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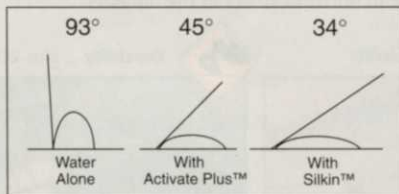
Using Adjuvants In Your Plant Protection Program

Here's how adjuvants can improve the performance and coverage of your plant protection product applications.

Using adjuvants in your turf management program can help you improve plant protection product performance. They can even make the difference between peak and poor performance. The starting point is to find the right adjuvant for the job. The most commonly used adjuvants for turf are: wetting agents; spreader/stickers; spreader/activators; sticking agents, and buffering and compatibility agents.

Wetting Agents

If you've been making thorough herbicide, fungicide and insecticide applications but still aren't getting the control you expect, your plant protection product may not be penetrating plant tissue surfaces. This reduces control and leaves spray residue susceptible to wash-off. The wetting agent Riverside® Silkin™ helps sprays penetrate plant tissue quicker for improved overall performance.



The wetting agent Riverside Silkin and spreader/activator Riverside Activate Plus™ reduce surface tension of spray so that it forms "flatter" droplets, improving coverage and absorption.

Spreader/Stickers

Good control in some areas and poor control in others could mean drift and wash-off are taking their toll on spray performance. During application, spray droplet size varies, reducing adhesion and causing spray to miss the target. To improve coverage and adhesion, use the spreader/sticker Riverside Complex™. It adjusts droplet size for better performance, even under adverse conditions. By reducing surface tension in the spray droplet and keeping the spray mixture suspended, Complex can dramatically improve the efficiency of herbicides, fungicides and insecticides.

Spreader/Activators

Droplet size varies during applications, making retention and distribution more difficult. Spreader/activators work in much the same way wetting agents

do. They deliver more uniform droplet distribution, quicker wetting and increased spray retention on leaf and stem surfaces when used with herbicides, fungicides and insecticides.

The spreader/activator Riverside Activate Plus improves performance and efficiency by moving the spray into plant tissue more quickly. By speeding up penetration, you get increased pest control.

Sticking Agents

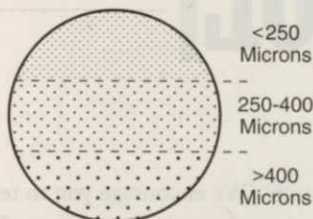
Contact herbicides, and non-systemic fungicides and insecticides can sometimes be washed away by rain, irrigation or even dew. Plant protection product sprays are also affected by drift. The sticking agent Riverside Plex® helps plant protection products penetrate the vegetation canopy and stick to plant tissue. That also helps control drift. Using



Riverside®
Adjuvants
Maximize Your
Pest Control.

Plex will help you make applications that will last longer, even in wet conditions.

Approximate Actual Size



Spray droplets under 250 microns are susceptible to drift and poor coverage. Using Riverside Plex or the spreader/sticker Riverside Complex to control droplet size effectively controls drift and

improves coverage. Both maintain droplet size near 400 microns, ideal for the best application.

Buffering and Compatibility Agents

If you're not getting the control you want but have followed label directions to the letter, it could be a pH problem in your tank mix. The buffering agent Riverside Combine® will help you correct the pH level for maximum performance from your spray mixture. If you're unsure of your pH level, use a pH test kit or, if you don't have one, contact your Terra representative.

Combine® pH use chart.

		Starting pH			
		9	8	7	6
Desired pH	8	2	0	0	0
	7	4	2	0	0
	6	16	12	8	0
	5	20	16	12	8
		Oz/100 gal. water			

A chart like this one makes it easy to adjust pH level for optimum results. For example, if your desired pH is 7 and your starting pH is 9, you would need to mix 4 ounces of Combine per 100 gallons of water to get the proper pH.

