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## President's Message

by Dave Meyer

January is becoming a very busy month. The reports from the GCSAA Seminars held at Pheasant Run were very favorable — filled to capacity. I consider this another sign of a strong Midwest Golf Course Superintendent participation.

The monthly meeting, just over at Arrowhead Golf Club, was also a well attended meeting with 90 plus people enjoying a fine meal, reasonably priced. Speaker, Dr. Kling, from the University of Illinois spoke on the drought effects on our woody plants — a very timely and interesting topic. Thank you Bob Breen and staff for an enjoyable and accommodating day. This month also holds the Midwest Turf Conference at Purdue University.

The Midwest Board met at 8:30 a.m. at Arrowhead before the regular meeting to keep our Association rolling. Final plans were made for the Hospitality Suite at the Hilton in Anaheim. Our newly formed Publicity Committee is in full gear making plans to set up and man a booth at the Home and Flower Show in February. Plans are being made to again have the Hospitality Tent during the Western Open at Butler National and also at Kemper Lakes during the PGA Tournament.

The Finance and Budget Committee presented the budget for 1989 which was approved by the board and is very much in line with 1988. Our By-Laws Committee, consisting of past Presidents, will be revising and updating our existing By-Laws.

Plans are now in progress for a joint meeting in March with the Club Managers and PGA. This meeting is being planned to open communications between all, and to help understand each others problems and ideas. I am personally looking forward to this event.

I have been very busy with the building of our new club house at Prestbury where there are almost daily decisions to be made. We are hoping it will be ready for Spring opening.

I hope to see many of you at the National Conference in Anaheim and hope a short winter is in store for all of us.



Dr. Randy T. Kane, Turfgrass Advisor (312) 954-2753  
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## Director's Column



### Your Responsibility

by Roger A. Stewart, Jr., CGCS

Many of us today feel we have numerous responsibilities as Golf Course Superintendents. One of the most important of which is our responsibility to the environment. We have become known as some of the most knowledgeable people in agriculture and therefore we have a responsibility to protect the environment in which we live utilizing all these tools that we have. However, we sometimes may be guilty of overlooking those responsibilities when our conscience takes a nap.

I recently came across the article printed in *Audubon* magazine in November of 1987, entitled "Hazards of the Game" by Jolee Edmonson. This article, as you can imagine, was not overly kind to the idea of golf course development. Ms. Edmonson did pay us all a compliment by essentially saying that we are a group who is sensitive to environmental concerns and are "conscientious, 'very human' beings intent on learning more about the interchange between golf courses and the

environment". I feel that we as a group are deserving of that tribute, but I think we can all take that extra step forward to hone our sensitivity even more. There is no better example to use the turf we manage so we need to convey that action to the golfer and beyond to the general public.

I want to make sure I do all I can to protect the environment and preserve it for the living beings on this earth, plant and animal alike. Through my education and experience as a Superintendent I know the precautions and pitfalls to be aware of, but I also think we all could use a reminder from time to time. That's why reading an article like that just renews my awareness to this problem. I think I will subscribe to that magazine just for that purpose. I recommend all Golf Course Superintendents read *Silent Spring* by Rachael Carson. I'm not suggesting I agree with the entire content of the book but some aspects of it are bound to touch a nerve.

There has been considerably more attention paid to the pesticides we use, now than five years ago. The pesticide manufacturers are responding to this pressure with safer products for humans and the environment we live in. It is our responsibility to use those materials in an environmentally prudent manner. I dare say there is more than one MAGCS member who is not licensed by the State of Illinois to apply pesticides! To those of you who may fall into this category, you are breaking the law and shirking your responsibility as a professional. We need to make sure that we all, as professional peers, share in man's responsibility for the health of Mother Nature.

When you're planning the coming year's activities for your golf course, be sure to include that sensitivity to the environment so we can all enjoy our unique way of making a living into the next century and beyond.

