

Repairing Lawn Sprinkler Systems. There are many more people interested than there are people who have paid membership dues, and I think the reason for that is because you have to become a member of the IA first.

How did you establish your customer base when you first started in this business?

I did all my marketing in a residential area. Most of my 1,000 customers are located in eight adjacent map pages in the phone book — they're places I can get to from my home office in six to eight minutes. In my first two years, I did a lot of door-to-door advertising, but I haven't done any marketing in five years. The only commercial accounts I have are nursing homes, which are considered residential, and churches. Some of my customers are doctors or dentists, and I'll take care of their homes and office buildings.

What is the most common problem you come across involving irrigation systems?

Wiring problems. The toughest problems are related to poor underground splices in the wiring or poor quality, old wiring used in the original installation. In Texas, many installers use thermostat wire, which isn't rated for direct burial. Over time, it deteriorates and loses its continuity. Sometimes I'll come across a wire that was taped together after having been cut by someone who planted a tree. Eventually, that wire will lose its continuity, too.

You have to be a detective of sorts to be a good irrigation repair technician, don't you?

Yes, because we walk onto properties we've never seen before and are asked to troubleshoot systems with no print to work with. At most, all we have is a little information from the customer. You have to learn how to filter information from the customer, because they will always try to tell you what they think is wrong. You have to decide how much of what they're telling you is fact, and how much is coming from their own personal opinion. You can't go off in one direction just because someone said so. You have to use systemic procedures.

You can be trained to learn how to do that, but a lot of it comes from experience and making mistakes.

Wouldn't it be more profitable to become an irrigation installer?

Yes, but it's so competitive and so price driven that I really don't foresee myself ever getting into it. Installers and repair technicians need to do a better job of educating consumers on the long-term cost of maintenance. A system that is easily maintained will cost more, but I can't tell you how many times I've had somebody spend as much to repair a system as they did to have it installed. If it had been done right in the first place, I wouldn't have had to repair it.

Do you think it's easier to install an irrigation system or repair it?

Well, it takes a heck of a lot more labor to install one than repair one. But you can have less technical knowledge of irrigation systems and still have a successful installation business. I know for a fact that there are installers in Texas who have no idea how a control valve works, but they know how to put the common wire on one side of the solenoid and the hot wire on the other. That's all they need to know because they don't service these systems.

What is one of the most common gripes you hear among repair technicians?

The crowding of the piping around control valves. We often find that the installer, in order to dig the smallest valve pit as possible, crowded the piping around the control valve. I've even found piping on top of the control valve, which means you have to cut the piping out of the way to do any service. That's like putting an engine in a car and welding the hood shut.

Vitals

Years in business: 8
2000 gross revenue: \$90,000
Projected growth for 2001: Not available
Number of employees: 1 full-time
Business mix: 99% residential
Market area: Arlington / Ft. Worth, TX

continued on page 42

Green Space

continued from page 41

What is the one part you fix the most?

Solenoid control valves. I'm a big advocate of rebuilding control valves in the ground rather than cutting them out and replacing them. However, it's often difficult to rebuild because of the way the installer packed it in. Still, a rebuild might take you an hour and a half, whereas replacing the valve could take 4 ½ to 5 hours. If you're charging an hourly rate, you're talking five to six times the cost.

What advice would you give to installers to minimize future problems with systems?

Use good wire, and use wire splice materials that are fit for direct burial. Also, leave enough pipe between fittings when you install valves so if a valve needs to be cut out and replaced, it can be done easily.

Why don't they do these things in the first place?

They don't really think about it because they don't intend on coming back. They're thinking, "If I have to put a piece of pipe here, I'm going to have to excavate more, which means the job will take longer. I have a price on this job, and I don't have time to dig a bigger hole." They had to underbid somebody to get the job instead of selling a better quality job. They think the only way to make money is to do it cheaper and faster than the next guy. Because they don't have a service department, they don't realize that if they keep this customer and do a good job, they'll be the one coming back to service it and make money off this customer for years to come.

What do you dislike the most about your job?

When I first started, I had to do a lot of explaining to customers about the proce-

dures I undertook. I felt that it was important that I did that, but it wore me out. Now, I have literature that explains to customers what is the most common problem with systems, why we can't give them a set price up front, etc. Good communication skills are a must, because a customer is going to ask what you're doing. An invoice that says, "Fixed sprinkler system: \$533," just won't cut it.

What do you like the most about your job?

I like working outdoors. I also like being a problem solver. I like being a hero, too. In Texas, when it can get up to 108 degrees in the summer, you're the main man when someone has a broken irrigation system and an elaborate landscape that won't survive without water.

What kinds of rewards do heroes like you get?

People are so thankful, they give you pats on the back and iced tea. One time, someone brought me a big shade umbrella from their pool that I could work under. The things that mean the most to me, however, are letters and notes from customers. Over the years, I've developed many personal relationships with customers. Some of them leave just their first name on the answering machine — they don't even leave their address or phone number. They'll just tell me that the garage door opener will be in the barbecue pit, and leave the bill on the controller.

Have you ever considered going into landscaping?

Yes, especially since I'm so environmentally conscious and am a big proponent of water conservation. Personally, I would gravitate toward the organic approach of

landscape management. I would never use chemical pesticides or fertilizers. What really worries me is the runoff of these chemicals that gets into our ground water. Sure, they filter it, but there would still be parts per million of no telling what all in our water. And all these diseases that have come out that they can't explain. Who's to say they're not caused by what's in our water?

It sounds like water is a pretty big deal with you.

Well, something about water is magical to me, whether it's coming out of the sky or in a swimming pool or whatever. To me, there's nothing like the smell of fresh water hitting parched earth — it makes me high.

What do you see for water in the future as it gets scarcer and scarcer?

