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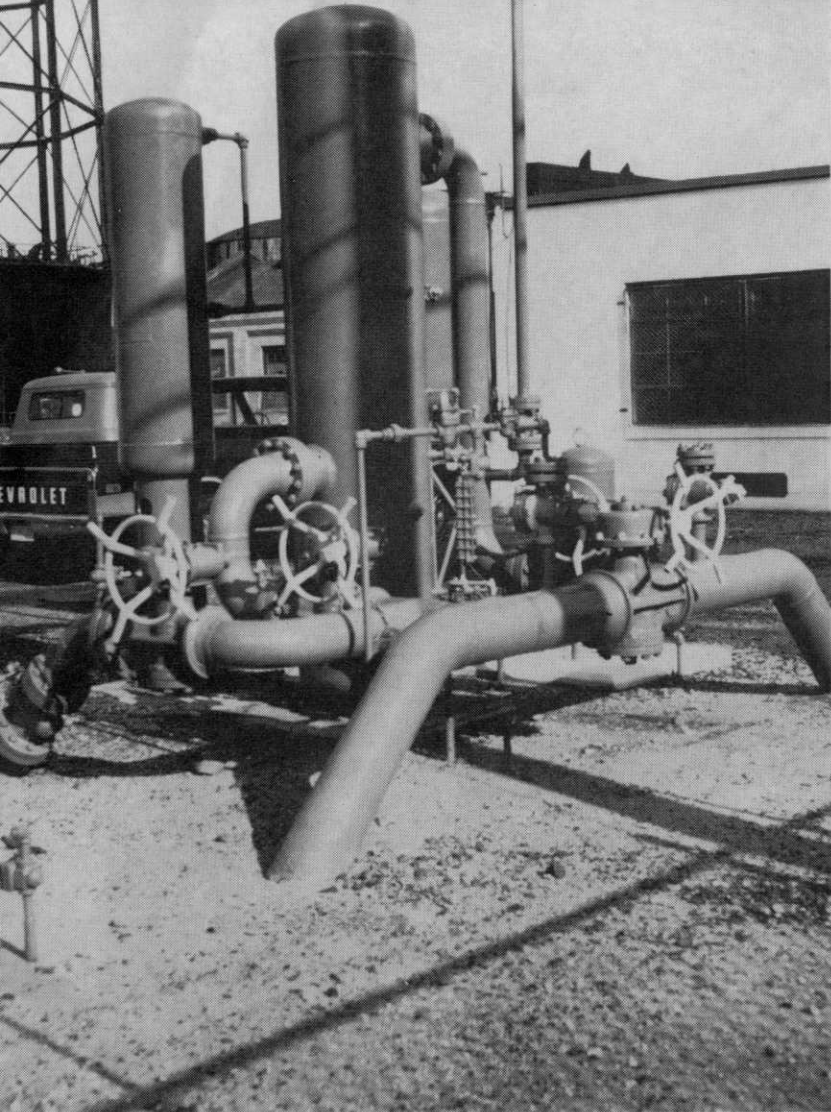
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For more information, write to Industrial Chemicals Dept., Niagara Chemical Division, FMC Corporation, Middleport, New York 14105.

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Herbicide

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SPRAYING (from page 12)

It is important that consideration of potential public relations trouble areas be as much a part of your planning as the areas on your system that present special problems of terrain or weather.

Planning to meet public relations problems will not make them disappear, but it will help you to meet them without panic and in a manner that will cause least disruption to your operations. The planning itself may indicate weak spots in your program that need attention.

Pinpoint Problem Areas: This is the first step. From a public relations standpoint this is easier than you might think. These areas can be located on the basis of:

- a) history
- b) visibility
- c) awareness
- d) factors totally unrelated to spraying

History is a good indicator of sensitive areas. Any field man can list a number of chronic complainers in his area. These are a few people who can be counted upon to be upset about something every year . . . complaints can range from noisy trucks to pole locations or road signs they don't like. It's a sure bet that these people will object to your spray program now that it has become fashionable. An area with a history of problems deserves some special attention in your planning for this season's spray program.

Visibility has a real effect on the degree of sensitivity of an area. If you are conducting a normal spray program deep within your own property or in a location remote from roads or people, the likelihood of problems is not too great. However, if you are causing "brown out" or severe die-back close to a row of suburban homes or through a local arboretum, watch out. You probably will be in for trouble. Even the presence of spray equipment in some areas of high visibility is enough to cause problems without proper planning and preparation.

