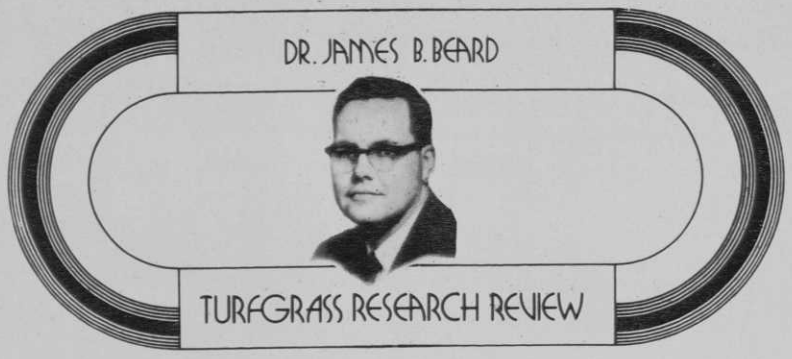

Nematode control

Developments in nematode control. *G.C. Smart Jr. 1970. Proceedings of the Florida Turfgrass Management Conference. 18:91-93. (from the Department of Entomology and Nematology, University of Florida, Gainsville, Fla. 32603).*

The author reports that when the commonly used nematicides are applied there is a temporary recovery from nematode injury followed by a subsequent deterioration caused by additional nematode activity. The author suggests that when the initially high population of sting nematodes is controlled, the lance nematode population builds up, causing serious injury. The lance nematode does not thrive in the presence of the sting nematode, however. Evidently, the commonly used nematicides are not effective in controlling the lance nematodes.

Consequently, the authors initiated investigations concerning some newer nematicides for control of the lance nematode on bermudagrass turfs. Two experiments were conducted on Ormond bermudagrass turfs in two different locations. Application dates at each of two locations were May 5 and May 27 with four replications of each nematicide in both studies. Subsequently, lance nematode counts were made in June, July, August and September.

The nematicides and application rates per acre included in the first study were Nemacur (15 pounds), Tirpate (15 pounds), Furadan (20 pounds), Sarolex (30 pounds) and DuPont 1410 (12 pounds). Only Nemacur at eight and 16 pounds per acre and Tirpate at six and eight pounds per acre were included in the second study initiated May 27.

The results of these studies reveal that Nemacur provides good control of the lance nematode along with excellent control of the sting and ring nematodes under the conditions of this study. Tirpate was also promising, but its duration of effective control was somewhat shorter than Nemacur. The maximun nematode population reduction occurred two months after application.

Comments: The sting nematode *(Belonolaimus* spp.), referred to in the article, has been proven to be a parasitic nematode only on the warm season species, including bermudagrass, St. Augustinegrass and centipedegrass. It is an external parasite causing root lesions and stunting of the root system along with chlorotic, stunted shoots.

The author of the article indicates that four nematicides are effective in controlling the sting nematode under Florida conditions. They are (a) DBCP (1, 2-dibromo-3-chloroprophane), (b) Sarolex (0, 0-diethyl 0-(2-isopropyl-4-methyl-6-pyrimidinyl) posophorothioate), (c) Dasanit (0, 0-diethyl 0-p-(methyl-sulfinyl) phenyl phosphorothioate and (d) Mocap (0-ethyl S,S-dipropyl phosphorodithioate).

The lance nematode (*Hoplolaimus* ssp.) has been proven to be a parasitic nematode only on bermudagrass species. It causes browning and swelling of the roots and restricted shoot growth. The two nematicides showing the best potential for controlling the lance nematode on bermudagrass in Florida are identified by the following chemical names: (a) Nemacur (Ethyl 4-(methylthio)-m-toly isopropylphosphoramidate) and (b) Tirpate (2,4-dimethyl-2-formyl-1, 3-dithiolane oxime N-methylcarbamate).

When attempting to control nematode populations through the use of nematicides, remember that the available materials provide a substantial reduction in the population of parasitic nematodes, but that eradication is seldom achieved. Thus, re-

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peat applications are usually necessary whenever injurious effects from the parasitic nematodes occur. Where nematode problems persist, a minimum of one nematicide application per year is usually required.

***Typhula* snow mold control.** *J.M. Vargas Jr. and J.B. Beard. 1970. Michigan Turfgrass Report. pp.4-6. (from the Department of Botany and Plant Pathology, Michigan State University, East Lansing, Mich. 48823).*

The paper involves a progress report covering (a) the third year of a fungicide evaluation study for the control of *Typhula* snow mold and (b) the first year of a study to determine the optimum time of application for snow mold fungicides. The plot area was located on a Penncross creeping bentgrass turf maintained at a cutting height of 0.5 inch with clippings returned. The site was located in northern Michigan where the turf was covered with deep snow from mid-November through mid-April. Consequently a very uniform *Typhula* snow mold infestation was assured. Materials and rates per 1,000 square feet included in the study were Cadmium (three and five ounces), Calo-clor (four ounces), Calo-gran (eight pounds), Demosan granular (2.5 and 3.75 pounds), Panogen (three ounces), PMAS (two ounces), T.B.Z. (four ounces) and Tersan O.M. (eight ounces).