People need to start stressing water conservation now, not just how to put irrigation in cheaper than the next guy. Irrigation installers need to learn how to sell the conservation and long-term maintenance aspect of an irrigation system. They can't just concern themselves with new construction. They need to start thinking about retrofitting existing systems to save water and working with trade associations to implement incentives for people to install efficient, conservative systems with, for example, rain sensors. Otherwise, landscape irrigation is going to be curtailed to the point where none of us can make a living. If we don't conserve water, we're going to be the first people who get cut off from it. If we can't irrigate the landscapes that landscape contractors put in, they're going to be out of business, too. **LM**

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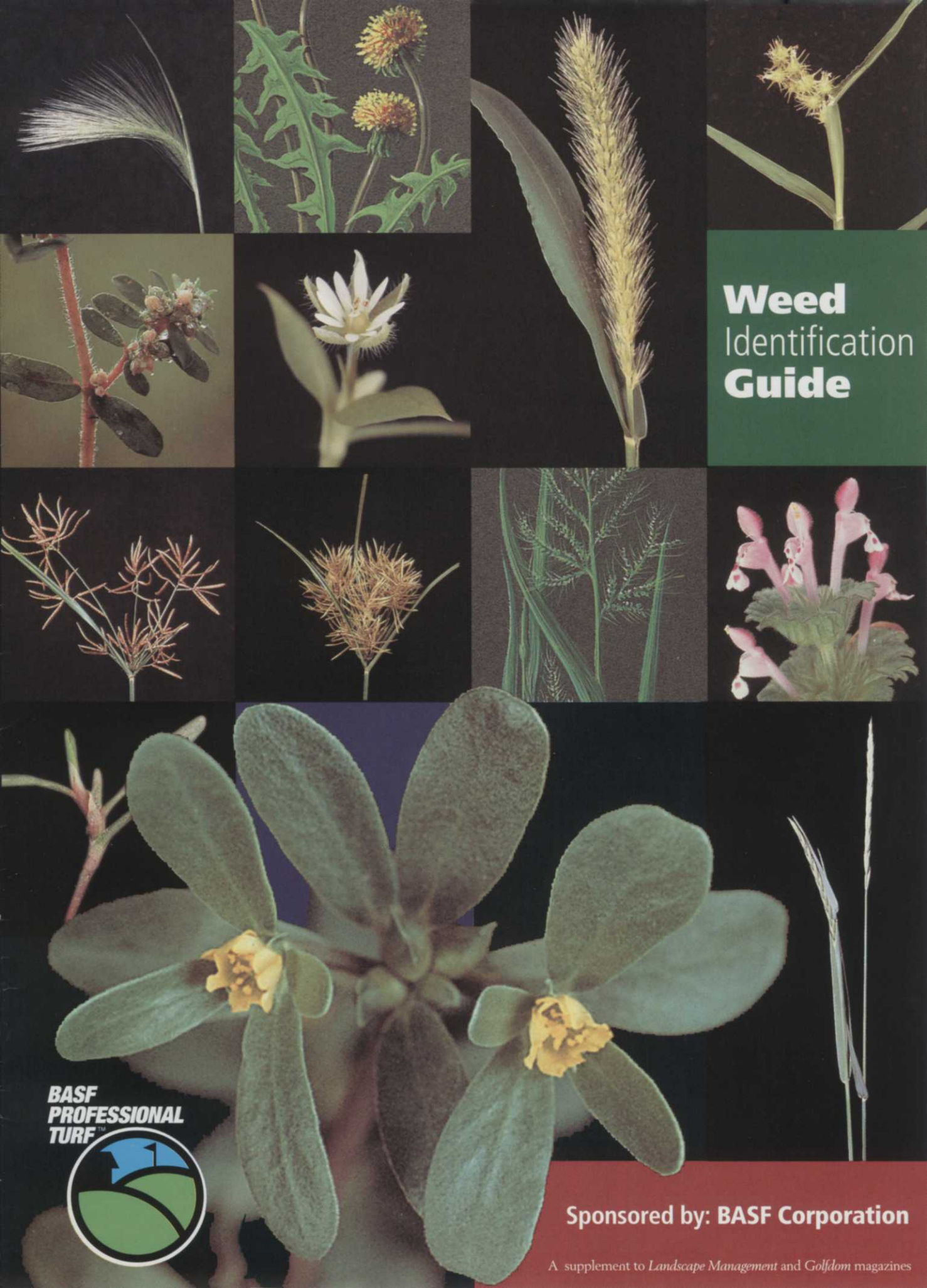
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Weed Identification Guide

**BASF
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Sponsored by: BASF Corporation

A supplement to *Landscape Management* and *Golfdom* magazines



TERMINATION

A photograph of a lush green golf course with large trees in the background. Two red callout boxes with dotted lines and arrows point to specific areas on the course. The first box, labeled "Goosegrass nesting area", points to a cluster of trees. The second box, labeled "Potential crabgrass zone", points to a curved area on the grass.

Goosegrass nesting area

Potential crabgrass zone

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WEED IDENTIFICATION GUIDE

INTRODUCTION

Successful weed identification is a combination of timing and user-friendly data. Timing in relation to the maturity of the plant (the older, the easier) and user-friendly data, meaning an identification guide that is designed to facilitate the identification process. Both were considered in the design of this guide.

Timing: When identifying either monocot (grassy) weeds or dicot (broadleaf) weeds, studying a mature or flowering sample is very important. All of the most easily identifiable traits—flowers, seeds, leaves and roots—are present then, so take some time to find a mature specimen to examine.

User-friendly data: For ease of use, this guide concentrates on those plant characteristics that differentiate one species from another rather than those traits each has in common. These differences are represented visually with added text to refine the distinctions between similar plants.

Understanding the terms used in this guide

Understanding the parts of a grass plant are essential to accurately identify monocot weeds. In the example shown, pay particular attention to the seedhead, the ligule and the collar. They are the plant parts which have the most differentiating traits.

Abbreviations

aka = "also known as" (different common names are popular in different parts of the U.S.)

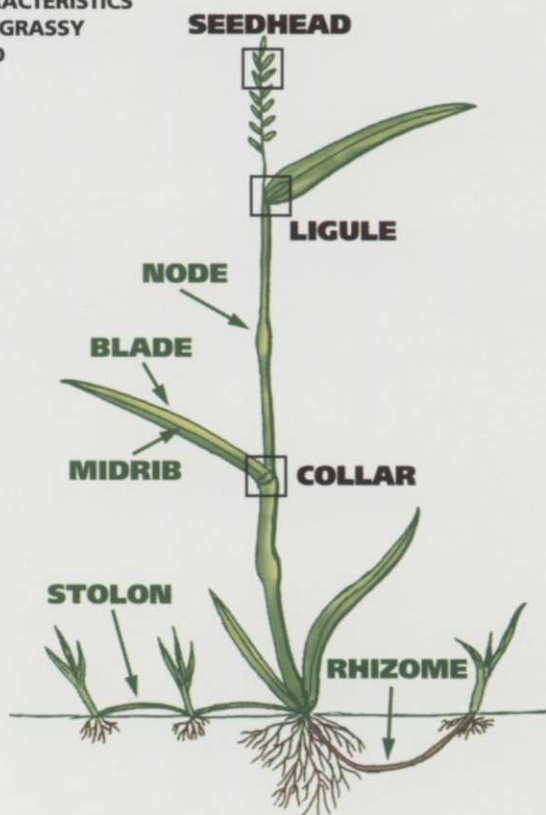
Further help

The use of this guide was designed to help managers substantially reduce the number of possible weed species identifications. However, variations in a plant's vegetative characteristics or distribution may require that managers forward samples to their local extension service for confirmation. BASF's local technical representatives can also be contacted for further help at 800/545-9525 or on the Web at www.turffacts.com.