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DATE	CITY	CATEGORIES	LOCATION
Feb 7	Gurnee	G.S.	Days Inn, 5550 Grand Ave. Call (312) 223-8627
Feb 14	Park Ridge	G.S.	VFW Hall, Higgins & Canfield Rds. Call (312) 991-1160
Feb 21	Alsip	G.S.	Condesa del Mar, 12220 S. Cicero Ave. Pre-registration required, call (312) 532-4369
Feb 28-Mar 1	Glencoe	G.S., Turf, Orn	Chicago Botanic Garden, Lake-Cook Rd. E of I-94 Pre-registration required, call (312) 991-1160
Mar 7-8	Joliet	G.S., Turf, Orn	Holiday Inn, Larkin Ave. & I-80. Call (815) 727-9296
Mar 14	Crystal Lake	G.S.	Hob Nob II Restaurant, Rt. 14 & 31. Call (815) 338-3737
Mar 28-29	Western Springs	G.S., Turf, Orn	Lyons Twp. High School - So. Campus, Willow Springs Rd & 49th St. Call (312) 991-1160 to pre-register
Apr 11-12	Wheaton	G.S., Turf, Orn	DuPage Co. Fairgrounds, Manchester Rd. Pre-registration required, call (312) 682-7486
Apr 18-19	Glencoe	G.S., Turf, Orn	Chicago Botanic Garden, Lake-Cook Rd. E of I-94 Pre-registration required, call (312) 991-1160
Apr 25-26	Alsip	G.S., Turf, Orn	Condesa del Mar, 1220 S. Cicero Ave. Pre-registration required, call (312) 532-4369
Jun 6	Wheaton	G.S.	DuPage Co. Fairgrounds, Manchester Rd. Pre-registration not required. Testing at 12:30 pm. All Tests Available.

G.S. = General Standards; Orn = Ornamentals

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## What Keeps the Green Side Growing Up, and the Brown Side Growing Down?

by David B. Kittredge, Jr.  
Extension Forester

Dept. of Forestry & Wildlife Management  
University of Massachusetts

Trees come in a wide variety of shapes and sizes. This is in large part due to the tremendous number of different species that have evolved to occupy different parts of the forest environments. But why can trees of the same species look very different? Part of the explanation, of course, is that trees within the same species vary genetically. Trees of the same species can vary in appearance the same way people vary in appearance (though we are all the same species). Another important control of tree growth that results in a variety of shapes and forms is that of hormones.

trees have a number of different hormones, or growth regulators, that control the growth and behavior of the tree right at the level of the individual cell. Some of these regulators stimulate cell growth, and others inhibit it. These regulators interact with one another in the tree, and the overall result is a tree of unique shape and form.

Where are these hormones, and how do they work? They are produced primarily in the shoot tips, root tips, or leaves, and are soluble in water. This enables them to travel either up through the tree with water extracted by the roots from the soil, or down through the tree with sugars that were manufactured in the leaves. They are present in trees only in extremely small amounts — often less than one part per million — which makes them extremely difficult for scientists to study. Nevertheless, they have an extraordinary influence on the way trees grow.

Hormone interactions in trees control some of the basic events that we observe. For example, the breaking of bud dormancy in the spring is controlled by hormones. Those that inhibit the buds from unfolding gradually break down, and those that stimulate growth increase. The result is the green flush of new growth that we enjoy in the spring. When would a hormone that inhibits growth be useful for a tree? The reverse process takes place in the summer and fall, when growth-inhibiting hormones begin to dominate. This results in the cessation of shoot growth, the formation of buds to protect next year's fragile growth from the harsh winter environment, and (in the case of deciduous trees) the eventual falling of leaves to the forest floor.

Tree hormones also direct the growth of the stem in the upward direction, and the roots in a downward one. If a tree is tipped, for example, by a high wind, its ability to "bend up" and grow vertically is due to hormones. They travel to one side of the tree and make the cells there grow more, thus making the stem "bend," so to speak. The same thing occurs when houseplants "bend" towards the light in a room. Hormones are present in greater concentrations on one side of the plant, and the stimulated growth on that side makes the plant lean in a particular direction.