In addition to buffering, Combine also works as a compatibility agent. The compatibility agent Combine should be used when: more than one plant protection product is included in a tank mix; when tank mixing different formulations like wettable powders and liquids; or when applying micronutrients or plant protection products with fertilizer. Also, Combine improves spray mix stability and dispersion.

To see if a compatibility agent will help your tank mix, try the jar test. Fill two quart jars each with a pint of water or carrier. Use the same source and temperature as you would in your actual tank mix. Mark one jar "with" and one "without." Add 1/4 teaspoon of Riverside Combine to the jar marked "with" and shake it gently for 5-10 seconds. Add the plant protection product(s) to both jars in the proper volume and sequence according to the label directions. Shake gently before adding each new product. Wait 5-10 minutes. Check both jars. If no gels, sludge, flakes or other irregularities are present, the mix is compatible.

If the jar marked "with" is compatible and the jar marked "without" isn't, a compatibility agent should be added to your tank mix. If the jar marked "with" isn't compatible, the tank mix shouldn't be used.

Wait 30 minutes. If the mixture separates but readily mixes again, the tank mix can be used with proper agitation.

Adjuvants Pay Off

Overall, adjuvants can help you protect the investment you make in plant protection products by making them more effective. Whether you're using wetting agents, spreader/stickers, spreader/activators, sticking agents, buffering and compatibility agents or all five, they can help you overcome some of the common problems faced by turf professionals.

For more technical information on adjuvants, contact your nearest Terra Professional Products representative.



Get maximum plant protection product performance with Riverside® adjuvants. They make spray mixes work harder, perform better and control more.

Adjuvants help you get the most out of your program and protect your plant protection product investment at the same time. Riverside adjuvants make the difference between a good job and a great job. Use them with your spray applications to maximize performance.



Terra International, Inc.
P.O. Box 6000
Sioux City, Iowa 51102
1-800-831-1002

[DRUGS & ALCOHOL]

by JERRY ROCHE / Editor-in-Chief

A company's typical "controlled substance" policy might read:

"The use, possession, sale or transfer of alcohol or illegal drugs on company-owned or company-controlled property or in company-owned or company-leased vehicles, or reporting to work while under the influence of alcohol or any illegal drug, is strictly forbidden.

"When there is reasonable cause to believe that an employee's physical or mental faculties may be impaired during work time as the result of alcohol or unprescribed drug use, the company may require a physical examination, which may include drug testing. Refusal...within a designated time period may result in discipline up to and including discharge."

Every once in a while, an employee nonetheless might show up for work under the influence of alcohol or illegal drugs, or get caught using such substances while on the job. In the 1990s, it's simply a fact of life, and most employers have been through this wringer more than once.

But what's more important is what supervisors and employers are doing with those employees so affected.

There are a variety of solutions to this problem,

depending on how much compassion your department or company is willing to show. Many employers won't tolerate a single drug or alcohol incident and summarily dismiss the employee. Others offer a two- or three-step process that can ultimately end in dismissal. The first steps might include counseling and/or testing for drugs.

This month, we're asking you to tell us how you deal with drugs in the workplace. How often do you have this problem? Does your program(s) work? What are some of the consequences your company or department has suffered from having an alcohol or drug

abuser on staff? (We encourage you to tell us your stories, but please don't mention offenders by name. If you desire anonymity, please tell us and we won't use your name in the magazine.)

We'll print your responses in our April magazine so that others can learn from your experiences. This is not a popular topic, nor is it easy to talk or write about. But your experiences can help the green industry beat the problem. **LM**

Your turn

Tell us your solutions to **DRUG & ALCOHOL** problems. Tear out or photocopy this page and return it to us. Or e-mail us. If we print your response in the April issue's "Talk Back" column, you'll receive a free high-quality Landscape Management baseball cap. Deadline for responses: March 1st. Fax to: (216) 891-2675. Mail to: LM Talk Back, 7500 Old Oak Blvd., Cleveland, OH 44130. E-mail to: 7553.502@compuserve.com.