Awareness is a rather nebulous idea, but it plays a role in the public relations aspects of a spray program. If in a particular area there is a rather high concentration of people active in environmental causes, you can expect a ready interest in your operations. This can pose some problems, but it can also present you with opportunities to tell your story.

If you are already involved in controversy over something else, you probably can count on some

opposition. A public utility in a rate battle, a highway department fighting over highway location, or a timber company contesting property lines is apt to hear protests over spraying. This problem cannot be solved by a public relations program surrounding your spray operation.

Plan Your Spray Program: This is the next step once potential trouble spots are located. It is a good idea to make the best of the situation in each area. This may require some soul searching such as:

- a) changing the way you evaluate particular vegetation control programs.
- b) requiring a careful look at the personnel that deal with the public and that operate the spray equipment out on the job.
- c) upgrading your efforts toward a public information program.

In some situations you may want to change your approach to vegetation control. There may be some spots so sensitive that the best solution might be to hand clear it or, you may want to consider dormant season treatment to avoid excessive (and obvious) summer browning of foliage. Spot spraying on a more frequent schedule may be the best way to approach the problem in an area of high visibility. Maximum attention to drift control is a must. The use of pelleted materials may avoid even the suggestion (real or otherwise) of drift in highly visible locations. Planning a flexible spray program to meet the varied needs of your whole system is a major part of a public relations program.

People are always key factors in your relations with the "outside world." If your people are clean, neat and act as though they know what they are doing it makes a real difference. Clean coveralls for the spray crews, fresh paint and regular wash jobs for the spray rigs will generate profit in goodwill. A professional look creates confidence . . . the idea is as old as the first patent medicine commercial, but it works.

Crew leaders need training that goes beyond the mechanics of the job. They need to know what to say when someone asks what they are doing, what kind of material they are spraying and what it does. (See *Herbicides Keep Jacksonville Drainage Ditches Open*, page 16, WTT, March 1972) Whether they are your employees or work for a contract applicator makes no difference to an interested or concerned citizen. They represent you.



Vegetation maintenance in areas of high visibility can be handled by spot spraying on a more frequent basis. Granular formulations applied in the dormant season may be the answer.

Field men or supervisors that contact home and property owners in areas adjacent to the spray job need to develop a talent for *listening* as well as *talking*. In many cases someone who raises objections just wants some questions answered. A good listener can find out what they really are and answer them. Those contacting the public for permission to spray need good backgrounding in the facts of the spray program, including information about the products to be used, their effects and why the whole job is to be done. They should also be able to give some accurate background on how spray materials are developed and the long series of safety tests that a material must pass before being used in the field.

Public information programs are
(continued on next page)

SPRAYING (from page 23)

often an area that seem perilous to someone not experienced in this field. This is not the case. The basis for a good public information program is honesty and an open attitude. Sometimes you will feel that you have been mistreated in the press, but often close examination will show you didn't really try to tell your side of the story. Most news people are reasonably objective and make an honest effort to get the facts. Unfortunately, we sometimes make those facts hard to find.

Garden clubs, conservation organizations and ecologists in your area are not the enemy. They represent a very real opportunity to get your story out.

Garden club talks are time-consuming and don't sound very important, but they can be a real route to thought leaders in a community. These people really are interested in many of the small facts that you grew tired of years ago. To them the idea that grass survives better when the brush is cleared is new.

Local newspapers can help or hurt you. The "off" season is a great time to drop in and get acquainted with the editors in your area. Make

sure they are invited to any special event you may be planning so that they know you and they know what you are trying to accomplish. This is especially important in an area where you anticipate a problem.



Here's a typical spraying scene. But to an uninformed public, it can set off a controversy that could put you out of a spray contract. Keep the public informed.

If you have real trouble (a spill, bad drift, an injury etc.) and the press descends with a multitude of questions, honesty is the *only* policy. Don't pretend that nothing happened (it's been tried) and don't assume that the reporters are out to get you. Give them the facts, but don't speculate. And if you do not know something, admit it. If questions are asked that deserve answers but the information is not readily available, offer to find the answers and call back. This will help head off the publication of an incomplete (and possibly damaging) story. But be sure you do call back.