The notions of trees growing straight up, or leaning towards light in a forest, are subtle ones that we take for granted. The actions of hormones in trees can be much more dramatic, however. The concentrations of hormones in the shoots and stem regulate the degree to which the shoots throughout the tree will elongate. This is called "apical dominance," and insures that

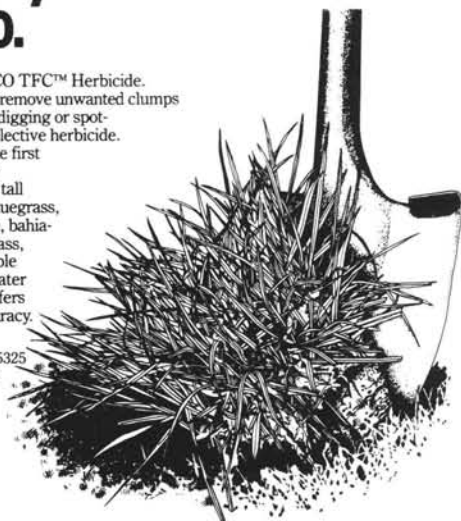
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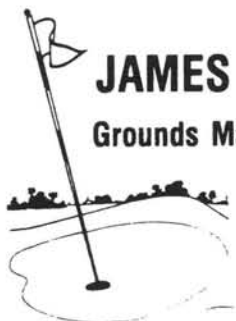
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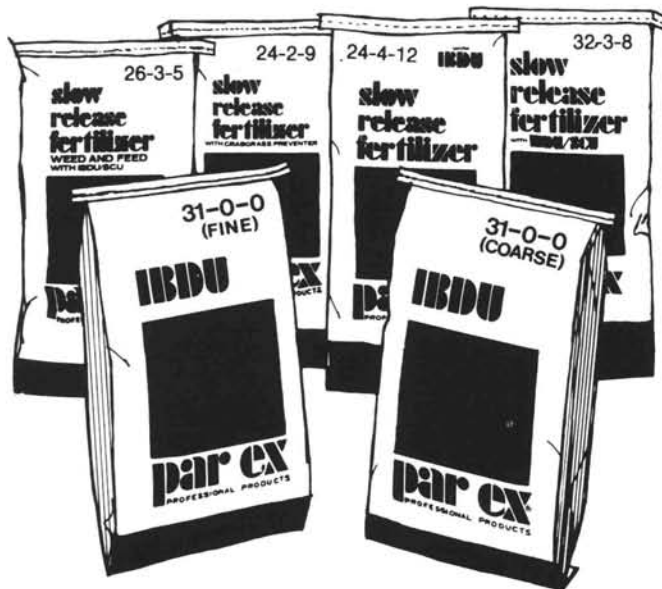
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## February Gardening Ideas

by James A. Fizzell

Sr. Extension Adviser, U of I.

February is an anxious month for Midwest gardeners. It's still winter. But, the days are noticeably longer and after the dark days of December and January we have the urge to get gardening. Worse yet, if February becomes unusually mild as it did last year, we tend to get ahead of ourselves, like sowing peas or lettuce. (It did work last year.)

While it is too early for sowing most things, there are some seeds that can be started indoors now, and plenty of other things to keep us busy.

Good gardens don't just happen. They take planning. First, make a scale drawing of your garden. List the things you want to grow and assign them adequate space. Decide how much seed you will need of each variety. Seed catalogs have been arriving for about a month now. Study them as you make your plans, and get your seed orders mailed.

Our office has a list of recommended varieties, too. Send a self-addressed, stamped envelope to University of Illinois, 4200 W. Euclid Ave., Rolling Meadows, IL 60008, and request the 1987 variety list.

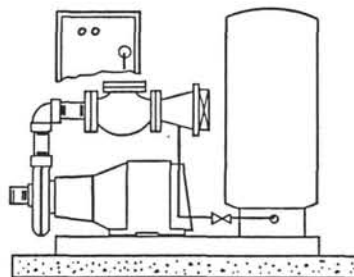
Records are helpful in planning. If you don't have records, start now. Start a gardening notebook. Record the things you planted, where you got the seed, problems, and how you solved them, sprays used, etc. and most important how the varieties performed.

