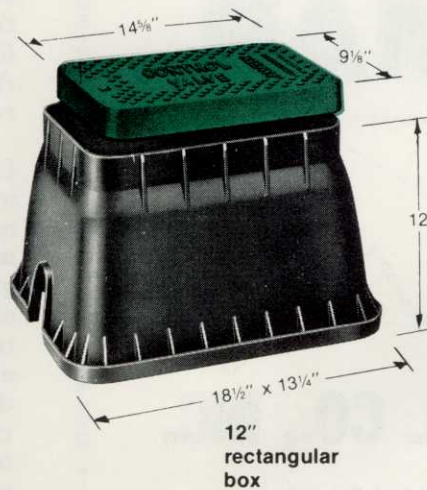
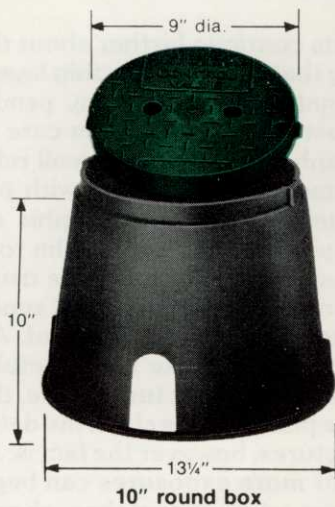
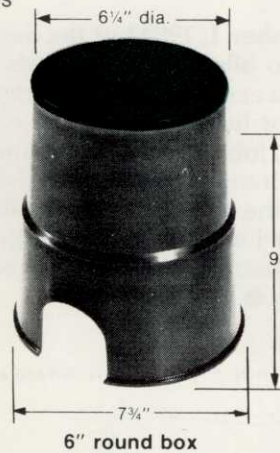


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(continued from page 20)

Unfortunately it did not turn out this way. Other than general discussions with the board members, my case was not brought up until August. During this month we had agreed on a contract and I received a hand shake, a pat on the back and a welcome aboard signal when leaving the table. After negotiating with the greens chairman, I knew I had my work cut out for me but I accepted this responsibility. Two weeks later I was informed that the greens committee decided to make a change. Shocked, confused and in a bit of a daze looking back I can see that many of the key people were making top salaries, including myself and were all replaced with lower wages. I might add it was not only the key people but employees who were in service for quite some time and making more than your usual dish washer, chef's helper or waitress. The last count of employees went from 210 to 140, in less than 2 months. As you all know private country clubs are a non profit organization and the majority of them raise annual dues or assess each member when money is needed. Historically my particular club was taking a loss each year. I am sure this is what the new members had to take a long hard look at. I do not feel it had anything to do with the particular employees capabilities but was prompted by one bottom line, the budget.

The legal takeover is December 1, 1984 but the members convinced the developer to allow their changes to be made before that time to create a smoother transition period. I think the thing that hurt me the most was the confidence I had in doing my job. I had been working with a popular agronomic consultant and receiving favorable reports, a newsletter from the committee had indicated the membership liked what I was doing and expressed their support and yet, without notice, I am presently looking for another position. ■

## "More Than Just A Picture"

By MIKE BAILEY

This is the third of a three part series dealing with the art of photography. The first of the series dealt with the aspects of needing an above average camera to capture a great photograph. The second dealt with the basics of photography. This final chapter is primarily directed towards various concepts, equipment and techniques aimed for an advanced photographer. By the end of this chapter we will evaluate many items that can greatly aid your ability towards taking exceptional photographs. Just like in golf, you can have all the fancy equipment available but, if you cannot play the game or capture the scene, your efforts in both events will fail.

The first criteria that distinguishes a novice from pro is the photographers' lack of concern to take many pictures in order to get that extra special photo. The cost of film is the least expensive element for this science. Quite often I find a situation that I might not ever get to see again, so I will not be bashful to crank out an entire roll of film in the matter of just a few minutes. A photographers' general rule is to take as many pictures as deemed fit, in order to insure that at least one of various pictures of different composition, shutter speed, operative setting and fine focusing is exactly the one that the boss wants.

Even if you do not plan to take a great deal of pictures over a long period of time, you can still try this tip to save some cost on film. New York mail order photography shops sell "fresh", factory packed Kodak film at a substantial savings, when buying quantities of 10 or more, as compared to local discount stores. Upon arrival of your mail order film, to help keep fresh until the stated expiration date stamped on the side of the box, simply store the film in your refrigerator (not the freezer) until needed. Allow film to warm up to room temperature and you're ready to shoot.

Lets continue further about the care of your film. Realizing that film is a very thin layer of plastic where upon the negative will ultimately produce your photograph, we must exercise extreme care to ensure a quality photograph. First off, we can all relate to a conditioned environment when dealing with plants, well, this also holds true for your photographic equipment and film. Never expose the camera or film to extreme heat, such as the dash of a car or even the trunk. Always try to keep the camera away from direct sunlight. When on a trip here is another tip to be aware of. Airports and other security systems that use x-ray metal detectors can prove to be fatal to your pictures. True, the security personel and all the posted signs claim the detectors will not damage your pictures, however the fact is: An accumulative build up of 5 or more exposures can begin to fog your film. Always have your gadget bag checked by hand and passed around the detectors. To expediate matters, have all

(continued on page 23)

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(continued from page 22)

zippers, pouches and lense caps open for viewing. Familiarize your procedure to dismount the lense from the camera body to prove all your paraphernalia is legit. There is one precaution that you can exercise to eliminate all such fears of exposure by purchasing an x-ray proof metal lined film storage bag. Place all of your film in such before your departure and you can be safe from any such contamination.

