

# SHORT CUTS

studied are known to survive in thatch.

## CORRECTION

### Chart, captions were reversed

In the May issue of *LANDSCAPE MANAGEMENT*, two captions and two colors on a disease control chart were reversed.

In the article "Diseases of Cool-Season Turf," which began on page 48, the disease identified as necrotic ring spot was actually take-all patch and vice versa.

Colors in the disease calendar on page 50 were also reversed. The chart is reproduced correctly on page 58 of this issue.

The magazine regrets any inconvenience to author Noel Jackson, Ph.D., or any of its readers.

## INDUSTRY

### Monsanto buys 'Clipper' TGR

Monsanto Agricultural Co. has made an agreement with ICI Americas whereby it gains exclusive U.S. distribution rights to ICI's Clipper tree growth regulator.

The regulator extends tree trimming cycles so that electric utility companies can trim less often.

Clipper is injected through small holes drilled into tree trunks. It slows the growth of a variety of deciduous and broadleaf evergreen trees without adversely affecting flowering.

## RESEARCH

### ASPA doles out \$6,800 for research

The American Sod Producers Association (ASPA) reported distributing \$6,800 in grants to four researchers who are assessing the environmental impact of turfgrass and sod.

ASPA grants went to Thomas L. Watschke, Ph.D., Penn State University for his study *The Effects of Turfgrass Establishment on Water Quality*; J.B. Beard, Ph.D., Texas A&M, *A Quantitative Assessment of the Benefits From Irrigated Turf on Environmental Cooling and Energy*; Henry T. Wilkinson, Ph.D., University of Illinois, *The Use of Pseudomonas Fluorescens to Increase the Efficiency of Water Absorption by Bluegrass*; and A. Martin Petrovic, Ph.D., Cornell University, *Effects of Turfgrass Management on Ground Water Quality and Water Use*.

*continued on page 28*

**THE RIGHT STUFF...**Pilot Field, the new home of the Class AAA Boston Bisons minor league baseball team, is made of the right stuff. That is, real grass. Bison president **Robert E. Rich Jr.** notes: "When we conceived the initial design for Pilot Field, we made sure of two very important details. We wanted the sun to shine on our fans, and our players to play on natural grass." The field, sodded last fall, contains a mixture of Victa, Bristol and Merit Kentucky bluegrasses with 10 percent Pennfine perennial rye. The field's irrigation system was designed by Toro Irrigation and installed by the John W. Danforth Co. Others involved in completing the field were **George Terzian** of Star Landscaping, **Jim Hornung** of Elber's Landscaping and **Gerald Rothenberger** of Cowper Management. Also, Comiskey Park's **Roger Bossard** served as a consultant.

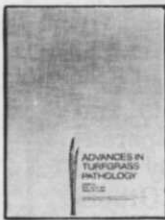
**PUSHING SOD...**The American Sod Producers Association has updated its publication "Guideline Specifications to Turfgrass Sodding." It is divided into five sections: subsoil preparation; topsoil material; fertilizer, pH correction materials and final soil preparation; sod materials and transplanting; and maintenance. For more information, contact the ASPA at 1855-A Hicks Rd., Rolling Meadows, IL 60008; (312) 705-9898.

**BARK WITH BITE...**The National Bark & Soil Producers Association has just released the 1988 issue of its Bark & Soil Product Index. The index lists major suppliers of 14 different bark and soil products (from mulch and nuggets to professional soil mixes, peat and potting soil) and another 30 industry service suppliers. It is available free of charge to landscape contractors, nurserymen, garden centers, landscape architects and other businesses. For your copy, write the NBSPA, 13542 Union Village Circle, Clifton, VA 22024 or call (703) 830-5367.

**YOU, THE CEO...**The Associated Landscape Contractors of America has released the seventh in its series of in-depth reports about the industry entitled "Leadership in the Landscape Industry: the Changing, Challenging Role of the Chief Executive Officer." The report examines the CEO's role, explores his position in an evolving business and details his relationship with middle management. The report's cost is \$5 for non-ALCA members and \$3 for members. Write: Publications Dept., ALCA, 405 N. Washington St., Falls Church, VA 22046.

**THE BEST COURSE?...**Superintendent **Mike McBride** received nothing but compliments from touring pros for the shape he had Muirfield Village Golf Club in for the Memorial Tournament May 23-29. **Greg Norman** said the Dublin, Ohio course was "perfect." Tournament host and participant **Jack Nicklaus**, who developed the course, also praised his superintendent. However, he had to enjoy the course from the CBS broadcast booth on Saturday and Sunday. He missed the cut.