Handling the public relations side of a spray program is as important as any other phase of the operation, and in these days of "eco-activism," may be the factor that determines whether the job gets done at all. Help is available and you should use it. Contact the National Agricultural Chemicals Association to help you tell the pesticide story. Companies like The Dow Chemical Company are available to provide help in training your personnel to do a better job. Product information should be readily available from all manufacturers. The tools are at hand; use them.

MOVING?

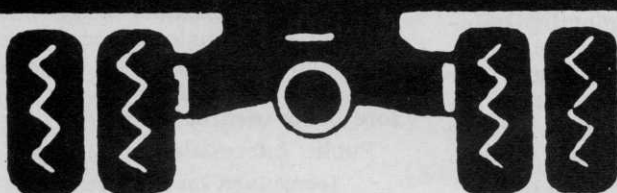
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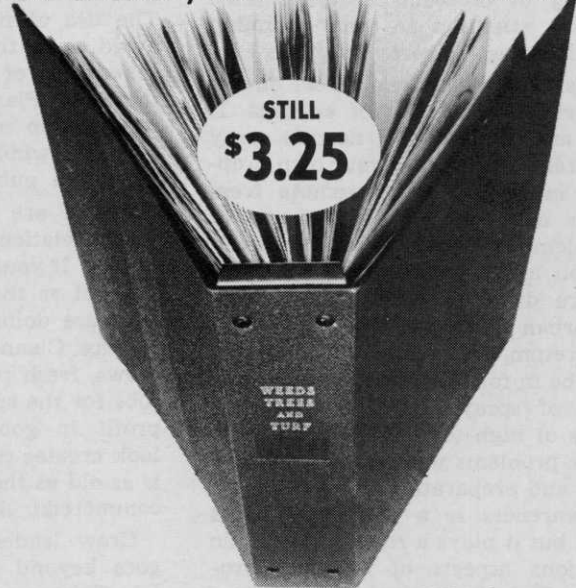
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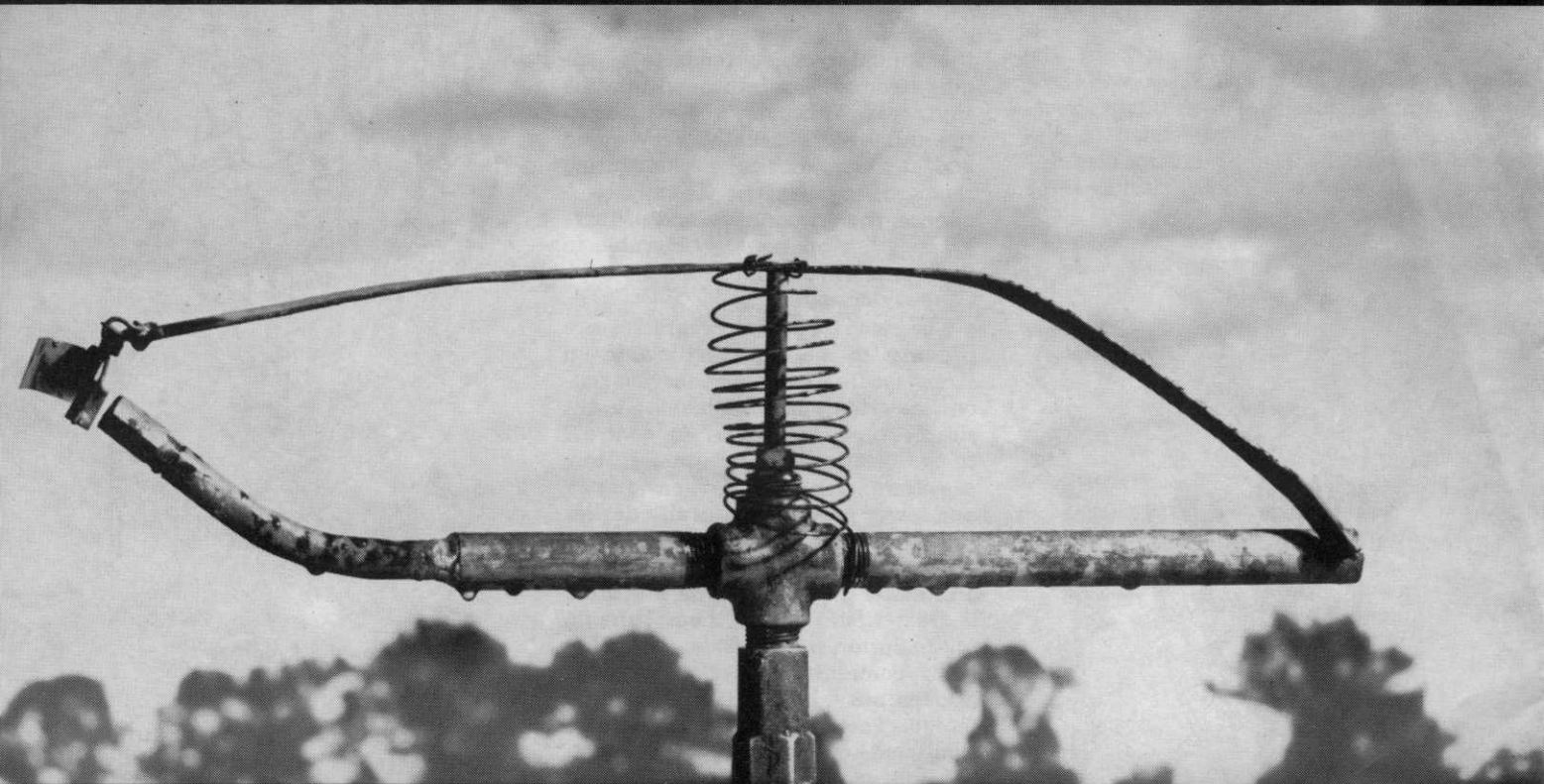
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FLUORESCENCE (from page 14)

