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HOUSE PLANTS THRIVE WITH A LITTLE CARE

The beauty of foliage, flowers, and form is not the only reason for growing plants indoors, says James A. Fizzell, University of Illinois Horticulturist in Cook County.

The challenge is to keep them thriving under household conditions and provide a bit of green for ourselves during the long winter season.

If a plant's color is poor, its leaves or flowers are distorted, or the plant tends to droop, something is wrong, says Fizzell.

Keep in mind that a plant must have air, water, food, and light. Soil used in house plants must be porous enough to allow drainage of excess water and to admit oxygen to the roots. Soil taken from the garden becomes hard when potted for houseplants. Most houseplants grow poorly in compacted soil. To avoid this condition, use a good soil mix, advises Fizzell. Use approximately equal amounts of garden loam, organic matter such as coarse peat moss, and coarse sand.

Wilting or partial wilting can be caused by lack of water, or by too much water. Check the moisture by pressing your finger about one-half inch into the soil. If the soil feels dry at this point, your plant needs water. If it feels wet, too much water in the root area may be the problem. Don't be afraid to knock the plant out of the pot and examine the roots to see if they are too dry, too wet, or diseased.

Perhaps you have noticed a white, flaky material on the soil surface or sides of the pot. The material consists of mineral salts that accumulate from the water. Flushing out these deposits from time to time may prevent salt injury to your plants. This can be done by thoroughly wetting the soil to dissolve these salts and then flushing them down through the soil and out through holes in the bottom of the pot.

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When fertilizing houseplants, Fizzell warns against using more than the recommended amount. Too much fertilizer may damage your plants.

If you discover you have overfertilized your plants, you can reduce possible injury by rinsing the soil with clear water. To do this, place the plant in a sink and water liberally three or four times at half-hour intervals, allowing the water to flush out the dissolved fertilizers and other accumulated salts. Rinsing the soil of most houseplants every six months is a good practice.

Finally, plants need light, says Fizzell. Some like direct sunlight; others require small amounts of light. Know your plant's light requirements and try to meet their needs by placing them close to or farther from light sources.

James A. Fizzell



MAY OVERLOOK IMPORTANCE OF ANTHRACNOSE OF 'POA'

A new disease problem attaching "Poa" (*Poa annua*-annual bluegrass) has been identified on many golf courses over the past three years. That is not to say anthracnose (*Collectotrichum graminicola*) is a previously unidentified problem for it is reported in the literature. But while the disease has been reported before, its importance has been overlooked, or more correctly stated, the damage done to "Poa" by anthracnose has been blamed on other factors: **Pythium**, **Helminthosporium**, and high temperature.

It was not uncommon to go onto a golf course in the summer and hear a superintendent say, "Pythium was wiped out my fairways", or "Helminthosporium has wiped out my fairways" and "I treated it with this or that and it didn't help." Nor was it uncommon to walk on a golf course and hear someone say "Look, I can't apply more water, the fairways are saturated and they're still wilting" or "I have even syringed in the middle of the day and they are still wilting."

Attacks Grass Under Stress

The reason the **Pythium** and **Helminthosporium** fungicides didn't work was because neither was the problem. Excess water and syringing didn't work because the grass was not wilting. If anything, the excess water contributed to the anthracnose problem.

The one characteristic symptom of "Poa" infected with anthracnose is its yellow appearance. When Poa or any grass wilts, it turns dark blue to purple, and yet superintendents were talking about their "Poa" turning yellow and wilting.

What is anthracnose? It is a weak pathogen that can attack "Poa", Kentucky bluegrass, and red fescue under stress. It appears to attack during cool as well as warm weather. The yellowing is present under cool or warm weather but death of the grass plant occurs in hot, humid weather conditions. Most of the stress on "Poa" came from the high temperatures last summer. The disease in "Poa" was worse in heavy soil, compacted areas, and heavy traffic areas on hillsides. In one case excess nitrogen fertility was also attributed to symptom development. In Kentucky bluegrass, shade and short root systems contributed to the severity of the disease.