Keep your garden layouts from each year so you can refer to them. It's helpful in planning rotations etc. to know what was where the year before last, etc.

Most of us hate to record failures. Memories are short so if you don't keep track of failures, like the bean variety that was rusty all season, or the tomato that never set fruit, you are bound to repeat them.

Plan to try some new things. Recently, intensive gardening systems such as French Intensive or Raised Beds have become the rage. They aren't really new. We've always grown in beds instead of rows in the greenhouse. Translating this to outdoor gardens just makes good sense, unless you intend to plant and harvest long rows with tractor-drawn equipment.

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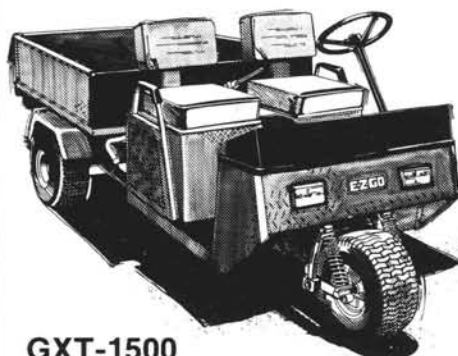
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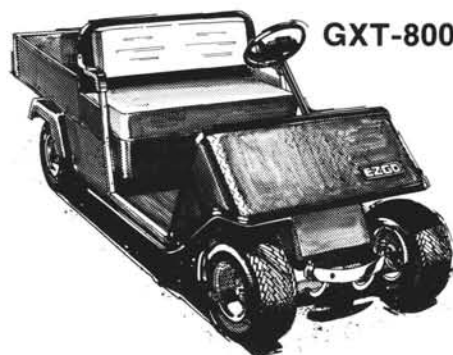
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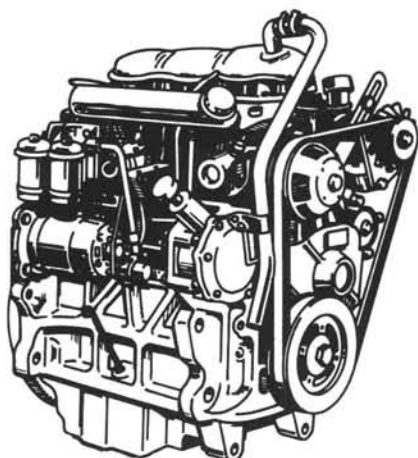
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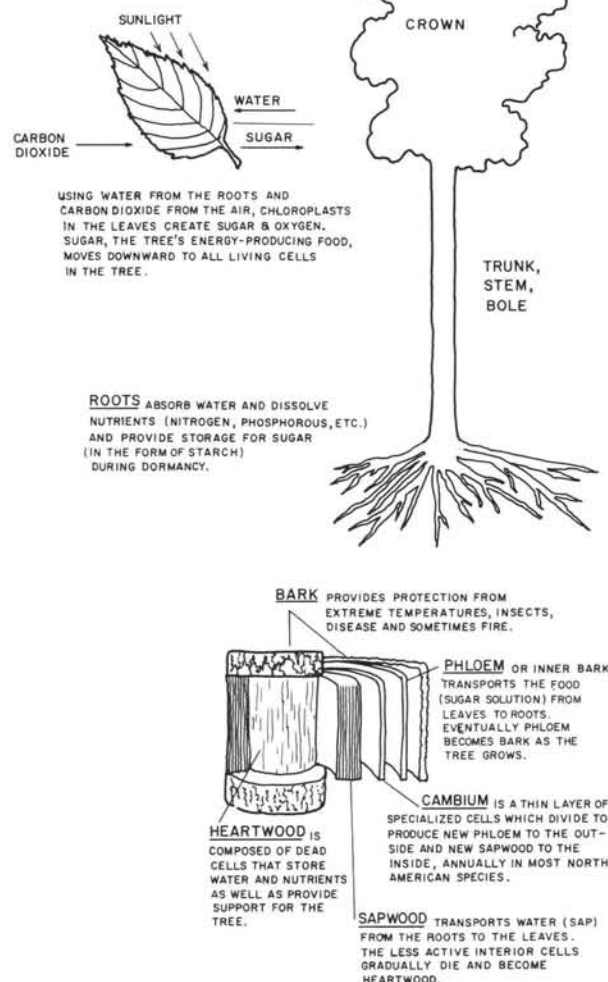
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the tree's main stem, or "leader," will continue to grow up, and the other secondary branches will grow out to the side. If an insect kills back the main leader, or an animal eats it, the tree loses a main source of hormonal production and control. The balance is upset by the absence of one hormone, and the result is a change in the form of the tree. In the case of eastern white pine and the white pine weevil, when the main leader is infested and dies, one (or several) of the lateral branches begins to "bend up" and assume the dominant vertical position. After repeated weevil attacks, the tree can have multiple main stems, all of which are crooked, due to their having been "bent up." These "cabbage pines" are characteristic throughout the New England landscape, and are the result of the external influence of the weevil and the internal response of the tree's hormones.