result, new interest has been generated in the use of ryegrass for the satisfactory establishment of various types of turfgrass areas. Because of their proven superior performance and desirable characteristics, the new turf-type ryegrasses are receiving very favorable consideration in extension service recommendations for desirable turfgrass seed mixtures in many states. This represents a major departure from the type of recognition the old type (commonly referred to as pasture-type ryegrasses) received in recommendations for desirable seed mixtures for lawns or other turfgrass areas.

Before the development of the improved turf-type ryegrasses, recommendations for high quality turfgrass seed mixtures tended to discourage the use of mixtures containing ryegrass. These pasture-type

ryegrasses include the annual, perennial or a combination of annual and perennial types. Considering the characteristics of the pasture-type ryegrasses, recommendations discouraging their use were justified. Although rapid germination and establishment were definite attributes, their coarse texture, stemminess, rapid and upright growth habit (particularly in the spring), light green color and difficult mowing, imparted undesirable characteristics to an otherwise high quality lawn or turfgrass area. One might argue that these undesirable characteristics are temporary when annual ryegrass rather than the common perennial ryegrass is included in the mixture. Admittedly, the annual ryegrass tends to disappear from the mixture within the first year. However, the exit from the mixture is usually very rapid and at a very critical period during the growing season. As a consequence, the remaining stand of turfgrass is left open and vulnerable to the rapid invasion by weeds, particularly crabgrass.

The new turf-type ryegrasses are proving to be of great value in strengthening extension service recommendations for establishing a desirable turfgrass cover. In contrast to the pasture-type ryegrasses, they are finer textured, leafier, slower and lower growing, naturally darker green in color, more compatible in a mixture with other turfgrasses, and easier to mow. These desirable characteristics make them suitable for inclusion in turfgrass seed mixtures containing superior varieties of Kentucky bluegrass and/or fine fescue. Their attractive appearance combined with rapid establishment, durability and persistence makes them very useful for easier and more successful establishment of various types of lawn areas as well as turfgrass areas for athletics, recreation or other hard use.

A major concern in obtaining the superior performance of these improved turf-type ryegrasses is availability of high quality seed that is genetically identical to the variety developed by the breeder. Unless proper precautions are taken in maintaining high standards in the production, processing, packaging and distribution of seed, the advantages of the new variety may be easily lost due to undesirable contaminants.

Norlea perennial ryegrass can be cited as an example of what can happen. Norlea was developed and introduced as one of the first turf-type ryegrass varieties. Its advan-



Perennial Ryegrass



Annual Ryegrass

tage in comparison to the pasture-type ryegrasses was convincingly proven in variety tests. However, its popularity as an improved variety of ryegrass rapidly declined after seed was made available to the public. Its performance under practical situations was not measuring up to the results of variety tests due to the contamination of the seed with inferior ryegrasses as well as other grasses unsuitable for turf purposes.