How many instances of drug/alcohol have your employees had in the **past year?** _____ **five years?** _____

What methods have proven most effective in controlling this problem?

COMMENTS _____

What have been the consequences of having employees "under the influence" on the job?

COMMENTS _____

Please check here if you don't want your name used in the magazine.

Name _____

Company/Organization _____

Address _____

City/State/ZIP _____

Snow dumped on East: late spring?

by JERRY ROCHE/Editor-in-Chief
and TERRY McIVER/Managing Editor

Some suggestions for our Eastern Seaboard friends, who might be looking a month or two ahead with some trepidation.

Landscapers and golf course superintendents in the East Coast corridor hit hardest by snow this winter aren't expecting an early or an easy spring.

"There will be an awful lot of damage to trees and shrubs, I'm afraid," says Bob DeRosa of DeRosa Landscaping, Montvale, N.J. "We're also preparing to do a lot of turf replacement because of mechanical and salt damage. I'm sure there'll be a lot of snow mold damage, too.

"I'm hoping for an early spring, but I'm not planning on it. We have such a large amount of snow that it probably will take a long time to melt and we'll be forced to start the spring late."

Many plants were weakened by a 1995 summer drought, compounding the possible spring damage.

"A lot of shallow-rooted rhododendrons and azaleas took a real beating last summer," notes Skip Powers of Powers Landscaping, Westwood, N.J. "Then, because the snow came so early, none of us got the leaves off the properties, so we'll have that to do when spring comes, too.

"We have two-and-a-half feet of snow on the ground today [Jan. 16]. There'll be a lot of salt damage come spring, and plant availability could also be a problem."

"A lot of evergreens are bent and separated," says Mark Graser of Custom Landscaping Ser-

vices of Little Ferry, N.J.

"Junipers, arborvitae, anything deciduous is taking a beating. We're hard-pressed to find places to put snow; a lot of backhoe work caused tire damage on lawns."

Graser says moving snow from place to place—not just plowing it—became "a new industry," and says record amounts of salt were used in his state.

If clients resist paying for repair to turf caused by tire damage, try to work out a split with them, as Graser says he does, usually without much hassle. "They pay for materials, I pay for labor," he says.

Plants didn't just enter the winter with drought damage, they entered a *record* winter.

Snow stress, salt damage and vehicle traffic may cause some turf health problems come the spring.

Rich Buckley of Rutgers says increased snow mold is a possibility, especially on turf that has shown susceptibility to that disease in the past.

"Try to dry out the area as much as possible" once the spring thaw arrives, says Buckley, and overseed any

bare spots.

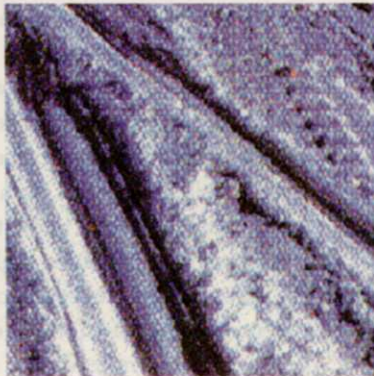
Dr. Joe Rimelspach of Ohio State University suggests the following treatments:

For gray snow molds, use pentachloronitobenzene (PCNB) or iprodione + chlorothalonil. For pink snow molds, use PCNB, iprodione, vinclozolin or thiophanate-methyl. Refer to product labels for accurate rates.

To prevent salt leaching in areas that show salt damage, Buckley suggests rinsing down with as much water as possible.

Low nitrogen-type fertilizers are good substitutes for rock salt as a way to melt snow without damaging turf.

Be on the lookout for canker-causing injuries on tree branches. *Botryosphaeria* and *Cytospora* could form within cracked branches. Prune off all diseased areas.



Research finds new control for summer decline complex

Research conducted in 1995 reveals more good news for landscape managers—especially golf superintendents—who battle summer decline complex, a combination of environmental stress, pythium and rhizoctonia.

