weevils has been confirmed. There is good evidence that other insects may be affected.

—Certain rusts have been noted to be less infectious in the presence of endophytes.

—Insect control may lead to other benefits on the basis of a more vigorous grass stand. Where there are mixed stands of grasses with and without endophytes, those with endophytes survive. This may be related to allelopathy in some instances.

—Dr. Reed Funk of Rutgers University has noted sod webworm resistance in Pennant perennial ryegrass.

—Endophytes are seed born pathogens. Hyphae are found between the aleurone and endosperm layers. Under the seed coat is the aleurone layer then starch endosperm. The endophyte is usually found near the endosperm.

—Seed storage affects the viability of the endophyte. At 30-40 degrees F. it can be maintained for three to four years. When frozen, it can be held even longer. At ambient temperatures, the endophyte will last about one year. In the St. Louis, Missouri area, seed stored in the garage for one year (high summer temperature and humidity) will only have about 20% of the endophyte left.

—Endophytes are transmitted to plants through the seed, not through the soil. As the seed germinates, the fungus grows. It can be found within the plant at about the four or five leaf stage.

—Endophytes do not penetrate living cells. They live in intercellular spaces — in sclerenchyma tissue. Thus, spread of the endophyte does not take place until this strengthening tissue develops. Thus, endophytes are not present in all plant parts and are never found in living cells. They do not develop as readily into root systems of tall fescue as into perennial ryegrass roots. They are found in the sheath more than in leaf blades. The mechanical packing of cells at the collar, where leaf blade joins the sheath, prevents endophyte movement into the blade. Some endophyte toxin may move independently of the fungus.

—All cool season grasses are suitable hosts for the endophyte. Some have more than others. Also, endophytes are present in trees and shrubs. The concept of endophyte enhanced insect resistance is being intensively researched.

—Endophytes are not likely to spread as they are confined to seed and mature plants through seedling development. Other possible mechanisms for spread are being investigated.

—Fungicides have little effect on endophytes. Some seed treatments may be effective, but little control is likely in a mature plant. State seed regulations now include endophyte testing under some conditions. A squash test can be used to indicate the presence of endophyte in the tissue but it will not tell if it is alive. Grow out tests and tissue culture studies are necessary for determination of live endophyte. These tests are time consuming and thus, costly.

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Root Pythium on Golf Greens

by Dr. Clint Hodges
Iowa State University, Ames, IA

The news is that Pythium does not cause a root rot, but an induced disfunction. According to Dr. Hodges, this knowledge makes a difference. The following points are important.

—Starting about 1977, case histories of a Pythium induced disfunction of roots of putting green grasses developed. The magnitude of this disfunction indicated some degree of seriousness. Was it a disease, or a disease complex?

—Evidence pointed to trouble on high sand content greens. One to two years after renovation of greens, the condition developed. Where golf courses were renovated all over in late summer and early fall and greens were remade with high sand mixes, something changed.

—The following stress season brought about a dying out of the grass, much like foliar Pythium, but foliar pathogens could not be found. Roots were white and appeared healthy. Often, there was a chlorotic line at the interface between sand and soil at the edge of the green. Following this, grass starts to go from the center of the green. No chemical control has seemed effective. In some instances, the grass is all gone in ten days. No Pythium is present in foliar parts of the plant, but Pythium is present in the root system. In time, strips of sod or plugs are killed. Greens lost or damaged from this condition are usually reseeded in July and August. On the third and fourth year the condition becomes less severe.

—Tissue tests indicate that ninety eight percent of the isolates contain **Pythium arrhenomanes** (most common) and **Pythium aristoporum** (less common). **Pythium arrhenomanes** is found all over the country and is particularly severe on very light soils.

—There are two categories of root infection:

- seedling roots;
- association between roots - mature.

Root systems are not rotted. They are white but stunted and full of Pythium. Organisms penetrate through root hairs. Cut the root and within two hours the Pythium grows out of the vascular system. Roots do not seem to be falling apart. Root tips are bulbous like, might be expected from nematode activity; then Pythium grows out behind the area. Eventually a devitalized root tip is developed. This is the only form of rot, but since it is at the tip, it is of critical importance.

—In orchardgrass, the organism completes its life cycle. This does not happen in bentgrass. Apparently bentgrass is not a good host.

—Why is it that in recent years we have started to see this Pythium disease? Can only speculate:

- Leave old collar and green and apron in greens reconstruction. This consists of old contaminated soil.
- Pythium exists in the old soil but is not troublesome because of competition with other organisms.
- Sand in new greens is not highly organic. Pythium spreads through the sand in late fall and early spring.
- When heat stress hits the following year, damage results.
- In three to four years the sand becomes more active biologically and the problem is lessened.
- Pythium is a water mold so it would be expected to spread where heavy irrigation is practiced as on sand greens.
- High fertility is likely to be a factor.

(cont'd. page 20)

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(Root Pythium cont'd.)

—Should use of sand greens be discontinued? No! Use sand, but be prepared. Watch for this condition where sand topdressing is used. Aerification and wetting agents help to lessen the severity of the condition. Look for the condition where sixty to one hundred percent sand is used in green construction.

—As a last resort, a plastic interface around the rim of the green may help as a barrier to the spread of the organism. Putting green design that eliminates a soil-sand interface at the outer most edge of the green, particularly at the soil surface is recommended.

Golf Leaders Are Present as Joe Dey Accepts Herb Graffis Award

RYE, N.Y. — Virtually all of the leaders in golf in the United States rose to salute Joseph C. Dey as he received the 1986 NGF Herb Graffis Award at the Westchester Country Club October 8. Mr. Dey and his wife were clearly moved by the lengthy standing ovation given them by the leaders of American golf associations, companies, publications and golf courses, gathered to honor the former executive director of the United States Golf Association and first commissioner of what is now the PGA TOUR.

“Joe Dey has not only been a dear friend to me, but he has been a friend to all of golf,” said LPGA Commissioner John D. Laupheimer in making the presentation to Dey. “This award is a true expression of appreciation by the golf community for his tireless efforts to make golf a great game for everyone.”

Mr. Dey was chosen to receive the 1986 Herb Graffis Award by an overwhelming vote of the National Golf Foundation Board of Directors. The award is given annually for long-time and outstanding contributions in preserving the true spirit of the game of golf.

The award's namesake, Mr. Herb Graffis, was unable to make the trip to New York for the presentation, but the 93-year-old co-founder of the NGF did send along some comments, which were read by emcee Jack Whitaker of ABC Sports:

“Joe Dey was a pioneer. I have never met a more honorable person. This award should really be in his name instead of mine,” said Graffis.

The award presentation took place during the 50th Anniversary dinner of the National Golf Foundation, and in his remarks to the audience, Mr. Dey said, “I am truly proud to be honored on such an historic night as this — the 50th Anniversary of the NGF. I accept this award with deep appreciation for the people I have worked with, the friendships I have been granted, all thanks to the game of golf.”

Previous Herb Graffis Award winners include: Joe Jemsek, Arnold Palmer, Carol McCue, Bob Hope, Patty Berg, Jack Nicklaus, Herb Graffis, Bill Davis and Howard Gill, and Howard Clark.

The National Golf Foundation, celebrating its 50th anniversary in 1986, includes in its membership more than 500 golf product companies; national, state and local golf associations; golf course architects and builders; golf publications; and more than 3,000 golf courses across the United States.

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