Now that we have evaluated all the precautions to exercise before you take your picture — what about the here after; the people you must trust to develop your pictures, let it be known this is where the professionals really come into play. You basically get what you pay for. Kodak is not the largest developer by chance. Film developing is truly a science whereby chemicals must be kept to within one degree fahrenheit variance for consistency of developing. Chemicals must be kept fresh and of proper concentrations. The negative tells all. If poorly developed, scratched or other wise damaged, forget it! The damage will never go away. Once you hand your canister over the counter to be developed, they control your films' destiny. Another item to consider, if, for any reason, they lose your film or other liabilities incur, your only recourse shall be that they will gladly give you another roll of film to try again, for this reason, when photographing important matters I will shoot more than just one roll. There are many companies offering good service, however, I cannot afford to take the chance and I go with Kodak. Can you? Once you get your slide pictures back, remember that you are still dealing with delicate material. Store in a dark, cool, dry place. The sun can fade the intensity of pictures while humidity can allow fungus to form. Preventative measures taken will obviously prolong the life of your pictures and your gear.

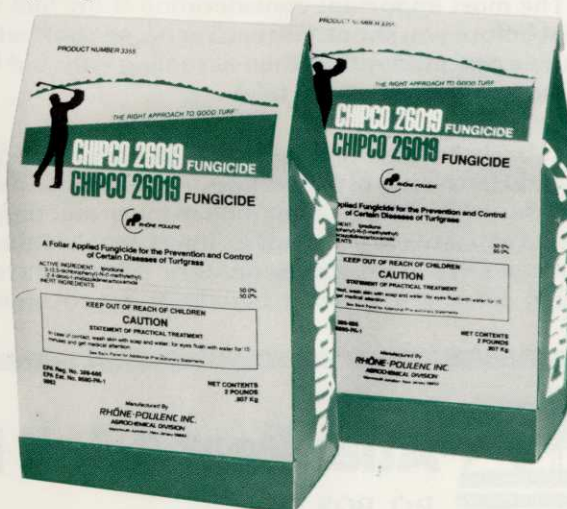
We are now beginning to indulge upon the fact that photography can be a hobby whereby we take pictures seriously. I believe there is really little difference between the degree of an advaced amateur and a professional photogrpgher. There are many accesories that one begins to contemplate purchasing. The last time I bought a new camera, my specific purpose of changing cameras was for the reason of wanting a motor drive (a device that attaches to the body of the camera to automatically advance the film without the need of manually advancing the film). A motor drive can crank as many as 6 frames per second (depending on the manufacturer and model).

Action photography, such as photographing a golfer just at impact is one example of just how valuable a motor drive can be; especially when you compare trying to catch the precise action by just guessing and pushing the button. One must be willing to pay the consequences, however, with a motor drive, one can crank out a 36 exposure roll of film in just six seconds! Even if you never plan to take action shots, I still believe you will enjoy the ease of a motor drive. My Nikon motor has an automatic shut off to eliminate battery drain. I totally eliminate the need of worrying if the film has been advanced for a take. The motor can be set into the single mode (advances 1 frame per push of the button) whereby with every shot I just push the button and voila. I have become so attached to the convenience of a motor, it feels rather primitive when I manually advance the film. The primary benefit of

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(continued from page 23)

the motor however is the fact of simplicity — one less item to distract from my ability to concentrate on the subject.

One of the most aggravating situations that can occur to an amateur photographer is to own a relatively good system but fail to take adequate pictures under adverse conditions. A flash unit will obviously reduce the fear of underexposed pictures, however, there are other items to consider as standard equipment. One must decide when does the time arise for the need of a tripod. In a situation involving photograph portraits, slow speed stills, slow speed action pans or a group of photos to be taken from one specific location, a tripod becomes necessary. There is one simple relief when buying a tripod: You get what you pay for. You can buy an inexpensive "toy" tripod for less than \$50.00, however, the quality is seldom good enough to produce a solid base for steady pictures. After having bought two "toy" tripods, I eventually bought a "real" tripod. One that is strong, sturdy, heavy and basically strong enough that I can stand on it. Costs will be well over \$100.00 but I have now finally made a purchase that will never need to be upgraded. The features of setting to eye height, adjustment for verticals, horizontals and panning are made of metal knobs and braces that shall last for a long time, if taken care of.

Now that we have evaluated the purchase of such items as tripods, motor drives and flash attachments it becomes evident that photographers can become very involved with gadgetry. Yes, there are even more items to consider. Facts are that a motor drive requires 6 AA batteries and a flash will require 4 AA batteries not to mention a back up set for each. You now have purchased 20 AA batteries. You have reached a point where rechargeable batteries and 2 charges are well worth the investment. The most important consideration is the fact that the night before you shoot, you can recharge your batteries to their potential rather than assuming your old batteries will hold for one more take.

One last basic accessory to consider as standard equipment would be the use of more filters. As mentioned in the first article, a UV filter is a good filter for protecting the front glass elements of your lenses, however what about a more useful filter. If one takes outdoor color pictures, a polarizing filter will provide beneficial improvements.