As roots and crowns are influenced by summer decline, they die and plants are weakened, leaving them open to further infection. This complex causes large turf areas to become discolored, lose vigor and—if left untreated—to die.

Fungicide treatment with a tank-mix combination of Chipco Aliette WDG and Fore provides excellent control of summer decline complex, according to Dr. Leon Lucas, who conducted the research at North Carolina State University. And even better protection can be achieved by mixing those chemicals with a flowable formulation of Fore. (Mancozeb fungicides other than Fore were not as effective.)

"It is important to note, however, that a compatibility agent such as Blendex must be used with the flowable formulation of Fore [so] that it does not precipitate out of solution."

Fertilizer impact

New research also shows that excessive rates of certain types of fertilizers can play a key role in the onset of diseases. High levels of soluble salt from high-potassium fertilizers cause significant stress and

damage to turf root systems during dry weather.

About 150 to 250 parts per million of soluble salts are sufficient for optimal plant growth. While relatively high levels of soluble salt fertilizers are harmless during wet weather, salt levels of more than 300 parts per million have been associated with increased root rot and bentgrass decline during drier weather, Lucas notes. He recommends applying one-half the recommended rate of fertilizers twice as often to help protect turf from injury and subsequent disease infestation.

The high temperatures, high relative humidity and wet conditions experienced during the summer of 1995 was an example of what summer stress can do in the extreme.

Serious disease problems such as brown patch, pythium blight, summer patch, anthracnose, and take-all patch were reported in high levels throughout the cool-season climate zone.

A report from Ohio State University stresses the importance of correct diagnosis as a key to proper disease management. It is difficult to sort out all the factors resulting in brown grass, says the report, as there are many confusing symptoms. The interaction of disease, weather stress and damage from traffic was extensive. Preventive fungicide treatment can be a key to management.



AAN helps reform immigration laws

A two-pronged grassroots drive to reform immigration legislation has been launched by the American Association of Nurserymen (AAN), according to a press release.