The third year's results of the fungicide evaluations for *Typhula* snow mold control revealed that Calogran, Demosan and Calo-clor continue to rank superior in terms of *Typhula* snow mold control. Most of the other materials failed to give satisfactory control under the severe *Typhula* snow mold infestations occurring at this experimental site during the past three years.

In the time of application study several of the better *Typhula* blight fungicides were applied on three dates: September 15, October 15 and November 7. Results from the first year of this study reveal that equally effective control was achieved from the October 15 application in comparison to the November 7 application date, which is most commonly practiced. The authors indicate that the

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Horace G. Duncan is the Club Managers Assn. of America's new executive director. He replaces Edward Lyon, who resigned. Duncan has been a member of the association since 1957 and was most recently general manager of Wilscam Enterprises, Denver. He also maintains a consulting and management service in the hospitality industry, including the private club segment.

Phillips

Roger E. Phillips has been promoted to the new position of private brand manager of the General Battery Corp.

Frank Mazza has been appointed territory manager of Dunlop Tire & Rubber Corp. Sport's Div. He covers Louisiana and Mississippi.

W. Davidson

O'Brien

William H. Davidson, president of the Harley-Davidson Motor Company, Inc., was elected chairman of the board. Succeeding Davidson as president and chief executive officer is **John H. O'Brien**. Elected executive vice president-marketing was **John A. Davidson**.

Beard

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earlier application date would minimize the problem of an unexpected permanent early snow fall occurring prior to the time that the snow mold fungicide application is normally made. In addition the treatment can be made in October when conditions are usually more tolerable. The authors also point out that several more years of data should be obtained to confirm these results before this practice can be recommended with confidence.

Comments: *Typhula* blight (*Typhula* spp.) or "gray snow mold" is a low temperature organism that most commonly causes disease injury to turfgrasses under the cold, humid conditions commonly occurring under or during thaw of the snow cover. Symptoms usually include a light gray mycelium evident on the turfgrass shoots when the disease is active. Also grayish-white circular patches form in sizes up to two feet in diameter. These can coalesce causing total loss of the existing turf. In the case of creeping bentgrasses, such as Penncross, the injury results in death of the existing shoot tissue, but the underlying meristems on stolons survive to initiate new growth as soon as favorable growing conditions occur. However, the temporary loss of stand provides an ideal avenue for the invasion of annual bluegrass. Where annual bluegrass occurs in the turf, an attack of *Typhula* blight will result in severe loss of stand with recovery frequently occurring only by the germination of existing seeds in the soil.

One precaution in reviewing this research which the reader should keep in mind is that there are two basic types of snow mold. One is, of course, *Typhula* blight; the second is referred to as *Fusarium* patch or "pink snow mold." A fungicide which is effective in controlling one of the snow mold organisms may not necessarily be effective in controlling the other organism. This should be kept in mind. It is important for the golf course superintendent to assess which type of snow mold is occurring on the particular turfgrass area for which he is responsible. Perhaps both organisms occur. □

Metrics

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Gallons of spray material will become liters and chemicals will be measured by grams and kilograms, which will introduce greater accuracy. (Hashish always is measured in metrics.) Computers undoubtedly will be more easily programmed with greater accuracy in metrics. Shoppers will find it far easier to compute mentally the cost-per-unit of foodstuffs when metrics become the law of the land.

The coming generation will learn metrics in school. Those who have worked with the English system all their lives can convert practically on a "rough and ready" basis, which considers a meter as a little more than a yard, a kilo (kilogram) as just over two pounds, a kilometer as sixtenths of a mile and a liter as a bit more than a quart. If we take a common sense view of the metric, we won't have too hard a time converting. The exception will be the equipment manufacturers who will have to convert on a precise basis.

It would be wasted effort to attempt to bring out in detail in this article the calculations necessary to convert to metric. This conversion will take place in the classrooms, in association meetings, at conferences and in the field. The serious student of turf will have in his library or will have access to a copy of "Turfgrass Science," which has on page xviii (opposite page 1 of chapter 1) a table entitled "Conversion Factors for English and Metric Units." By calculating some everyday English units into metric, according to the simple instructions, anyone can gain easy familiarity (with a little outside help) with the system so that when the law finally is passed, no one will need to panic and begin a crash study program.

There is nothing mysterious about the metric system. The system is factual and precise—and friendly. It is friendly because it is so orderly. Now that we know that a meter is one ten-millionth of the distance from the north pole to the equator, do we want to stick around with three barleycorns to the inch? It would have been cheaper and simpler to have converted to metrics in 1821 when Secretary Adams proposed it. □