Remember those sunglass commercials which cut out the glare so you can see better? Much the same is true for your camera. A polarizing filter will definitely reduce glare whereby richer colors will be revealed. Blue skies will become bluer, white clouds more pronounced and the green grass even greener. Yes, leaf blades are shiny and also reflect glare, whereby the polarizing filter will filter out reflected waves and the turf grass will actually appear greener! The filter threads to the front of the lens barrel, rotating the filter 90° in either direction will produce the optimal effect. There is one drawback to this phenomena. The filter will require an increase of one f-stop because the filter reduces light penetration, so plan accordingly.

We have now just about reached the end of the line as for all the fancy gadgetry that we should seriously consider for the advanced amateur. You now should have all the equipment needed to take that "Perfect Picture". To be a failure now would be much like dressing up in your fancy duds along with your shiny new clubs (not to mention your name plastered on the side of a big pro bag) only to proceed to the first tee and shank your tee shot.

Lets review some techniques that can prove helpful. Learn to become familiar with the speed (ASA) of your film so that you are appreciative of light intensities relating to shutter speeds and operative settings. Try to capture pictures with clean, simple well composed precisely focussed subject matter, that is of primary concern. Never take a photo with confusing subject matter or your photo will be undefined and look much like a plate of spaghetti. Don't be bashful about taking a few extra pictures to increase your guarantee of getting a good one. If all of your pictures don't come out perfect - don't become discouraged, profit by your mistakes. Learn what you did wrong so you can minimize your mistakes. You should now have the potential to photograph just about any type of subject matter under just about any type of situation Whether the subject is brightly or darkly lit, fast or slow moving, colorful or bland, into the sun's glare, hand held or on a tripod, one photo, or via the means of multiple shots with a motor drive and best of all you are in control of the camera. Go at it. Take good care of your system and you will have good photos to cherish for years to come and someday maybe your grandchildren will ask, "were you a professional photographer way back when?■"



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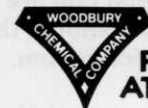
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# The Gator Growls



## **Venomous Insects: They May Be Hazardous To Your Health**

By SANDRA P. CARMOUCHE

Imagine that it is late spring and you are making an early morning inspection of your golf course via golf cart. As you round number eight tee your attention is drawn to Jim, one of your employees, who is pruning myrtle bushes in the rough.

Suddenly Jim drops his pruning shears and begins to run while his arms flail the air. You drive over and he tells you that he bothered a swarm of bees and got stung on the forearm.

Jim assures you that he is alright, but before you leave there are a few bushes you want to point out that need special attention.

As you talk, you notice that Jim is having trouble catching his breath. He frequently wipes his eyes, which look red and watery, and says he is feeling weird, sort of weak and dizzy. You tell him to get in the golf cart and you will take him to the maintenance building.

Halfway there, Jim grabs his stomach and doubles over. His voice sounds raspy and his speech is slurred as he complains of nausea and cramps.

By the time you reach the maintenance building, Jim is nearly unconscious and his skin tone is becoming gray. You call for emergency assistance, but it looks as if Jim might die before help arrives. What can you do?

First, you need to know what you are dealing with. Jim is suffering from anaphylactic shock, the severest form of an allergic reaction to insect venom.

Although there are no exact statistics on the number of people allergic to venomous insects (some estimate it to be between four and eight people in 1000), the number is small. But because golf course personnel are frequently

exposed to insect habitats, it is important that a golf course superintendent know something about the effects of stinging and biting insects and what to do in case of an emergency.

According to Seth Schurman, M.D., P.A., an allergist with offices in Fort Myers and Naples, Florida, there are between 90 and 100 deaths recorded each year in the United States as a result of insect stings and bites. But Dr. Schurman says the figures are understated since they represent only those cases reported to health departments. And occasionally death occurs so quickly, sometimes in seconds, that the site of the injury has no time to swell or become inflamed. Consequently, unless the attending physician is alerted to the possibility of insect venom being involved, the cause of death may be recorded as something different.

Because symptoms of allergic reactions to insect venom can be confusing, the ability to recognize them could mean the difference between life and death.

- **Mild Symptoms:** swelling of two or more joints (for instance, a sting on the forearm produces swelling in the wrist and elbow), itchy eyes, dry cough, hives or rash, a constricted feeling in the chest or throat, wheezing, nausea, vomiting, abdominal pain, dizziness
- **Severe Symptoms:** difficulty in breathing, hoarseness, slurred speech, difficulty in swallowing, confusion, a sense of doom
- **Anaphylactic Shock:** cyanosis (skin tone becomes gray or blue from lack of oxygen), reduced blood pressure, incontinence, unconsciousness, death

*(continued on page 28)*

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*(continued from page 26)*

The most important thing to remember is that symptoms can escalate from the mild to the severe in a matter of minutes. The first sign of trouble following an insect sting or bite should be treated as an emergency and medical attention should be sought immediately.

Although it is possible, it is doubtful that a person who knows he is allergic to venomous insects would consider a position in the field of golf course maintenance. The risks are too substantial. Unfortunately, for several reasons, not everyone who is allergic to insect venom knows it.