Sources

Information was compiled from the Scotts "Guide to the Identification of Grasses," the Southern Weed Science Society's "Weed Identification Guide," A.S. Hitchcock's "Manual of the Grasses of the United States" and the extension department at Cornell University.

STRUCTURAL CHARACTERISTICS OF A GRASSY WEED



Leaf in bud:



folded

rolled

Collar:



broad

medium

narrow

Ligule:



tall

medium

short

absent

hairy

Monocot weeds

Because of natural variations within grasses and differences that occur under varying environments, the illustrations included herein are meant to be representative but not definitive. Users need to consider all of the information—seed-head, in-bud, ligule, collar, descriptive text, tips and distribution—to accurately identify a weed.

As you proceed, keep in mind that you should not rely on an individual characteristic to be conclusive, rather total the number of similar characteristics between the sample and the guide to help narrow the number of possibilities.

The monocot weed species illustrated herein were selected for their likelihood of appearing in turf and their latest reported distribution.

Identifying a monocot weed

Once a mature sample has been selected, check each of the listed plant parts as follows:

- seedhead—size, shape, openness and number, size and shape of branches and seeds
- in-bud—cut through a leaf stem and determine if it is folded or rolled
- ligule—remove a leaf from its stem and with a hand lens check the size, shape and texture
- collar—lay the leaf flat, underside up and check the size, shape and top and bottom edges
- tips—check for additional vegetative plant characteristics
- distribution—confirm that this weed species has been identified in your state

ANNUAL BLUEGRASS

aka *Poa annua*, *poa*

DIAGNOSTIC TIPS:

Very persistent self-seeding winter annual or biennial

Short, narrow leaf blades with parallel edges and boat-shaped tip

Some leaf blades wavy

Germinates in late summer/early fall

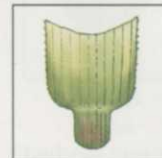
Shallow-rooted, dying under heat or moisture stress



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
narrow
top pinched



Ligule:
medium
pointed

DISTRIBUTION:



■ *Indigenous states*

MONOCOTS *Annual*

GOOSEGRASS aka silver crabgrass

A narrow-leaved
dense prostrate
summer annual

Leaf color is
darker green
than most annu-
al monocots

Collar area has
sparse long hairs

Seedhead has 2-13
branches which are white
to silver in color



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
broad
continuous



Ligule:
short
toothed & divided

DISTRIBUTION:



Indigenous states

BARNYARDGRASS aka billion dollargrass, watergrass

A very wide-bladed semi-
prostrate
summer annual

Stems may be branched
at nodes and frequently
bent upright

Seedhead has multiple
short perpendicular
branches

Seeds are coarse with short
burrs



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar width:
broad



Ligule height:
absent

DISTRIBUTION:



Indigenous states

MONOCOTS *Annual*

CHEATGRASS

aka *chess*, *rye bromegrass*

A narrow-leafed, mostly erect winter annual

Underside of leaf is often hairy

Seedhead is open with multiple semi-erect branches carrying 1-4 seed clusters

Seeds look like cultivated wheat or rye



GREEN FOXTAIL

aka *green bristlegrass*

A wide-leafed mounded summer annual

Leaf blades are limp, bright green and sharply pointed

Stems bent upright at nodes

Seedhead cylindrical with tufted pale green seeds



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
short
toothed

DISTRIBUTION:



Indigenous states

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
continuous



Ligule:
hairy

DISTRIBUTION:



Indigenous states

LARGE CRABGRASS aka *hairy fingergrass*

A wide-bladed prostrate summer annual

Leaves are hairy on both surfaces with a prominent midrib

Older nodes are often branched and rooted where contacting soil

Seedhead open with 4-6 slender branches



RESCUEGRASS aka *prairiegrass, rescue brome*

A wide-leaved winter annual or biennial

Leaves are hairy at edges and on upper surface

Seedhead is open with bending slender side branches

Seed clusters look like cultivated wheat or rye



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
top pinched



Ligule:
tall
toothed & pointed

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
tall
toothed & pointed

DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

MONOCOTS *Annual*

SMOOTH CRABGRASS aka *fingergrass*

A narrow-leaved prostrate summer annual

Leaves are not hairy except sparsely haired in collar area

Stems branch at nodes, but do not root

Seedhead has 2-6 slender upright branches



STINKGRASS

A narrow-leaved annual

Leaves are dull on upper surface and glossy on underside

Collar area has sparse long hairs

Plant has a very disagreeable odor when cut or damaged



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched

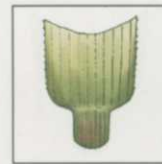


Ligule:
tall
rounded

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
narrow
continuous



Ligule:
hairy

DISTRIBUTION:



■ *Indigenous states*

DISTRIBUTION:



■ *Indigenous states*

WITCHGRASS

An erect wide-bladed summer annual

Leaves are densely haired on both surfaces

Emerging seedhead is fountainlike

Mature seedhead is large and very open with slender branches carrying single seeds