Effective Control

The benzimidazole systemic fungicides (Tersan 1991, Fungo 50, Cleary's 3336, Scotts DSB & Fertilizer) at the 2 oz. rate give the best control when applied as eradicants. Rates of 1 oz./1000 sq. ft., while effective, did not give us as good control as the 2 oz. rate. Four and 8 oz./1000 sq. ft. rates also gave excellent control but the cost is prohibitive. The quickest recovery occurred where the systemic fungicides were drenched in after application. Weekly applications of the contact fungicides Tersan 75, Tersan LSR, Fore and Daconil 2787 were effective.

Many fairways which lost 50 to 75 percent of their turf prior to treatment recovered ten days to two weeks after treatment indicating that the crowns of the plants had not been killed by the anthracnose fungus. Often the roots of the treated annual bluegrass plants are up to 2 inches in length following treatment in spite of the fact the daytime temperatures were in the high 80's and low 90's. In the untreated controls the annual bluegrass roots remained shallow to the point where the turf could be easily torn out. The evidence indicates that much of what has been previously called high temperature killing of "Poa", **Helminthosporium** and **Pythium**, is in fact due to anthracnose.

Preventive Applications

If this summer is hot and humid, or if you are in an area that always has hot humid summers, you may wish to apply 1 oz./1000 sq. ft. of a systemic fungicide when the daytime temperatures start to go above 80°F. and the nighttime temperatures stay above 70°F. This should last for 4 weeks. Then you could apply Tersan 75, Tersan LSR, Fore or Daconil 2787 followed a week later by an additional ounce of a systemic fungicide. Applied as a preventative, one ounce has been effective. Why the contact fungicide if the systemics are so effective? Because resistance to the systemic fungicides has developed for every major pathogen on which it is used. This includes **Collectotrichum** spp. on other crops. There is no reason to believe it won't happen here and if it does happen on your course, you will have to spray every 3 to 7 days with an anthracnose. Using a contact between systemic fungicides application and during the rest of the year will hopefully delay the development of this resistance.

J. M. Vargas, Jr. and R. Detweiler
Dept. of Botany and Plant Pathology
Michigan State University

GUIDELINES FOR PROTECTING AGAINST WINTER INJURY

1. Provide good surface and subsurface drainage. The latter involving primarily drain tile, where needed.
2. Ensure that the turf and underlying soil root zone contains adequate but not excessive amounts of water when entering late fall and winter dormancy.
3. If a soil compaction problem has developed during the summer, correct by soil cultivation--coring, slicing, etc.--in early fall. This will also aid in drainage.
4. Raise the cutting height and/or stop mowing prior to shoot growth stoppage in order to allow an additional accumulation of leaf growth that will function as a protective insulation and enhance both rooting and carbohydrate accumulation that aid in winter survival. However, do not allow too much leaf growth to accumulate to the extent that it increases the potential for snow mold disease problems.
5. Be sure that any excessive thatch is controlled prior to entering the winter period. This is particularly important in the case of disease and winter desiccation problems.
6. Be sure that the turf enters the fall hardening period with an adequate nutritional level; but avoid nitrogen fertilization during the cold hardening period when deep rooting, carbohydrate accumulation and decreased water content need to be encouraged.
7. Ensure that adequate potassium levels are provided. A minimum ratio of nitrogen-potassium of 2 to 1 is suggested.
8. Provide adequate preventive protection against winter diseases by applying the appropriate fungicide.
9. Provide an appropriate winter protection cover where desiccation and/or low temperature kill are particularly severe problems and winter play does not occur. In some locations this may involve enhancing snow accumulation.
10. Do not allow traffic (foot, ski, or vehicular) on turfs during periods of warming when the snow cover is in a wet-slushy condition and a subsequent severe freeze is possible.