Before a person can exhibit an allergic reaction to anything, he must first be sensitized. In other words, an individual must have had previous contact with an allergen (the substance that induces allergy) before he can react. Frequently, there are no signs of an allergic reaction upon first contact with an allergen so the individual has no reason to believe he is allergic.

Also, according to Dr. Schurman, studies at the Johns Hopkins University in Baltimore, Maryland indicate that an allergic individual will become desensitized to insect allergens over a period of 10 years, provided there is no contact with them during that period. For example, a person is stung by a wasp when he is five years old and again 20 years later. On neither occasion did he exhibit an allergic reaction. Yet when he is stung by a wasp at the age of 27, he experiences a severe reaction.

There is no method at present for predetermining how severe a reaction will be. The degree of sensitivity varies from one person to the next and the amount of venom injected into the skin can become a factor, particularly where multiple stings and bites are concerned. Also, insect venom is more potent during the breeding season than it is at other times of the year.

Since 1978, allergists have successfully used a longterm treatment called hyposensitization against allergies to the honey bee, yellow jacket, yellow hornet, white-faced hornet, wasp, and, to a lesser extent, the fire ant. Injections of the venom that the individual is allergic to are administered in doses that increase over a period of time until the person becomes tolerant, or desensitized, to the venom. In terms of preventing fatal reactions, the treatment is 100% effective.

Unfortunately, hyposensitization is not as successful in treating allergies to other venomous insects, such as the mosquito or the deer fly. The individual who is allergic to these insects must rely on an insect sting kit to avoid disaster.

Insect sting kits all contain the drug epinephrine, usually pre-measured and pre-loaded into a syringe, which stabilizes the individual long enough to reach a hospital.

The problem with the kit is that it must be carried on the person at all times and the hypersensitive individual may become unconscious before he has a chance to inject himself.

Also, Dr. Schurman cautions against being lulled into a false sense of security. The symptoms of an allergic reaction can completely disappear after the use of epinephrine. But once the effects of the drug wear off, the symptoms can recur with deadly results. It is imperative that a person get to a hospital, even though he has injected himself with epinephrine and feels fine.

Should an emergency situation arise and there is no epinephrine available, there are several other things that can be done for the individual experiencing an allergic reaction.

- If a stinger is imbedded in the skin, brush or scrape it out (the bee's venom sac is attached to the stinger and grabbing or squeezing the skin around it will force more venom into the skin).
- Apply ice to slow absorption of the venom to other parts of the body.
- Apply a tourniquet above the site of the sting or bite (remember to loosen the tourniquet every three to five minutes).
- Since so many golf courses are located a good distance from any hospitals, and because time is such an important factor, it would be best to call an emergency vehicle for help. They all carry epinephrine and will probably be able to reach you in less time than you could reach a hospital.
- Should it become necessary, cardio-pulmonary resuscitation may prolong life long enough for help to arrive.

Obviously, the best treatment for allergic reactions is their prevention. The allergic individual, as well as the non-allergic person, can benefit from the following precautions.

- Don't wear perfumes, colognes, sun tan products, or anything that has a sweet odor.
- Wear khaki, white, or tan-colored clothing as opposed to flowery or bright clothing.
- Never go barefoot and don't wear sandals. Yellow jackets build their nests in the ground.
- Use caution around flower beds, garbage cans, and anything else that emits a sweet odor.
- Don't eat or drink outside. Not only does it attract insects, there have been occasions when an insect has flown into a can of soda and been swallowed.
- Exterminate nests and hives.
- If contact with insects is imminent, don't make jerky movements or swat at the insects. It can incite them to sting.
- Individuals who are allergic to insect venom should wear medic alert tags.

*(continued on page 29)*



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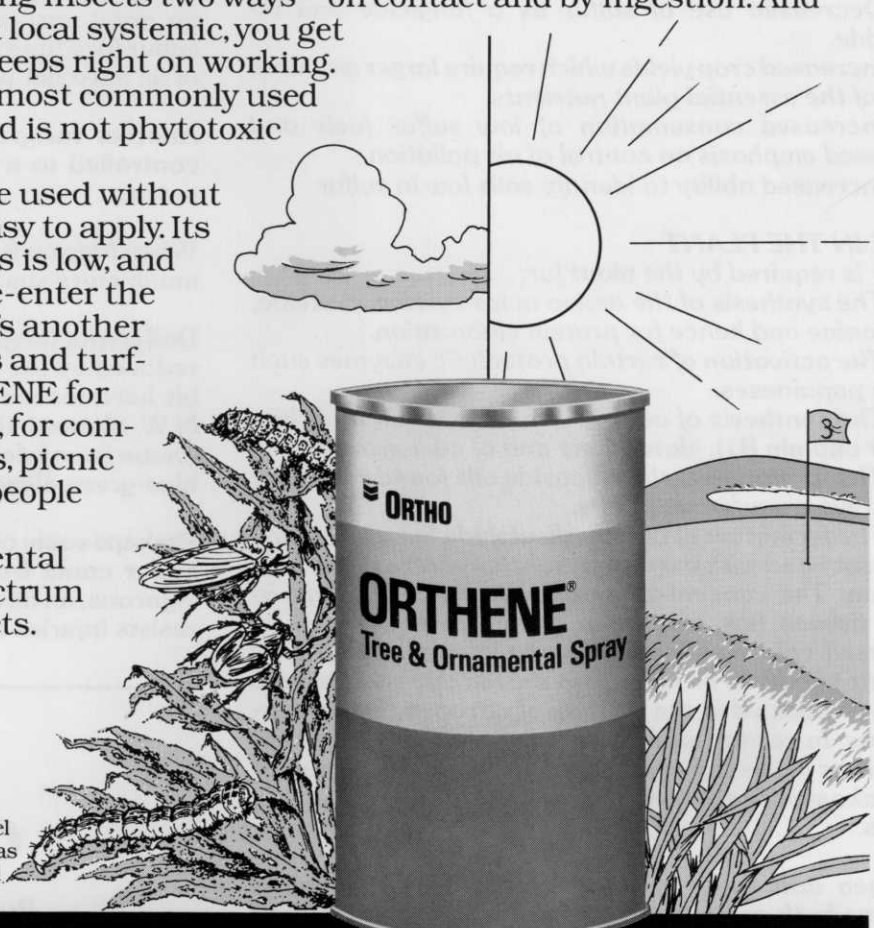
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Interest in sulfur as a plant nutrient has increased greatly in the past few years, partly because reports of sulfur deficiency throughout the world are becoming more frequent and extensive. The main reason for greater occurrence of sulfur deficiencies are:

1. Increased use of high analysis, essentially sulfur-free fertilizers.
2. Decreased use of sulfur as a fungicide and insecticide.
3. Increased crop yields which require larger amounts of all of the essential plant nutrients.
4. Increased consumption of low sulfur fuels and increased emphasis on control of air pollution.
5. Increased ability to identify soils low in sulfur.

## ROLE IN THE PLANT

Sulfur is required by the plant for:

1. The synthesis of the amino acids cystine, cysteine, methionine and hence for protein elaboration.
2. The activation of certain proteolytic enzymes such as the papainases.
3. The synthesis of certain vitamins (biotin and thiamin or vitamin B1), glutathione and of coenzyme A.
4. The formation of the glucoside oils found in onions, garlic and cruciferous plants.
5. The formation of certain disulphide linkages which are associated with the structural characteristics of protoplasm. The concentration of phydril (-SH) groups in plant tissues has also been shown to be related to increased cold resistance in some species. Sulfur was recently shown to be present in the nitrogenase enzyme which is involved in the fixation of nitrogen by microorganisms. In certain situations free living nitrogen-fixing organisms in the soil and the nodule bacteria in legumes will make significant contributions to the nitrogen supply in soils.

Nitrogen and sulfur requirements are closely linked because both are required for protein synthesis. Plant protein contains about 1% S and 17% N. The need for sulfur fertilization often depends upon the supply on N and other nutrients and fertilizations at high rates with these elements may induce a sulfur deficiency.

Why is sulfur important? In the absence of sulfur, turfgrass exhibits a chlorosis that frequently occurs as an intense yellow color. In mild cases one may think of nitrogen deficiency or even iron deficiency.

On the positive side, we find that sulfur enhances color, density and growth. There seems to be a direct relationship with nitrogen. The turfgrass fertilized with the higher quantities of nitrogen show increased response to sulfur. It has been reported that when 12 pounds of nitrogen are used, there is a requirement for 8 pounds of potassium oxide and 3.45 pounds of sulfur.

The net effects of adequate sulfur in combination with N, P and K are several:

1. Better decomposition of residues (thatch)
2. Stimulation of soil microorganisms.
3. Improved color, density and composition of turfgrass.
4. Greater drought tolerance.
5. Improved winter hardiness.

Well-documented studies by Goss, Gould and others in the Pacific Northwest reveal some very convincing reasons for applying sulfur along with nitrogen, phosphorus and potassium. Adequate sulfur reduced *Fusarium* patch in turfgrass by 86%.

This property of controlling disease really should cause no great surprise because we have known this about sulfur for a long time. The surprising thing is that so many of us have not put the knowledge to use.

Another turfgrass disease that has been checked and controlled to a large degree with sulfur is *Ophiobolus* patch.

When Merion Kentucky bluegrass is short of sulfur, it is much more susceptible to powdery mildew.

Dollarspot fungus in warm-season grasses in Florida was reduced by the use of sulfur in fertilizers. This may be a bit hard for many to believe, but data from the Pacific N.W. showed that the adequate sulfur prevented *Poa annua* from infesting bentgrass turf. At the same time the blue-green algae was reduced significantly.

Perhaps some of the advantages found in using adequate sulfur come from the fact that turf is rendered more vigorous, an obvious sign of healthier grass. Healthy turf resists injuries and recovers faster when injury occurs. ■