YELLOW FOXTAIL

An erect wide-bladed summer annual

Upper leaf surface has long hairs in collar area

Leaves are often slightly twisted in an open spiral



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
continuous



Ligule:
hairy

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
top pinched



Ligule:
hairy

DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

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IMPEDE



Possible oxalis outbreak

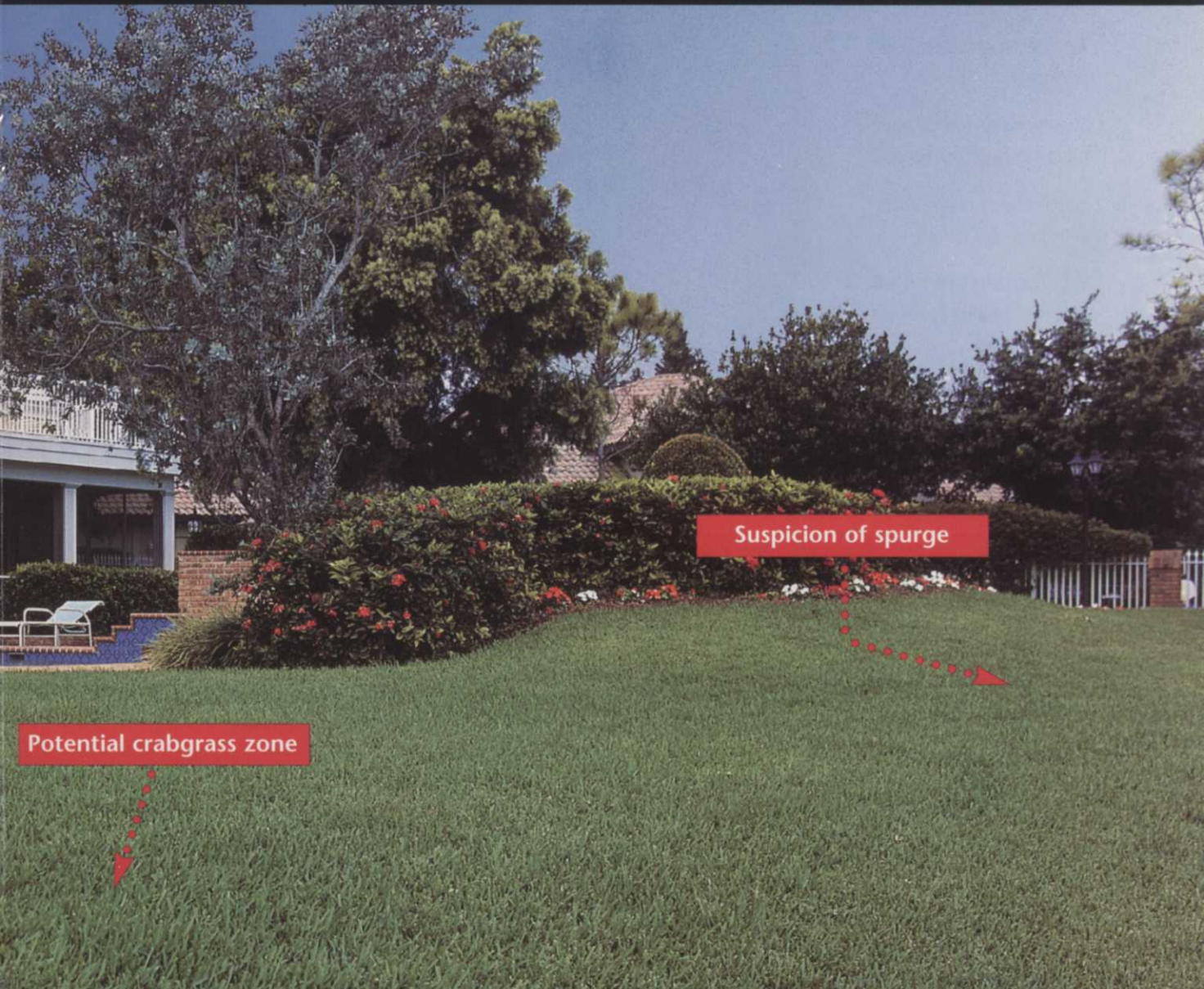
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THE SEED.



Potential crabgrass zone

Suspicion of spurge



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MONOCOTS *Annual*

DOWNY BROME

aka *drooping brome*grass

An erect narrow-bladed winter annual

Leaves have dense soft hairs on both surfaces

Seedhead is open with drooping branches

Seed clusters are tufted and look like cultivated wheat or rye



FALL PANICUM

aka *smooth witchgrass*

A very wide-bladed mostly prostrate summer annual

Leaves may be hairy on upper surface, are glossy beneath and sharply pointed

Stems branched at nodes and bent upright

Seedhead is open with multiple very slender branches



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
bottom pinched



Ligule:
medium
toothed & pointed

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
continuous



Ligule height:
hairy

DISTRIBUTION:



■ *Indigenous states*

DISTRIBUTION:



■ *Indigenous states*

WILD OAT aka *wild oats*

An erect wide-bladed annual

Plant often turns brown in summer as seed matures

Collar area has sparse short hairs

Stems are stiff

Seedhead is open with multiple branches carrying many single drooping seeds



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
bottom pinched



Ligule:
tall
toothed

DISTRIBUTION:



■ *Indigenous states*

SOUTHERN CRABGRASS aka *summergrass*

A wide-bladed prostrate summer annual

Leaves may be hairy on upper surface

Stems will root at nodes

Collar area has sparse long hairs

Seedhead has 2-9 slender branches



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled

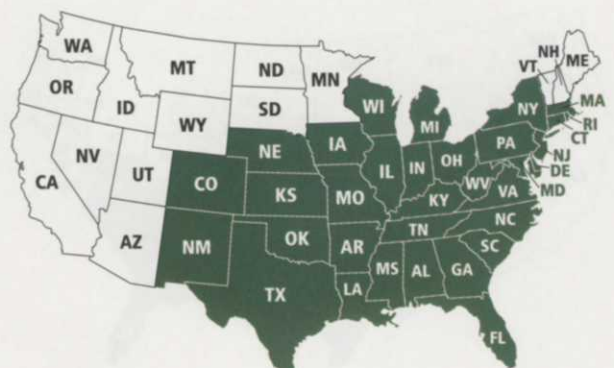


Collar:
broad



Ligule:
medium
toothed & pointed

DISTRIBUTION:



■ *Indigenous states*

MONOCOTS *Perennial*

DALLISGRASS aka *paspalum*

A warm-season coarse semi-erect spreading perennial

Collar area has hairs on upper leaf surface and at leaf edges

Seedhead has 3-7 right-angled slender branches

Roots may have short rhizomes



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad



Ligule:
tall

DISTRIBUTION:



Indigenous states

BROOMSEGE

A very narrow-leaved erect perennial

Collar area has hairs on upper leaf surface and on leaf edges

Seedhead is upright with white feather-like tufts



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
narrow
continuous



Ligule:
short
with hairs

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

QUACKGRASS

An erect narrow-leaved aggressive perennial

Leaf is rough on upper surface

Collar area has claw-like fleshy appendages (auricles) that clasp stem

Plant develops multiple rhizomes from base of plant

Seedhead is a single slender spike



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
continuous



Ligule:
short

DISTRIBUTION:



■ *Indigenous states*

JOHNSONGRASS

A very wide-bladed aggressively spreading prostrate perennial

Collar area has short hairs on upper surface near ligule

Spreads by multiple ¼-inch-thick rhizomes



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled

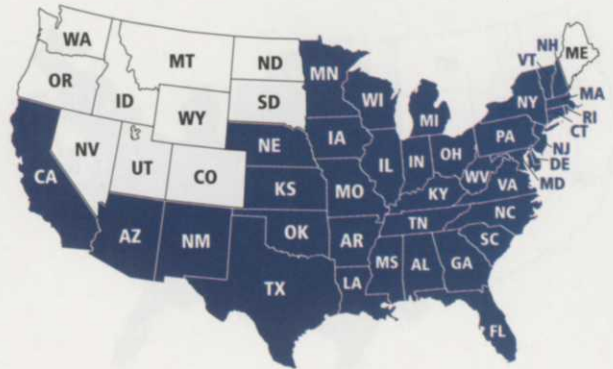


Collar:
broad
bottom pinched



Ligule:
tall
with hairs

DISTRIBUTION:



■ *Indigenous states*

MONOCOTS *Perennial*

NIMBLEWILL

A very short-leaved stemmy spreading perennial herb

Leaves are short

Spreads by very slender stolons

On frequently mowed sites, plant often looks stemmy in fall

Turns off-white during winter

Collar area has long hairs at leaf edge

Seedhead has single, very slender spike



KNOTGRASS

A prostrate spreading perennial

Collar area has short hairs at leaf edges and near ligule

Seedhead has two slender upright branches



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
medium
top pinched



Ligule:
short

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
tall
rounded

DISTRIBUTION:



■ *Indigenous states*

DISTRIBUTION:



■ *Indigenous states*

MONOCOTS *Perennial*

YELLOW NUTSEDGE aka *yellow nutgrass*

A very rapidly growing erect perennial herb

Spreads by rhizomes with underground tubers

Leaves are v-shaped with a prominent midrib tapering to a sharp point

Stems are triangular

Seedhead is semi-open, carrying yellow seeds



PURPLE NUTSEDGE aka *purple nutgrass*

Rapidly growing erect perennial herb

Spreads by rhizomes with underground tubers

Stems are triangular

Leaves are v-shaped, tapering to a sharp point

Seedhead is open, carrying dark or purple seeds



DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

KIKUYUGRASS

A low growing perennial that creeps with both stolons and rhizomes.

Flat leaf blades on light green leaves

Seedhead has 2 to 4 spikelets in upper sheath

Seeds are dark brown with large scars at the rounded base



TORPEDOGRASS

Aquatic grass with small leaves 1/16- to 1/4-in. wide

Leaves have hairs on top and often roll inward

Stems are stiff; often 1- to 3-ft. tall

Grows from underground rhizomes with hard, pointed tips



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
medium
w/ fine hairs

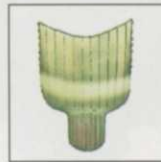


Ligule:
hairy

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
(a pale band)



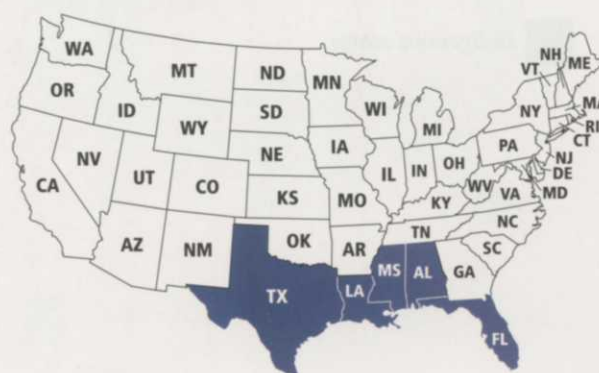
Ligule:
hairy

DISTRIBUTION:



■ *Indigenous states*

DISTRIBUTION:



■ *Indigenous states*

DICOT WEEDS

In a universe of hundreds of dicot weeds, a limited number can tolerate repeated mowing of managed turf sites. In order to provide a broader representation of turf weeds, we have included a select number of these dicot weeds. Those presented herein were chosen for their ability to survive in turf, often as a continuing pest. Several of the species can persist even at fairly short mowing heights; others are active in cool weather.

Identifying a dicot weed

Unlike the prototypical size and shape of monocot weeds, the shape and vegetative growth habits of many dicot weed groups are visually unique. Also, the distinctive traits of monocots—seedheads, ligules and collars—are not always present, making visual identification more important.

We suggest the following process for identifying dicot weeds:

- Look for a sample flower if available
- Leaves: check for identifying characteristics (size, shape, notches, venation or coloration)
- Stems: check how the leaves are held (opposite or alternate), shape and color
- Flowers: check color, size and composition (single, double or compound)
- Location: take note of the conditions in which the weed is growing (shade, compacted soil, etc.)
- Distribution: confirm that this weed species has been identified in your state

DANDELION

aka *common dandelion*

A large rosette-type perennial herb

Leaves growing from plant base are long, narrow and deeply notched

Points of leaf lobes point backward toward base of plant

Has large, slightly mounded yellow flowers on hollow stems

Mature seedhead is a round puffball with seeds that are easily dislodged



HENBIT

aka *dead-nettle*

A mostly erect winter annual or biennial

Leaves are similar to mint: rounded, toothed, heavily veined with soft hairs on top, held opposite on square stems

Single flowers are trumpet-shaped, pale purple and project from ends of stems

Seen primarily in spring, dying with heat



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DICOTS

KNOTWEED

aka *prostrate knotweed*

- A persistent low-growing summer annual

- Prefers compacted soil of pathways and along drives

- Leaves are blue-green, up to 1 inch long and ¼-inch wide

- Small single white to pink flowers are found at the junction of the leaves and the stem



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PURSLANE

aka *common purslane*

A prostrate, succulent summer annual

Leaves are shiny green, wedge-shaped, thick and up to 1 inch long

Stems are thick, fleshy and purple to brown in color

Plants are very drought-resistant

Small, single yellow flowers may appear in the leaf clusters at end of stems



DISTRIBUTION:



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COMMON CHICKWEED aka starwort, winterweed