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Question: We have a 36-hole facility. Is it common practice to keep all 36 holes open to play during winter or is it best to keep only 18 of our 36 holes open? (Delaware)

Answer: Much depends upon the amount of play each course receives. If winter play is minimal, then very definitely it would pay to center all play on one course. When this is done, our experience indicates that the grass on the course that is closed for the winter becomes denser, undamaged roots are deeper, weeds and diseases are less troublesome and the putting surfaces are smoother the following year than the course that was played all winter. Obviously, it would pay to alternate courses for winter play annually at a 36-hole facility.

THINK

If you think you are beaten, you are,
If you think you dare not, you don't.
If you like to win—but you think you can't,
It's almost certain you won't.
If you think you'll lose, you've lost,
For out of this world we find
Success begins with a fellow's will,
It's all in the state of mind.
If you think you're out-classed, you are,
You've got to think high to rise,
You've gotta be sure of yourself,
Before you can win the prize.
Life's battles don't always go
To the stronger or fastest man,
But sooner or later the man who wins,
Is the man who thinks he can.

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HOW TO TURN COMPLAINTS TO YOUR ADVANTAGE

How do you handle complaints from golfers? Nobody finds it easy to take criticism, especially when the gripes come from someone whose only turfgrass experience is his dandelion-free lawn. Unfortunately, golf courses were built and superintendents hired for the benefit of golfers, a situation which often necessitates a kid-glove approach to complaints.

Even if complaints are supposed to go to your green chairman, chances are you'll still have to field a few questions and comments from golfers who catch you on the course. Generally, they will be friendly, but there are always a few who aren't.

The first rule is keep your temper. Some people actually enjoy harassing an employee, and others have to find someone to blame for a bad round. However, if you stay cool, he will soon realize he is out of line.

Hear him out. Many people who have honest complaints only reveal portions of their grievances because they are afraid you don't have time to listen to them. When you've heard the whole thing, try to give a thorough explanation. Above all, don't cut him off abruptly, even if you are in a hurry. Try to set up a time when you can go into the problem in detail if you think it necessary.

Don't try a cover up. Even if it's your fault, he'll be more impressed with your forthrightness than with a slick, superficial explanation which blames everything from the weather to last month's ladies tournament.

There are some positive steps you can take to head off complaints. You can keep members informed of construction, maintenance operations and other problem areas on the course by posting signs in the pro shop. If your club has a monthly newsletter, you can use it to keep members informed of upcoming operations and explain why they are necessary. Some superintendents have found it helpful to compile regular reports of their operations so that everyone, including club employees, knows not only what and when but also why an operation is taking place.

You also can train your crew to successfully deal with problems on the course. Make sure they have enough information to handle the problem and that they realize they are representing you and the club when they handle a complaint or answer a question.

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WHAT DOES THE SUPERINTENDENT DO IN THE WINTER?

What Does the Golf Course Superintendent Do in the Winter? What do you say when someone asks you this question? Do you have a ready answer? Probably not. Here are a few things that you might want to say. Maybe you would like to print some cards with this information. If you get asked this question as often as I, you may just want to memorize it.

Many people have the false conception that we do absolutely nothing on the course. It certainly must be a vacation - at least it must be thoroughly enjoyable. Nothing could be further from the truth. OK, then, what does a production superintendent do in the months of December, January, February and March?

Maintenance repairs, overhauling of equipment and sharpening of mowers is only part of the winter schedule. On good days, we even work out on the course on heavy construction work and trimming of trees. Budget work, meeting with the long range planning committee Board of Directors and the grounds committee are just a few of the meetings that we attend. These meetings are necessary to set up next year's purchases and programs. This is also a good time to contact prospective employees for the coming year.

In addition to good planning, the winter months offer time for the superintendent to attend conferences and seminars, thus becoming better qualified and educated in the ever changing field of Turf Management.