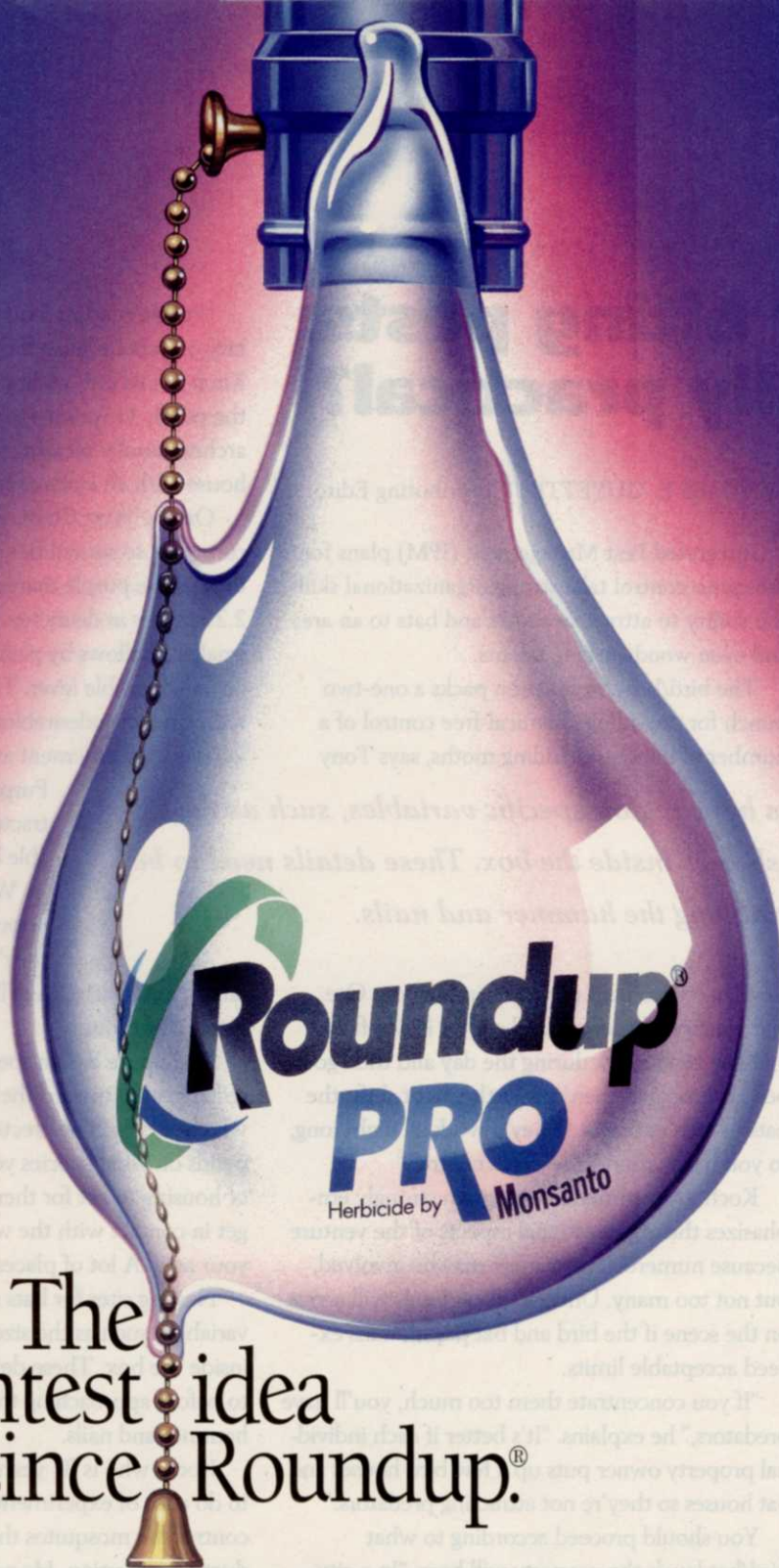
"Congress is debating perhaps the most historic and far-reaching changes ever in our nation's immigration policies," the AAN notes. It expects employee sanctions to be "dramatically increased" as soon as a new immigration bill is passed and enacted by law.

"AAN supports control of our nation's borders and a system of employment eligibility verification that is simple and works," the release notes.

The AAN notes that the current Senate bill (S. 1394) is "outright dangerous and full of anti-employer provisions." The organization suggests that people in the green industry—especially AAN members—write to their U.S. Senators, opposing S. 1394 as written.

As long as you're in the writing mood, AAN recommends that you send letters, too, to your Congressmen "in support of establishing a temporary and seasonal agricultural worker program as a reform of the current, unworkable H-2A agricultural worker program."

For more information, contact Ben Bolusky's office at the AAN: (202) 789-2900.



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For a free information kit that sheds more light on all the benefits of Roundup Pro, call **1-800-332-3111**.



IPM for biting pests: Is it really practical?

by JAMES E. GUYETTE / Contributing Editor

Integrated Pest Management (IPM) plans for mosquito control take strong organizational skills, the ability to attract swallows and bats to an area and even woodworking talents.

The bird/bat combination packs a one-two punch for providing chemical-free control of a number of insects, including moths, says Tony

Nesting sites for bats have region-specific variables, such as the size and number of shelves inside the box. These details need to be attended to before grabbing the hammer and nails.

Koch, a retired fruit producer in Stayton, Ore. and a nationally-recognized expert in the field.

"The birds work during the day and then go to bed at dusk, and then comes the night shift: the bats," Koch explains. "They'll work all night long, so you have around-the-clock control."

Koch's recommended program strongly emphasizes the organizational aspects of the venture because numerous customers may be involved, but not too many. Undesirable animals will arrive on the scene if the bird and bat populations exceed acceptable limits.