What steps can be taken to protect the genetic purity of an improved turfgrass variety and provide the purchaser with the assurance of the seed being of high quality and true to variety? Several techniques are available which in some manner may involve the breeder, seed producer, seed certification official, seed control official, seed analysts, sales outlet, and in-

(continued on page 28)

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For More Details Circle (142) on Reply Card

FLUORESCENCE (from page 26)

dividuals responsible for formulating and making recommendations.

One of the techniques that can be very useful is the fluorescence test. It provides seed analysts a means of detecting inferior ryegrass contaminants in certain improved turf-type varieties. Among the ryegrasses presently available, the fluorescence test can be very useful in detecting contamination in the variety Manhattan which is gaining widespread recognition for its superior performance. Seedlings of annual ryegrass as well as certain perennial ryegrasses give a positive test when subjected to the fluorescence test. Fortunately, Manhattan ryegrass seedlings are different in this respect in that they do not produce a fluorescence when subjected to the test. Therefore, by this test, a means is provided by which contamination of the Manhattan seed with inferior types could be easily detected.

The inclusion of the percentage of fluorescence on the seed label that is required by state and Federal seed laws would prove to be very useful. Seed analysts would be able to readily detect contaminating ryegrasses in varieties that do not produce the fluorescence test. It would provide very useful information to individuals in the extension service responsible for making recommendations of varieties of superior performance. And perhaps most importantly, it would provide the purchaser an assurance of the genetic quality of the seed.

Flourescence And Ryegrass Breeding

By Dr. C. Reed Funk

The plant breeder is charged with the responsibility of developing the best variety attainable, using present genetic techniques and plant breeding techniques. Thus, he is concerned that the merits of the variety are not lost by improper standards of seed in increase and distribution. It is therefore necessary for the plant breeder to work very closely with quality-conscious seed producers, certification specialists and seed control officials to see that quality seed of a new variety is made available to the consuming public.

The maintenance of high standards of seed production are especially important in a cross-pollinated species such as perennial ryegrass.

Ryegrass seed is often produced in fields badly contaminated with annual ryegrass or stemmy, hay-type perennial ryegrass or adjacent to areas shedding pollen of these inferior types. Even a slight mixture of these coarse, tall-growing ryegrasses can cause a serious reduction in the turf performance of an improved, fine-textured, lower-growing, turf-type variety.

The improved, turf-type ryegrasses are basically poor seed producers in comparison with the annual and hay-type, perennial ryegrasses. Thus, natural selection will cause a further rapid deterioration of the turf performance potential of the improved variety as such seed fields continue to remain in production.

To insure quality seed production of improved varieties the plant breeder in cooperation with the seed producers and the certification agency places strict standards on field selection, isolation requirements, stand life and generation interval.

In the case of a synthetic variety such as Manhattan perennial ryegrass, Breeders seed is produced from vegetatively propagated parental clones grown in a clean, isolated crossing field at Rutgers under the direct supervision of the breeder. This Breeders seed is used to establish an isolated "Foundation" increase field in Oregon which is grown under constant supervision of official state inspectors and hand rogued to remove any objectionable plant.

Certified seed must be grown only from Foundation seed in isolated fields. These fields must be essentially free from contamination by other ryegrasses and weeds and maintained according to certification standards.

The fluorescence test has been widely used in seed-testing laboratories for many years to distinguish between annual and perennial ryegrass. The seedling roots of annual ryegrass normally secrete a substance which shows a brilliant fluorescence under ultraviolet light. This characteristic results from a single dominant gene present in most annual ryegrass plants. Because this

dominant gene can also be found in occasional plants of common perennial ryegrass and many of our older varieties, seed analysts and control officials have not been able to use this test as precisely as desired in their efforts to detect annual ryegrass contamination of perennial ryegrass seed (Nyquist 1963).

Breeders of some of the new fine-textured varieties of perennial ryegrass such as Pennfine and Manhattan realized the importance of being able to precisely detect any contamination of seed lots by unsightly annual ryegrass. With the helpful cooperation of seed analysts, these new varieties have been bred to be completely free of the dominant gene causing fluorescent seedlings. Any fluorescent seedling appearing in a seed lot of Pennfine or Manhattan immediately signals contamination. Therefore, plant breeders, quality conscious seed producers, certification agencies and seed control officials have one more tool to use in their joint efforts to provide the buying public with a superior product."