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## Basics Of Calibration

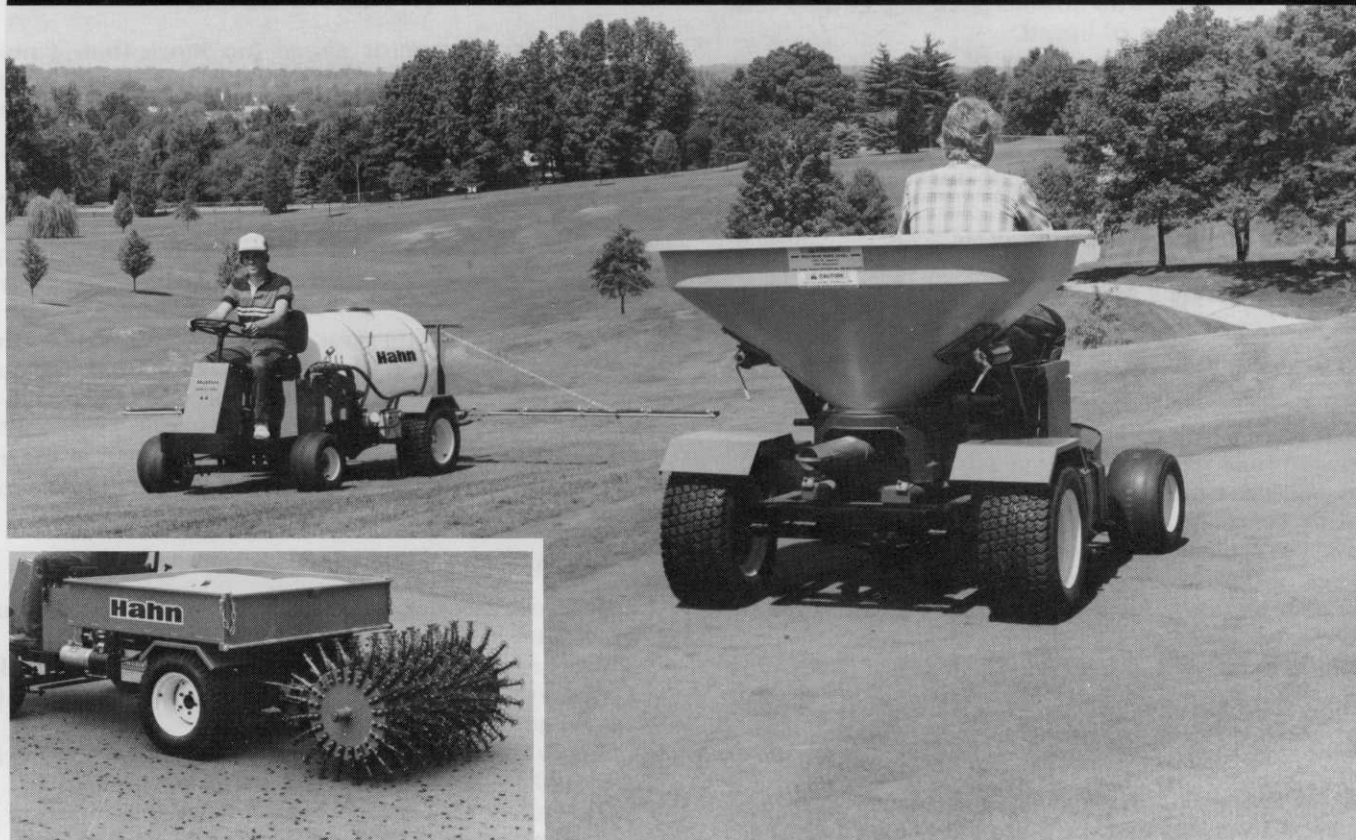
By DR. STANLEY R. SWIER  
Extension Specialist/Entomology  
University of New Hampshire

Every now and then, everyone needs to review the basics. We all forget, especially when there is so much we need to know about our jobs. Before I came to the University of New Hampshire, I taught a course in Turf Pest Control at the Agricultural Technical Institute, Ohio

(continued on page D)



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(continued from page B)

State University. While teaching two-year turf grass majors, I developed a fact sheet on the basics of turf calibration. I would like to share this information with you. Improper calibration may be responsible for much of our poor pest control. It is also very costly. This information will help you measure the area of your green and fairways and help you quickly calibrate your equipment.

#### MEASURING GREENS:

1. Cut a piece of plywood 3 x 3', and with a protractor and magic marker, draw 36 lines at 10 degree intervals from center to edge of board.
2. Drive a spike through center of board, and place board approximately in center of green.
3. With another man and a 100' tape, measure distance from center of board to edge of green (or collar) at 10 degree intervals. You'll have 36 measurements for each green.
4. Add these 36 figures together and divide the total by 36 to get the average radius of the green.
5. Area of the circle =  $\pi r^2$ .

#### MEASURING FAIRWAYS:

1. You'll need a rollatope, a Cushman, and about four hours of time to measure your fairways.
2. Drive across a fairway and measure this distance, and do this every 30 yards or so up the fairway. Add all these figures together and divide by the number of figures to get the average width.
3. Measure distance from start of fairway to front of green.
4. Multiply average width by length to get area.

#### CALIBRATION OF SMALL SPREADERS:

1. Check information on fertilizer bag for manufacturer's recommended setting, and begin at this setting.
2. Compute amount of material you want to apply per 1000 sq. ft. For example, a 20-0-0 material yields 1 lb. of actual N for every 5 lbs. of material applied.
3. Weight the amount of material that you have computed, and put this amount in the spreader.
4. Mark an area 20 x 50 feet with paint on blacktop or with stakes on grass.
5. Apply material at normal walking speed — if after covering the 1000 sq. ft. you have material remaining in spreader, increase setting by a little — and conversely if you ran out of material before finishing the 1000 sq. ft.
6. Write down spreader setting in your records for future reference.
7. NEVER fill a spreader on a green or tee — use a nearby cart path or area out of play. You may just break a bag or overfill your spreader.
8. When fertilizing greens and tees, don't fill your spreader completely full unless you can empty the contents on a green or nearby tee. If you can't empty the spreader, you'll just have to lift that extra-heavy spreader into the back of a Cushman, and there's also the chances that you may upset this top-heavy spreader while in transport.