The so-called off season is a good time to re-evaluate past programs and course conditions. Searching out better ways of doing the job must be a continued concern of the productive superintendent. The winter months give the superintendent a chance to revitalize himself, his golf course and his profession.

This year, in particular, we are undergoing intensive Pesticide Training and Certification Programs. That, like it or not, will result in proper pesticide control and usage.

If you feel that your Board of Owners don't really know the training education and productivity accomplished during the winter months, why not submit a report informing them?

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SNOW AND ICE REMOVAL

Even though we need and like snow cover, there is a time to get rid of most of it and this should be done before it melts to form an ice sheet in the spring. Dr. Beard isn't sure how much is too much, and until his extensive research proves otherwise, he is advising Superintendents to remove all but one inch of ice or snow from March on. Incidentally, snow fence is also used to keep snow away from areas that would otherwise be too heavily blanketed.

Dr. Beard is particularly concerned about too much water in the crown area of the plant. In his work so far, cold tolerance hardiness is related more to crown tissue hydration (water content) than any other factor. Beard maintains if the crown comes through the winter in good shape we can lose all the roots and still get recovery. Conversely, if the crown is too wet, and thus not hardy, the condition of the roots and leaves makes no difference. The turf may die, even under moderate cold temperature, following "green up" in the spring.

Interestingly, he has good correlation data to back up his theory. For example, the least cold tolerant grasses like *Poa annua*, the creeping red or Chewings fescues, and the more bunch type colonial bentgrasses have the highest hydration (percent water in the crown) as winter approaches. His theory also helps to explain why the drainage swales and cupping areas, or areas that are heavily thatched and thus tend to hold water, suffer the most often from ice sheet injury.

It may also explain why a weak grass with high crown moisture content will survive over one winter and be clobbered the next. The critical point probably can be traced to the type of winter experienced. If the soil freezes solid in the fall and stays that way all winter with some snow cover to prevent desiccation and insulate against too much cold, survival will be high even for weak grass. But, when we get quick freezes followed by sudden thaws, then more freezes and thawing to increase moisture in the crown area, we can expect injury on even the highly cold tolerant creeping bents.

Editor's Note - The above comment prompted Dr. Beard to call some of the area Superintendents last month when we had the big thaw and rain. He was concerned about the standing water on the greens. His advice was to remove as much of the snow from the fronts of the greens as was possible to allow the excessive water to drain off the green. Many of us sent our crews out the next morning to remove the snow and ice from the greens. Our many thanks to Dr. Beard for his concern.

Credit - Patch of Green

From "Winter Injury" by Milwaukee Sewerage Com.

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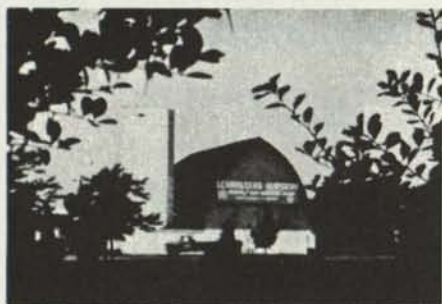
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Flowering is primarily influenced by the amount of light the plant receives. It may be necessary to try various locations in order to find the best site for continuous flowering in your home. If light is too intense, the foliage may be bleached and burned. Insufficient light causes poor flowering and elongated petioles. From November through February, locate plants to receive direct sunlight. Move the plants to indirect, bright light from March through October.

African Violets can be grown entirely under artificial light from two forty watt florescent tubes in an industrial fixture. Gloxinias, Episcias, Tuberos Rooted Begonias, and Ever-blooming Begonias can also be grown with this installation. One standard cool white and one day-light tube placed 8 to 10 inches above the foliage will provide minimum light necessary for flowering. At least 12 hours of light are required each day, but 18 hours of light will produce more plant growth and flowering. A four-tube fixture (two tubes of each type) approximately doubles the light intensity and produces even more desirable plants.