"If you concentrate them too much, you'll have predators," he explains. "It's better if each individual property owner puts up a few bird houses and bat houses so they're not attracting predators."

You should proceed according to what bird/bat levels the property will bear. "In a city park, you can have a lot more than on an individual property," Koch notes. Municipal contracts are another option.

In Briarwood Beach, Ohio, Mayor Terry Bidle is petitioning the state government for a \$5,000 grant to fund houses for bats and purple martins, a type of swallow. The control program is geared for the entire lakeside village, which has a population of 700 mostly summer residents.

"Purple martins lend themselves to a community project because they live close together," Koch points out, adding that the birds are fun for the public to watch and the houses can be built in architecturally pleasing styles. "They can put up a house with all kinds of holes."

On the West Coast, purple martins are less common, so sometimes smaller swallows will try to steal the purple martin holes, which need to be 2.25 inches in diameter. Koch is able to exclude smaller swallows by painting a picture of cat teeth on an adjustable lever. The system is activated to scare off the undesirables, making the hole a wholesome settlement as purple martins arrive.

Purple martins can also be attracted by airing tapes of suitable bird sounds.

When established, the population will remain. "Once they've successfully raised a

family in the area, they'll be back every year," Koch points out.

Bird house design specifications must be directly geared toward the region of the country in which they will be erected, Koch stresses. "It depends on what species you have as to what type of housing to get for them," he says. "You have to get in contact with the wildlife department in your area. A lot of places have different species."

Nesting sites for bats also have region-specific variables, such as the size and number of shelves inside the box. These details need to be attended to before approaching the jigsaw and grabbing the hammer and nails.

Koch, who is 81 years old, reports that he had to do a lot of experimenting when he first tried to control the mosquitos that plagued his fruit production operation. He now has 800 bird and bat houses on his 200-acre spread, yet he remains modest. "I'm just a farmer who got tired of spraying. We don't use any chemicals," he notes.

Sawllows and bats will control a multitude of insects in addition to mosquitos and moths.

—For more information, Koch can be reached at (503) 769-5597. Also, Barbara French at Bat Conservation International can be telephoned at (512) 327-9721.

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Choose the 52 or 61 horsepower Yanmar diesel and tackle the toughest jobs. The deck system has a 62" full floating front deck that raises vertically for ease of service, and two 41" side decks supported by four caster wheels for full floatation. The side decks are swept forward for maximum trimability.

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The 1280 has reduced noise levels by locating the muffler and air intake in the enclosed engine compartment.

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Editors' Choice: Products for 1996

by JERRY ROCHE / Editor-in-Chief

Don't look now, but the 1996 golf and landscape maintenance season is just around the corner.

While you're still considering how much and what you'll be buying before the first bud breaks, we offer you an assortment of interesting products that have crossed our desks in the last four or five months.

These items—presented in no special order—were chosen by the LANDSCAPE MANAGEMENT editorial staff for their uniqueness, their potential impact on the market, and their divergence from the normal types of products you see featured every month on these pages.

Certainly, many of the products deal with having a safer operation in one way or another, including our initial offering:

RGF

With RGF Environmental Systems' products, you can rest assured that you won't be polluting. The company manufactures three separate systems designed with the professional golf, lawn or landscape organization in mind.

The Ultrasorb GC and GC+ collect, treat and recycle wash water with zero toxic discharge. The Ultra Shed System includes custom-built, pre-fabricated storage buildings for wash water recycling systems. The easily-installed O₃ Algae Control System uses an oxidizer that naturally destroys algae blooms and odors in ponds.

RGF also provides technical support for solving waste water problems: storm water runoff programs, waste and wash water collection systems, oil-water separators, and custom-designed water treatment and recycling systems.

Circle No. 286

Safety Storage

It's no secret that safety is "job one" in the minds of LM editors—as it should be for LM readers. Here's a hazardous materials storage locker that will keep your immediate work environment safe from polluting the general environment.

The 30N is designed to single- or dou-