#### CALIBRATION OF BIG SPREADERS:

1. Again, check information on bag for manufacturer's recommended setting, and set spreader at this setting.
2. With a big spreader, you have to know:
  - a) spreading width of spreader (this varies with material)
  - b) speed of tractor in feet per minute

$$3 \text{ mph} = \frac{3 \times 5280}{60} = 264 \text{ fpm}$$

$$4 \text{ mph} = 352 \text{ fpm}$$

3. choose your tractor speed (no more than 4 mph), measure the width of spread, and calculate the number of sq. ft. that will be covered in one minute. For example, 4 mph x 20 ft. spread = 7040 sq. ft.
4. Compute the amount of material that you want to spread on 7000 sq. ft., and then spread it. If it takes longer or shorter than one minute to empty the spreader, adjust the spreader opening accordingly.
5. Again, record this spreader setting for future reference.
6. Hint for computing your fairway fertilizer and fungicide requirement: if you have measured your fairways and have a total of 33 acres for example, base all calculations on 40 acres due to overlap and to overflow into rough. You won't be caught short at the end of the season if you give yourself a little fudge factor.

#### CALIBRATION OF HANDGUN:

1. Measure amount of water that is pumped through handgun in one minute.
2. At your normal spraying speed, time how long it takes you to spray 100 sq. ft. Repeat this twice and take the average.
3. Simple mathematics will determine how many acres (or 100 sq. ft.) that you can spray per tank.
4. Remember that every man will have a different spraying speed, thus calibration will vary from man to man.

#### CALIBRATION OF BOOM SPRAYER:

1. Fill sprayer one-half full or so of water (no fungicides yet), and set the operating pressure you desire. The lower the pressure, the less the mist and the more acreage per tank.
2. Collect the amount of water pumped through one of the nozzles in one minute. Repeat this at three nozzles along the boom and take average.
3. Plug this number into the following formula:

$$\text{GPA} = \frac{5940 \times \text{GPM}}{\text{MPH} \times \text{W}^*}$$

\*where W is nozzle spacing (in boom spraying) or spray swath (in boomless spraying) in inches.

4. Another helpful hint here is to obtain a gallons-per-acre chart that lists all sizes of nozzles. Not only can you check your calibration, but when you change tip size, you don't have to calibrate again — just refer to the chart and work out a ratio. ■



# Pesticide Poisoning —Two Case Histories

By LYNN GRIFFITH

Part of working as an agricultural consultant and laboratory representative involves dealing with farmers, growers, and superintendents on a one to one basis, every day. Dealing with these agricultural professionals in such an intimate manner gives you insight into grower's thought, experience and opinions on a number of things. This year two of my clients developed pesticide poisoning in separate incidents. The nature of their experiences and their similarities is quite startling, as is the way the poisoning affected their outlook on chemicals, agriculture, and the environment.

The victims were both educated, experienced people, one a grower/manager, one a farm owner. The chemicals were different, but both were granular organophosphates. One victim worked in a wholesale nursery, the other in commercial turf. Both were more than happy to consent to interviews, and were glad that someone was telling their story in a professional, agriculturalist manner without media sensationalism. For the sake on anonymity, I will call the victim John #1 and John #2.

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- Golf course superintendents should screen job applicants for allergies (people who are allergic to one type of insect venom are often allergic to others).
- A golf course superintendent should familiarize himself with those golfers who are allergic to insect venom and who are members of, or regularly play, the golf course where he is employed.

Since there are so few individuals who are allergic to insect venom, it is unlikely that golf course personnel will ever have to deal with a crisis such as the hypothetical Jim presented. But because the potential is present, the individual who can recognize the symptoms and act swiftly may save a life. ■

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Early one morning, John #1 was applying a granular pesticide to container nursery plants. It was hot, and there was little ventilation. He was wearing rubber gloves and a spray mask, but no arm cover. Apparently the material was absorbed through the skin on John's arms.

About 15 minutes after application, he started feeling nauseous, followed by profuse sweating and stomach cramps. Partial loss of vision occurred, followed by severe vomiting and diarrhea. The stomach cramps left him doubled over, virtually unable to move.

Other staff members called an ambulance. Upon arrival, the paramedics removed all of John's clothing and hosed him down. They took a bag of the chemical with them, and headed for the hospital. John remembers the paramedics talking to him, asking him questions, but he was unable to speak or respond. They gave John injections in the ambulance, but there was not enough time to get to the hospital from the rural nursery location. Another ambulance had to meet them with a heart-lung machine to keep John's heart beating, because otherwise he probably wouldn't have lived.

John #1 arrived at the hospital and was placed immediately in intensive care, still on a heart-lung machine. The injection began to work, and John started to perk up. A staff member would check on him every few minutes to keep him awake and talking. They also frequently had him blow into a machine to measure lung capacity.

For the four days John #1 was in the hospital, the symptoms came and went. He remembers feeling severe tension, anxiety, and having a very short temper and paranoia. It took two weeks for John to feel good. Now, six months later, he's pretty well over it, but he still is acutely aware of his condition, and still suffers occasional headaches and short temper. John said, "Even talking to you about it now, I'm getting a headache."