Flourescence In Ryegrass Certification

By E. E. Hardin

After a variety has been developed through selection and/or breeding, production and market development are the next steps a variety must take on its way to the consumer. In order to grow a certified variety of perennial ryegrass in Oregon, the grower must plant Foundation seed stock on land which has not grown nor been seeded to any other perennial, ryegrass during the previous five years, unless the previous crop was of the same variety and passed the certification requirements. The field must also be free of *L. multiflorum*, and there must be adequate isolation to prevent crossing from outside pollen sources. A certified seed field must pass a Seedling inspection within sixty days after the initial planting, and a Seed Crop inspection prior to harvest of each crop.

The certification inspector looks for out of place and off-type seedlings of other ryegrass as well as isolation infractions during the pollination period. After harvest, a lot of seed must meet the mechanical purity requirements as established by the Seed Certification Service.

It is the intent of all concerned
(continued on page 52)

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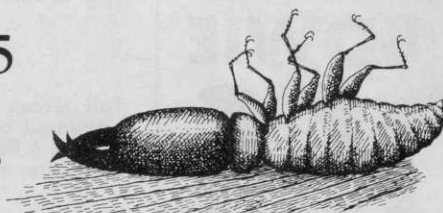
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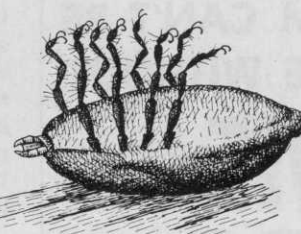
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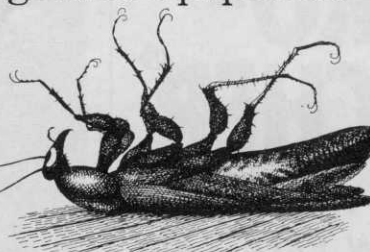
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Tall fescue treated with three experimental growth retardants compared to an untreated control. All grass was clipped to a height of 3 inches before spraying with a 4 lbs./A rate of MON-814, MON-820, or MON-845. Picture was taken 43 days after clipping and spraying.

RETARDATION (from page 18)

owner is away for extended periods.

The discovery and use of growth regulating chemicals began in the years following 1935. One of the first growth-retarding chemicals tested on grasses was maleic hydrazide. MH-30, a maleic hydrazide formulation, first was tested for grass growth control about 1949, at which time it was found to be effective. At that time the public was not ready to accept chemical retardation of grass growth to a large extent. However, in recent years the increase in motor travel and interstate highway systems has greatly changed the roadside vegetation maintenance picture. Improved highways require better maintenance and make the development of better grass-retarding chemicals and their widescale adoption distinct

possibilities. Several companies presently are developing and evaluating a host of grass growth retardants.

Chemical retardation of grass growth can offer these advantages:

- (a) reduce cost of maintaining grasses used for roadbank stabilization by increasing the savings on equipment and reducing the number of man-hours spent on mowing and trimming — much of the danger involved in mowing steep areas could be removed
- (b) reduce formation of undesirable seedheads
- (c) reduce drought injury and increase resistance of grass to adverse environmental conditions because of the dormant-like condition of treated grass
- (d) possibly enhance grass color

(continued on page 32)

Table 2. Height of tall fescue, color ratings, and dry matter yield as influenced by growth retardant treatments.

Treatment	Rate (lb/A)	Grass Height (cm)		Color Rating ¹				Dry Matter Yield g/75 sq. ft.	
		No. Days After Treatment							
		14	28	42	19	42	28		
Untreated control		13.8	15.2	16.5	10	10		433	
MON-820 ²	1	8.2	8.9	13.8	8	9		91	
MON-820	2	7.7	7.2	10.9	7	7		64	
MON-820	3	6.9	7.1	9.6	6	6		46	
MON-820	4	7.0	7.2	9.2	6	5		64	
MON-845	2	8.5	7.8	11.7	7	8.5		52	
MON-845	4	7.2	7.2	9.5	7	7		48	
MON-845	8	6.8	6.5	9.2	5	4.5		45	
Slo-Gro ³	1	9.9	10.0	11.6	8.5	7.5		91	
Slo-Gro	2	9.6	9.7	10.4	8	5		92	
Slo-Gro	3	9.8	9.6	10.0	8	2		94	
Slo-Gro	4	9.8	7.9	9.9	8	1		109	

¹ 0 = dead, 10 = best color

² Experimental compounds from Monsanto Company

³ Maleic hydrazide formulation manufactured by Uniroyal Chemical