Use water at room temperature for surface application to violets; cold water causes spotting of the foliage. Bottom watering is convenient. Or, wick-watering containers are especially good for African Violets. A fiberglass wick inserted into the drainhole in the pot draws water by capillary action from a separate pan or reservoir beneath the pot, into the soil. With this system the soil is kept moist, neither excessively wet or dry.

Both the bottom watering and wick systems may result in accumulation of salt or hardness on the surface of the soil, since the water moves up rather than down. Periodic leaching (heavy surface watering) to wash out accumulated salts will usually prevent problems.

Night temperatures of 65°F. to 70°F. are satisfactory for violets; day temperatures can be five degrees higher. Foliage will curl downward and flowering will be retarded if plants are exposed to temperatures lower than 65°F.

James A. Fizzell, Senior Extension Adviser
Horticulture, University of Illinois

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Other officers are:

- Fred V. Grau, president
- Joseph M. Duich, secretary
- Warren A. Bidwell, first vice president
- Dr. James R. Watson, second vice president
- D. Frank Dobie is Director of Benefit Tournaments

Anyone wishing further information on any of the several fund-raising efforts may write to Dr. Fred V. Grau, P. O. Box AA, College Park, MD 20740, or phone 301/364-0090.

Most turfgrass managers are aware that the *Ataenius* beetle threatened turf with multi-million dollar damages. The Musser Foundation pooled its resources with the GCSAA and Ohio golf clubs over a 3-year period to support research aimed at life history and control. The joint efforts paid off and Mr. Gerald Wegner, student under Dr. Harry Niemczyk, Wooster, Ohio, expects to have his thesis finished soon. Thus another scientist has been trained and every phase of the turf industry will profit.

The misuse of tax funds has made it almost useless to look to this source for assistance. Those in the industry who operate for profit should face up to the fact that they have a responsibility to build a FUND that will be self sustaining for now and in the future. Fellowships offer the ideal way to perform needed research, accumulate valuable data, produce a learned thesis and, most important of all, develop a trained scientist who can become a leader in the industry. The Musser Foundation is the ideal vehicle by which these benefits can be accomplished. We need to share and to work together. As George Cleaver, president of GCSAA, has said, "Let's Communicate, Cooperate and Coordinate."

Fred V. Grau, President

The H.B. Musser Turfgrass Fellowship, Inc.