A low-growing winter annual

Plant prefers shaded moist sites

Opposite small leaves are carried on tender stems

Stems may root at leaf nodes

Small compound flower composed of 5 pairs of two pale purple petals

Plants die back with summer heat, but can survive year round at cool sites



SPOTTED SPURGE

A prostrate fleshy summer annual herb

Leaves are opposite, oblong, and up to ¾-inch long

Upper leaf surface has a purple to brown blotch along center vein

Hairy stems produce a milky-white sap when broken



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Indigenous states

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ACKNOWLEDGMENTS

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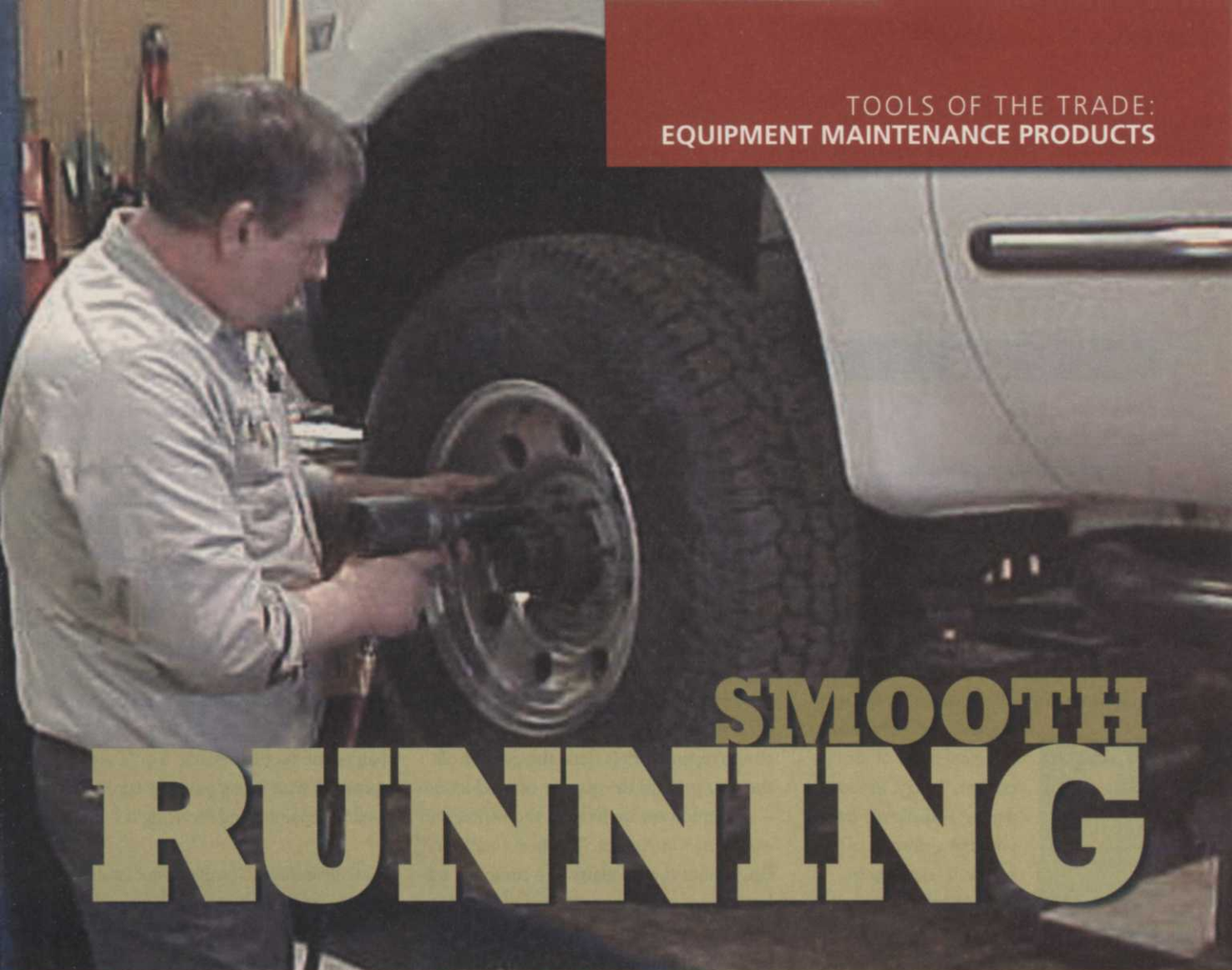
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SMOOTH RUNNING

BY VICKY POULSEN

▲ PHOTO COURTESY GROUNDMASTERS, INC.

Three seasoned landscape contractors talk about how they use equipment maintenance products to keep their operations running smoothly

Landscape operations wouldn't be complete without today's selection of maintenance products required to keep their equipment running.

Popular shelf items include oil, filters, grease, replacement blades, blade sharpeners, belts, hoses and light bulbs — just to name a few.

Many contractors stick with one brand or manufacturer when purchasing various categories of equipment to make their inventories and part replacements simpler. They

also troubleshoot problems early and call for outside technical assistance when needed.

On a scale of one to 10, contractors give preventative maintenance a 10 when it comes to keeping equipment costs down and service hours up. But they also know when it's time to give up that beloved walk-behind or trimmer.

We decided to ask three readers to give us their views on their own personal maintenance programs. Here is what they had to say:

continued next page

LARGE CONTRACTOR

Name: Mike Rorie
Title: President/Owner
Company: Groundmasters, Inc.
Location: Cincinnati, OH
2000 revenues: \$9 million
Business mix: 100% commercial
Employees: 125
Company profile: Began business in 1979, servicing primarily residential accounts. By 1982, Rorie's vision was to create a large equipment-intensive business, so the com-



mercial market became the focal point of his operation. Today, his company is completely devoted to commercial accounts, catering to more than 500 sites.

Maintenance services make up the lion's share of the contract work. The business grew throughout the '80s to about \$1 million in revenue. In the '90s, Rorie added a facility in Cincinnati, Dayton and northern

Kentucky. Today, the company employs 125 people, and revenues topped \$9 million in 2000.

Equipment arsenal: Over 80 trucks, 30-plus trailers and over 400 pieces of additional equipment — everything from tractors to weed eaters.

Maintenance plan: An in-house, five-member fleet department at each branch managed by a fleet manager. "We do all our own preventative maintenance — whether it's a skid loader or a lawnmower." Maintenance/repair work is done the quarter of the year prior to the quarter of production — lawnmowers are fixed in the winter and snowplows in August. The fleet manager determines the standards the company follows when servicing a piece of equipment. "We don't want to underservice or overservice." Will send out the occasional engine overhaul or transmission repair work to an outside mechanic.