Long before people understood that trees had hormones, they were using one of the results of hormonal response to their advantage. In medieval Europe (and later in colonial America), firewood was the principal source of energy for heating and cooking. People knew that if they cut down certain species of hardwoods, they would sprout again from the stump and continue to grow. Every 20 or 30 years, they would return to the same few acres of forest and cut it all back again for firewood, with the knowledge that it would re-sprout. This was known as coppice cutting.

(continued page 10)



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(Continued from page 8)

American chestnut continues to exhibit the same kind of hormonal response when it is repeatedly killed back by the Chestnut Blight fungus. Trees of this species have been dying back and re-sprouting since the blight swept through New England in the early decades of this century. This behavior is another example of the loss of "apical dominance" or hormonal balance in the tree, resulting in the sprouting of what would otherwise be dormant buds at the base of the tree.

Based on a developing understanding of the role that hormones play in tree growth and form, forest scientists today are using hormones in research to clone superior trees. Tissue from such trees is taken back to the laboratory and grown in test tubes in the presence of hormones that will stimulate root and shoot formation. The resulting "little trees" (not actually seedlings) can then be planted. Knowledge of tree hormones has also resulted in the development of herbicides that are lethal to trees. These herbicides are an artificial form of hormone that stimulates excessive growth and peculiar physiological behavior which results in tree death.

Scientists continue to study the role that hormones play in tree growth. Much is yet to be learned about the interesting form of "communication" within a tree. Based on numerous external environmental stimuli such as day length or temperature, hormone balances in a tree change, and leaves fall, buds unfold or flowers appear. Shoot elongation and the degree of "apical dominance" is also controlled by hormones. Also, a tree's response to injury or external influences such as weevil infestation, high winds, animal browsing, or felling is controlled by hormones. The relative presence in minute quantities of these important hormones plays a significant role in determining the growth and form of the trees we enjoy today.

## Poa annua Control

**Poa annua** remains a serious problem facing many golf course superintendents. Over the last several years new information has come out concerning **Poa annua** control. Research at Michigan State University by Gaussoin and Branham has shown that collection of clippings and elimination of overwatering can reduce the amount of **Poa annua** in fairways. When attempting to reduce **Poa annua** in fairways the first step is to develop a management system to favor the desired turf species and then supplement proper management with chemical control measures.

Progress has received much attention as a preemergence and postemergence herbicide for **Poa annua** control. Turfgrass researchers from several universities report excellent success with Progress. Several factors are very important to keep in mind when using Progress. The first is to accurately assess the amount of annual bluegrass present. If the amount of annual bluegrass is underestimated there could be numerous bare or thin areas the following spring that golfers would find objectionable. Two applications of Progress, 3 to 4 weeks apart, are a must. The applications can be made between September and December. The annual bluegrass will show no symptoms of injury after the first application. Few, if any symptoms of injury will be seen after the second application. The results of applications made in the fall will be observed the following spring in a reduction in the amount of **Poa annua** present. The annual bluegrass treated with Progress dies during the winter. Often an overseeding program is needed in conjunction with the use of Progress to provide turf cover in bare or thin areas.



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