# BOOKSTORE



**010 - ADVANCES IN TURFGRASS PATHOLOGY**  
by Joyner and Larsen  
Leading U.S. turf pathologists report on turfgrass diseases, pythium blight, snow molds, fairy rings, leaf spot of Kentucky bluegrass in Minnesota, initial and field fungicide screening, turfgrass disease resistance, etc. Contains new ideas on how to combat turfgrass problems. **\$27.95**

**220 - CONTROLLING TURFGRASS PESTS**  
by Shurtleff, Fermanian, Randell  
New comprehensive guide provides the most up-to-date information available on the identification, biology, control and management of every type of turfgrass pest. Covers weeds, insects, animal pests and diseases in detail. Also provides information on cultural management practices: the establishment, care and renovation of low-, medium-, and high-maintenance turf areas. 50 color and 400 black and white photographs. **\$32.00**

**230 - LAWNS-Third Edition**  
by Dr. Jonas Vengris and Dr. William A. Torello  
Designed as a textbook or a practical usage manual, this book has been completely brought up-to-date. Care of lawns and turfgrass, from selection of varieties to maintenance of established grass is completely covered. **\$25.95**

**645 - MANAGEMENT OF TURFGRASS DISEASES**  
by J.M. Vargas  
Identifies turfgrass diseases by description and illustration. Includes a holistic approach to healthy turf and lawns. Presents practical management strategies for golf courses, lawns and athletic fields. 204 pages, illustrated. **\$26.70**

**640 - TURF IRRIGATION MANUAL**  
by James Watkins  
A guidebook for engineers, architects, designers and contractors. Keeps pace with the latest developments in turf and landscape irrigation. Specific chapters devoted to rotary sprinkler design systems. Golf course design systems and expanded engineering and reference material. **\$26.55**

**225 - TURFGRASS MANAGEMENT**  
by A. J. Turgeon  
Revised edition. Covers the latest developments in turfgrass science and technology. Heavily illustrated with dozens of new drawings. Provides specific recommendations for applying the newest pesticides, fertilizers and other materials to combat turfgrass problems. A valuable reference for diagnosing problems and determining their causes. **\$39.33**



**615 - TURF MANAGEMENT FOR GOLF COURSES**  
by James Beard  
Written by an eminent turfgrass researcher, this USGA sponsored text is an ideal reference and "how to" guide. Details all phases of golf course design and construction, turf management, course administration, irrigation, equipment and disease and pest control. Fully illustrated. **\$52.75**

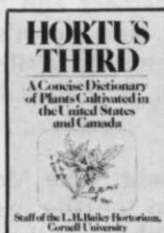
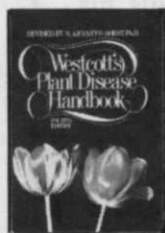
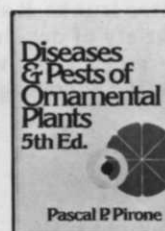
**620 - TURF MANAGEMENT HANDBOOK**  
by Howard Sprague  
Practical guide to turf care under both healthy and poor turf conditions. Chapters cover turf in cooler and warmer regions, fertilizer use, regular turf care, weed and disease control and special turf problems. Useful seasonal schedules for management of turf areas. **\$25.25**

**110 - TURF MANAGERS' HANDBOOK Second Edition**  
by Daniel and Freeborg  
ENTIRELY UPDATED. A practical guide for the turf practitioner. Chapters on grasses, growth regulators and diseases have had extensive modification. Innovations resulting from research and practice have been added to reflect the current techniques available for turf managers. Offers recommendations for effective turf protection through integrated pest management. Included are alternate plans for providing and improving safe, uniform turfgrass for sports fields. Outline format plus newly added index make this new edition easier to use and a more comprehensive approach to turfgrass science. **\$32.95**

**630 - TURFGRASS: SCIENCE AND CULTURE**  
by James Beard  
Comprehensive basic text and reference source used in many leading university turf programs. Includes findings of current research compiled from more than 12,000 sources. **\$39.00**

**410 - DISEASES & PESTS OF ORNAMENTAL PLANTS**  
by Pascal Pirone  
This standard reference discusses diagnosis and treatment of diseases and organisms affecting nearly 500 varieties of ornamental plants grown outdoors, under glass or in the home. Easy to understand explanations of when and how to use the most effective fungicides, insecticides and other control methods. **\$36.50**

**690 - INSECTS THAT FEED ON TREES AND SHRUBS**  
by Johnson and Lyon  
Essential information for identifying more than 650 insect pests and the injuries they cause. More than 200 color illustrations. **\$49.50**



**570 - WESTCOTT'S PLANT DISEASE HANDBOOK**  
by Kenneth Horst  
This fourth edition offers professionals the latest diagnostic and disease control information. Plant entries designed to simplify diagnosis, plus background on the classification of plant pathogens. This handbook gives a specific description of each disease, susceptible plants, specific symptoms of the disease, reported locations and control measures for each disease and their side effects. **\$43.95**

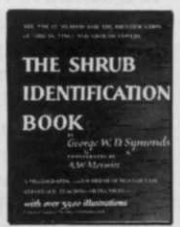
**510 - HORTUS THIRD**  
from Cornell University  
A 1,300 page concise dictionary of plants cultivated in the United States and Canada. A reference which every horticulture professional should have. **\$125.00**