Maintenance budget (labor and parts): About 2% of total revenue. Company tries to determine the operation costs of a piece of equipment when developing a preventative maintenance budget. "Contractors need to track equipment just like job costs. We put hour meters on everything. It's the easiest way to track usage and determine preventative maintenance."

An inside job: "Hiring a mechanic will depend on the money you've invested in equipment and the money and time involved in going back and forth to get repairs done on the outside. You'll want someone who is readying the equipment as well as repairing and servicing it."

Parts inventory: Company stocks all the routine parts such as belts, hoses, filters, coils, hydraulic fluids, light bulbs, wipers and tires. All of these parts are part of its preventative maintenance checks. "If we need a new alternator or water pump, we'll access that part through one of our

MEDIUM CONTRACTOR

Name: Kris Hjort
Title: President/Owner
Company: K & H Lawn Services, Inc.
Location: Fairfax, VA
2000 revenues: \$1.8 million
Business mix: 80% residential, 20% commercial
Employees: 10 full-time
Company profile: Started business in 1984. About 55% of services are devoted to maintenance, 30% to design and installation, 14% to turf and ornamental and 1% to snow removal.

Equipment arsenal: Three pick-up trucks and four stake body trucks. Four of company's five vans are Super Lawn trucks.

Other equipment includes 20 backpack blowers, 20 trimmers, seven stick edgers and an array of walk-behind mowers and riders.



Maintenance plan: Company performs minor maintenance such as oil changes on their trucks. Greasing and blade sharpening on other pieces of equipment are performed on a daily basis. Major repairs are sent to an outside mechanic.

Maintenance budget (parts and labor): About 2% of total revenue.

An inside job: Currently uses an outside

mechanic, but company is looking to hire its own part-time mechanic for equipment repair and maintenance work.

Parts inventory: "We used to stock a fair amount of parts but found that it was a waste. Now we only stock oil, grease, mowing blades, maybe one round of oil and air filters and anything that we must have on hand at all times. Replacement parts are purchased from our mechanic. We also try to stick with the same brand whether it's a blower or trimmer."

Cleaning/painting: "We have a hard time doing painting and cleaning because we don't have great access to water to wash equipment and trucks. Still, we try to

2005



local suppliers. We buy multiples of a particular brand. For example, we buy the same brand for our walk-behinds, and so on. This is so we can stock a modest amount of inventory that will fit every piece in a particular equipment category."

Cleaning/painting: Cleaning is done in-house on a routine basis. Extensive cleaning, including steam cleaning engines and waxing, is done annually and sometimes bi-annually. Touch-up painting on trailers, mowers, pumps and sprayers is done in the winter months. Complete paint jobs are left to an outside paint specialist.

Equipment life: "Trucks and trailers are rotated between a 7- to 10-year period due to the

wash trucks and equipment on a weekly basis. We do very little if any repainting of equipment."

Equipment life: "We're a little excessive when it comes to equipment — we don't want to go without. We'll try to allocate three spring trimmers to each of our two-men crews so they have a spare if one piece of equipment breaks down. Smaller pieces of equipment last between two and three years, while mowers can last as long as 10 years. We try to

low mileage we put on them, while smaller pieces of equipment are replaced every two to three years. We used to keep these smaller pieces of equipment twice as long, but it backed up our shops. Plus, we found it cost us more money to upkeep a piece of used equipment. If we sold this piece of equipment at the optimum time, we could get 50 cents on the dollar that could be used towards the purchase of new equipment. Plus, we could take advantage of technological advances much sooner."

Equipment afterlife: "We'll occasionally go through auctions, but typically advertise and sell to a dealer. There's a large audience of small contractors that will take advantage of the price break."

keep trucks as long as possible — the first truck I ever bought died in the fall of last year at 18 years old."

Equipment afterlife: "Once we're through with a piece of equipment, we'll often give it to charity. If we're still using that brand, we'll take the parts that are useful and keep them. If not, it'll go to the junkyard."

SMALL COMPANY

Name: Greg Bechtold
Title: Co-owner with wife, Andee
Company: Longhorn Maintenance, Inc.
Location: McKinney, TX
2000 revenues: \$1.4 million
Business mix: 75% commercial, 25% residential
Employees: 15
Company profile: Entering their 20th year, Longhorn Maintenance, Inc. considers itself a "three-year-old company with 20 years of experience." Three years ago, Longhorn joined ALCA, immediately implementing all of the information it gained from the association. That information helped it increase its gross revenues from \$500,000 in 1997 (with zero profit) to \$1.4 million in 2000.

Equipment arsenal: 21- to 48-in. walk-behind mowers, ZTR mowers, ASV/Dingo, trailers, dump trailers, trucks, and hand tools and back-pack equipment.

Maintenance plan: Company does its own maintenance work such as filter/oil changes and blade sharpening. Anything beyond minor repairs such as carburetor or transmission problems are sent to an outside mechanic.

Maintenance budget (labor and parts): About 2% of company's entire revenue.

An inside job: Will be hiring a full-time shop person.

Parts inventory: Company stocks everything needed for routine maintenance: oil, air filters, blades, spark plugs, belts, nuts and bolts, and weed-eater heads. "Whenever we use a part, we put it on our inventory list right away. Because of that, those parts are constantly replaced, and we don't get behind." They keep each piece of equipment within the same brand to make parts needs simpler.

Cleaning/painting: Cleaning is done weekly, and minor painting such as freshening up a deck is done as needed.

Equipment life: Their trucks last 10 years. "We stay within a very small radius, so our trucks don't travel great distances." Larger mowers last three to four years, while excavation and mini-loaders last up to five years. Hand-held and light equipment lasts one or two seasons. "We have hour meters on larger pieces of equipment, but we won't dump a piece of equipment just because it has logged a lot of hours. If it's cutting service and requiring more repair, though, it gets dumped."

Equipment afterlife: "We sell most of it to a local dealer and retain the best used equipment for our backups."