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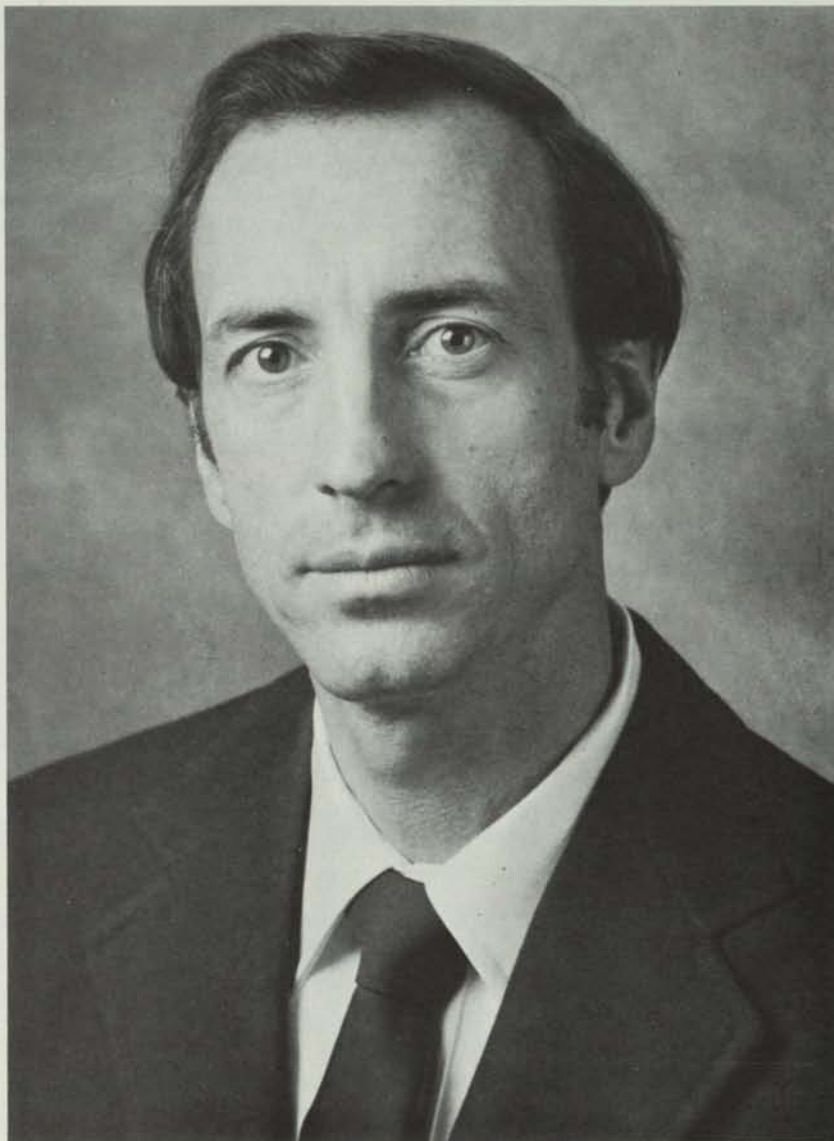
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Congratulations to our new G.C.S.A.A. president, **Mike Bavier**, C.G.C.S. Supt. at Inverness Country Club, Palatine, Illinois. Mike was elected president at the G.C.S.A.A. annual conference, Anaheim, California, 1981.



TUCO OFFERS BIOLOGICAL INSECTICIDE FOR MULTIPLE CROP USE

A biological insecticide, *Bacillus thuringiensis*, is now available from TUCO Plant Health, Division of The Upjohn Company. To be marketed by TUCO as SOK-Bt, the product is labeled for use against many harmful insect species on many plants.

Bacillus thuringiensis is a spore-producing bacteria that produces a diamond-shaped protein crystal. When ingested by susceptible insects, this crystal produces a toxin that disrupts the wall of the digestive tract, enabling bacteria to invade and kill the insect.

SOK-Bt is labeled for use on crops such as lettuce, cole crops and other vegetables, alfalfa, cotton, tobacco, soybeans, potatoes, berries, grapes, watermelon, nut trees, fruit trees, ornamentals and stored grains.

Susceptible insects include cotton bollworm, tobacco budworm, hornworm, cabbage looper, alfalfa caterpillar, imported cabbageworm, numerous moths and many others.

"SOK-Bt is available in wettable powder and liquid form", says L. "Casey" Jones, TUCO Product

Manager. "Both formulations provide effective insect control under a variety of situations on such tender crops as celery, lettuce, tomato, broccoli, brussel sprouts and cabbage. Plus, since it's a biological insecticide, it is produced from renewable resources, rather than from unrenewable fossil fuel supplies."

According to Jones, SOK-Bt contains the most potent strain of *Bacillus thuringiensis* available in the U.S. However, because of excellent historical selectivity, this biological insecticide is exempt from tolerance requirements.

"These bacteria are considered harmless to mammals, birds, fish and many beneficial insects," reports Jones. "They affect only insects with a specific pH or a specific enzyme in their digestive tract. This bacterial strain does not affect bees and many insect and mite predators that are an important part of Integrated Pest Management programs," he says.

"Easy to handle and use, the product will effectively protect many plants from some of the most damaging lepidopterous larvae," Jones points out. "Proper timing is essential for effective applications; insects are most susceptible when young."

More information on this new biological insecticide is available from: "SOK-Bt," TUCO, Division of The Upjohn Company, 9823-190-0, Kalamazoo, Michigan 49001.