The doctors say the symptoms could linger for thirty days or thirty years, depending on his particular chemistry. Today John says the poisoning has a big psychological effect on him. He thinks a lot, and questions the value of what he is doing. He feels angry that the whole thing happened, and has thought of quitting agriculture as a profession. John is no big environmentalist, but he favors education in pesticide use, and alternatives to agricultural chemicals.

John #2's story is somewhat different, but similar in some surprising ways.

About a month ago, John #2 was calibrating his spreader, preparing to apply a granular material to his commercial turf. He normally takes precautions and uses gloves and a mask, but he was only calibrating the machine and the gloves and mask were in the shed, a few hundred yards away. So he picked up the opened bag, and dumped the contents into the hopper. It was slightly windy, and the powder fluffed up as he poured. A small cloud of pesticide powder formed over the hopper, briefly covering his face, chest, and arms. John #2 coughed once or twice,

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fanned away the cloud, and proceeded to calibrate the spreader.

Afterward, he went home, took a shower, had dinner, all the usual after-work activities, and felt fine. About midnight, however, he woke up with a severe headache and severe perspiration. This turned into "the shakes," and he felt the room start to spin around. Then John #2 felt alternately hot and sweaty, and then very cold. During the cold period, no amount of blankets could keep him warm.

A while later, John #2 settled down a little, and got up to look up pesticide poisoning in a farm chemicals book. Seeing the symptoms in the book were similar to his, he asked his wife to take him out to the farm, as he couldn't drive in his condition. He wanted to see what type of chemical this was, because he had never used it before. But before they got too far, the dizziness, sweating, and shakes returned, and John #2 told his wife to take him to the hospital.

Upon arrival, John had trouble convincing the staff of his problem. "How do you know you're poisoned?" they asked. One doctor told him he was just getting a bad cold, but John persisted, and another doctor was summoned, one who had experience in pesticide poisoning. After detailed discussion, including a call to the pesticide manufacturer, the doctor finally agreed that it was pesticide poisoning. John #2 was given antidotal injections, and kept for observation overnight.

In the morning he was released, and given a prescription to combat the symptoms. John #2 felt fairly good during the day, but every night the dizziness and sweating returned, as did the muscle spasms. The pills helped some, but he has not had a good night's sleep in the month since the incident. The seizures would last all night early on, but now they only go on for about two hours.

About two weeks later, John #2 drove his truck to the area where he had applied the material, and as soon as he got to the area, the attacks started. Later that week, he drove the tractor with the spreader that had contained the chemical, and again felt the dizziness and perspiration begin. As John was recounting the story to me, he began to perspire and salivate, and his eyes had a funny look to them, with constricted pupils. He says that even thinking about it can bring on the seizures.

John #2 told me that if he had to use the chemical to grow grass, then he would sell the farm. He got rid of the spreader and his clothes, and purchased a \$400 protective suit with mask, gloves, boots, the works. John will still not venture into the field where the material was applied, and he will not set foot on any golf course.

The type of pesticide poisoning which John #1 and John #2 suffered was organophosphate poisoning. This class of chemical (and also many others) can affect the transmission of nerve impulses, resulting in a broad range of symptom types, including, as John #1 and John #2 put it, "losing control of your body." If the nerve impulses are

interrupted enough, the brain can't tell the heart to beat or the lungs to breathe, and death results.

As a consultant, I recommend agricultural chemicals every day. Like most of you, I try to respect the benefit from the use of chemicals, and to respect the environment as well. Why did I write this article? Not to scare, nor no alarm, nor preach. These guys who had this problem had worked in agriculture and had used chemicals for years. They are guys working and making a living in agriculture just like you. Pesticide poisoning can happen to anybody. It happened to these guys, and it can happen to you, easier than you think. Be careful, respect these materials, use your head, and encourage those who work for you to do the same. ■

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## **New St. Augustine Variety To Be Released**

By HAROLD JONES

A new variety of St. Augustinegrass developed by plant breeders at the Institute of Food and Agricultural Sciences, University of Florida.

'Floralawn' St. Augustine is resistant to St. Augustine decline virus, southern chinch bugs, and downy mildew. It is tolerant to sod webworms under low fertility.

Like "Floritam" it is equally coarse in leaf texture and stolon texture and is sensitive to winter injury, although no winter injury has been observed to date in Florida. It is very similar to 'Floritam' in its shade of tolerance and will not take as much as shade as "Floratine".

A major advantage of this grass is that it can be distinguished from other varieties of St. Augustinegrass by alcohol dehydrogenase, electrophoretic banding patterns and morphological characteristics.

There are so many questions as to whether or not a consumer has gotten the "Floritam" they paid for and this grass may help us reduce this problem.

This new variety has not been released to the sod growers and will probably not really be available for planting for at least 18 to 24 months.

Extension information and services are available to all individuals regardless of race, color, sex, or national origin.

Extension information given herein is for educational purposes only. Reference to commercial products or trade names is made with the understanding that no discrimination is intended and no endorsement by the Cooperative Extension Service is implied.

We hope the information in this newsletter will help you have the grass which is greener on The Other Side. Suggestions regarding the content or format of this newsletter are welcome. ■