EQUIPMENT MAINTENANCE 2001

A real seal

Safety Tire Seal Corporation offers the Safety Seal, a self-vulcanizing external repair kit that needs no cement or vulcanizing fluids to make a permanent repair to tubeless tires used on turf equipment such as mowers, skid-steers, tractors, irrigation equipment, trenchers and bucket loaders, as well as cars, vans, trucks, trailers, pickups and SUVs. Get Safety Seal in its new molded, weather-resistant plastic case with enough material to make 30 repairs. For more information contact Safety Tire Seal Corp. at 800/233-8473 / Circle no. 282



Chain gang

Husqvarna's clamshell packaging for chains as well as bar and chain combinations allows retailer and consumers to match their needs with their specific product at a glance. Listed on the packaging are easy-to-read "fit-up" specs matching Oregon chains to Husqvarna chain saws. Chains come in both single and double packages. Bar and chain combinations are single-packed. For more

information contact Husqvarna at 800/438-7297 or www.husqvarna.com / Circle no. 286

Drip drip

National Spencer Inc.'s new non-drip nozzles offer a new way to track different fluids and offer automatic closure to reduce leakage. They are color-coded, and fully compatible with the entire line of Zeeline lubrication equipment. For more information contact National Spencer at 316/265-5601 or www.zeeline.com / Circle no. 287

Paint job

Morgan Corporation has a new custom spray paint for repair jobs and touch-up applications. The paint is an exact match for OEM paint used on Morgan truck bodies. An over spray leveler is used as a finish product to smooth and even out paint applications. For more information contact Morgan at 888/545-7278 / Circle no. 288

Mower parts

Stens Power Equipment Parts, a subsidiary of Ariens Co., has a 2001 catalog out that features a large selection of drive, rider and pushmower parts. Included are replacement universal throttle controls, shift and clutch cables for Honda, starter solenoids for Ariens, rear end overhaul kit for Snapper and more. For more information contact Stens at 800/457-7444 / Circle no. 289

Motoring along

Briggs & Stratton's new Etek electric motor system, a combination DC motor and electronic controller, is designed to power golf cars and other electric-power utility vehicles. The motor is 50% smaller and over 20 lbs. lighter than others, resulting in an efficient combination of power and torque. For more information log on to www.briggsandstratton.com / Circle no. 290

Clean engines

Kohler's air cleaners for Command and Command Pro 18- to 25-hp engines are lightweight, compact and easy to install. A swirl design collects/ejects trapped dust. The main filter has 1,398 sq. ft. of effective area. An eight micron inner filter protects carburetor. For more information contact Kohler at 800/544-2444 or www.kohlerengines.com / Circle no. 291

Chock full o' parts

Industrial Specialties Manufacturing Inc.'s new 230-page catalog describes its selection of fittings, tubing, mufflers, manifolds, valves, filters and accessories in a range of sizes. Products are available in materials such as brass, stainless steel and numerous plastic formulations. A full line of plastic tubing is also described, and includes a chemical compatibility chart and an engineering data section. For more information contact Industrial Specialties Mfg. at 303/781-8486 or www.industrialspec.com / Circle no. 283

\$599 to \$1,469. Air compressors are manufactured with long-life cast iron sleeve pumps as well as Honda engines. For more information contact Northern Tool and Equipment Co. at 800/556-7885 or www.NorthernTool.com / Circle no. 284

Back to the grind

Bernhard and Company's RotaMaster blade grinder features an automatic infeed with auto cut-off which can be left to complete the grinding cycle alone. Features include a quality balancer and automatic traverse with easily adjusted travel stops. With blades held securely in place, both ends can be ground at the same time. The blade grinder is encased and the grinding operation occurs away from the operator. Dust can be vacuumed away using the machine's attachment. For more information contact Bernhard at 888/474-6348 / Circle no. 285

Air apparent

Northern Tool and Equipment Co.'s new line of professional grade NorthStar air compressors include three gas units as well as two electric models ranging in price from





IF YOU DIDN'T BUY A SCAG, YOU PAID TOO MUCH.

When it comes to buying a commercial mower, some less experienced cutters may be tempted by a lower purchase price without realizing the higher operating costs down the road. After all, there are a lot of machines out there that look like a Scag, but none that perform like one.



Scag 3-year deck warranty.



Scag 2-year electric clutch warranty.



Scag 3-year spindle warranty.

That's why Scag owners and operators are so loyal to our brand. They know Scag doesn't cut corners in the design and construction of our commercial mowers. And, they know we stand behind every Scag mower with the industry's strongest warranty and the best-trained dealer organization in America. And that means more money on their bottom line.

For the Scag dealer nearest you, visit our web site at www.scag.com. Get the commercial mower that pays you back every time you use it . . . Scag.

SCAG

Simply the Best

HEADS-UP APPLICATION

It's usually your fault when a herbicide fails to control a weed. A better understanding of herbicides and weeds will help you

BY JOSEPH C. NEAL

Contrary to popular opinion, it's rare for a herbicide to fail to control a weed that it's supposed to control. The "it didn't work" lament is usually the result of either applicator error or environmental conditions beyond our control. An understanding of what makes herbicides fail to work can provide clues to how we can avoid those situations.

Identify the weed correctly

The first task in any pest management program is to correctly identify the pest. Most herbicides are selective — that is, they control some plants and not others. Accurate weed identification provides you with the information you need to make an informed decision.

For example, Dimension (dithiopyr) controls emerged crabgrass but doesn't control emerged goosegrass. Can you tell the difference when these plants have only three or four leaves? Can you accurately identify the broadleaf weeds? Confront (triclopyr +

clopyralid) controls buckhorn plantain but doesn't control black-seeded plantain (*Plantago rugelii*). Can you tell the difference between these two weeds?

There are many manuals to help you with weed identification. Table 1 lists some of the manuals I recommend for turfgrass and landscape professionals, but check with your local cooperative extension office for the best manual for your area. If you have internet access, there are several Web sites with weed photographs. Start your search for weed identification guides at the Northeastern Weed Science Society page (<http://www.ppws.vt.edu/newss/newss.htm>).

Choose the right product

Once you identify your target, you need to select the correct control measure. Just about every cooperative extension office, and most trade journals, provide regular updates on turf herbicide effectiveness on weeds. Charts showing broadleaf weed susceptibility to post-emergent herbicides are common. For grass weed control, most preemergence herbicides work well. To determine which pre-emergent herbicide is best for annual broadleaf weeds, however, you'll have to look harder (you might even have to read some labels). Contact your local cooperative extension office for the latest recommendations for your region. For herbicides in landscape beds, I recommend my book, "Weed Control Suggestions in Christmas Trees, Woody Ornamentals and Flowers," Skroch, Derr and Senesac. To order, send \$7.50 (this includes shipping and handling) to Publications, NCSU, Box 7603, Raleigh, NC 27695-7603. Similar publications are also available from Pennsylvania, Ohio State and Cornell (NY) cooperative extensions.