**800 - THE GOLF COURSE**  
by Cornish and Whitten  
The first book ever to give the art of golf course design its due, and golf course architects the credit and recognition they deserve. 320 pages and 150 color and black and white photographs. Traces the history and evolution of the golf course, analyzes the great courses, shows how they were designed and constructed. **\$35.00**

**665 - ARBORICULTURE: THE CARE OF TREES, SHRUBS AND VINES IN THE LANDSCAPE**  
by Richard W. Harris  
Provides comprehensive coverage of complete planting, site analysis, preparation and special planting methods, fully detailed coverage of fertilization, irrigation and pruning guidelines on preventative maintenance, repair and chemical control, how-tos of diagnosing plant problems, practical data on non-infectious disorders, diseases, insects and related pests and pest management. **\$52.00**

**410 - NATIVE TREES, SHRUBS, AND VINES FOR URBAN AND RURAL AMERICA**  
by Gary L. Hightshoe  
This award-winning reference to native U.S. plants has now been expanded to include shrubs and vines. Over 250 major species are characterized by form, branching pattern, foliage, flower, fruits, habitat, soil, hardiness, susceptibility, urban tolerance and associate species. Includes unique color-coded keys that classify plant species by visual characteristics, cultural requirements and ecological relationships. **\$79.95**

**720 - SHRUB IDENTIFICATION**  
by George Symonds  
Pictorial key to identify shrubs. Contains more than 3,500 illustrations to check specimens. Popular and botanical names are given for each shrub and handy index tabs for quick reference. **\$12.95**



# BOOKSTORE

## 750 - TREE IDENTIFICATION

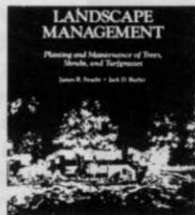
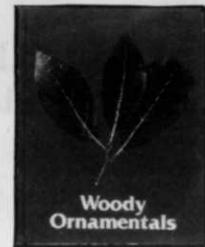
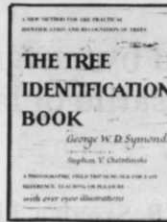
by George Symonds  
Pictorial reference to identifying trees by checking leaves, buds, branches, fruit and bark. Like its sister publication, SHRUB IDENTIFICATION, popular and botanical names are listed with index tabs for easy reference. **\$14.95**

## 760 - TREE MAINTENANCE

by Pascal Pirone  
The fourth edition of this guide for anyone involved in the care and treatment of trees. Special sections on tree abnormalities, diagnosing tree troubles, non-parasitic injuries and assessing the suitability of different trees. **\$49.95**

## 405 - WOODY ORNAMENTALS

by Partyka, Joyner, Rimeispach, Carver  
Illustrates plant identification characteristics. Organized in two basic sections: plant identification and plant disorders, this text utilizes 430 color photos, 430 line drawings and 45 black and white photos to simplify identification. **\$32.50**



## 345 - COST DATA FOR LANDSCAPE CONSTRUCTION 1988

Kathleen W. Kerr, Editor  
An updated unit cost data reference for designers and cost estimators. Developed to fill the tremendous need for detailed landscape construction cost data. Laid out in easy-to-use CSI format. Annual. **\$35.00**

## 300 - LANDSCAPE DESIGN: A PRACTICAL APPROACH

by Leroy Hannebaum  
Geared for the commercial designer/salesperson, this is a one-stop guide to the landscape design process. Covers the entire highly competitive field including design analysis techniques, pointers on land forms, specialized business landscaping methods, environmental design guidelines, specifications, estimations, bids. **\$37.00**

## 305 - LANDSCAPE MANAGEMENT

by James R. Feucht and Jack D. Butler  
Planting and Maintenance of Trees, Shrubs, and Turfgrasses. Describes the basic principles of cultural management of installed landscapes. The important factors of plant growth, soils and fertilizers, improved planting techniques and new pruning techniques, integrated pest and disease management, and spray-equipment calibration and care are all featured. **\$29.95**

## 370 - LANDSCAPE OPERATIONS: MANAGEMENT, METHODS & MATERIALS

by Leroy Hannebaum  
An in-depth examination that combines technical training in landscape science with methods of accounting, business management, marketing and sales. Discusses effective methods for performing lawn installations, landscape planting and maintenance. Step-by-step accounting calculations are explained in simple terms. **\$34.00**

## 365 - LANDSCAPE PLANTS IN DESIGN

by Edward C. Martin  
An annotated photographic guide to the design qualities of ornamental plants and their aesthetic and functional use in landscape designing. Over 600 trees, shrubs, vines, ground covers and turfgrasses are described in nontechnical language. Over 1900 photographs. Provides a basis for selecting the best plant materials for any particular use in landscape design. Contains detailed indexes that provide quick reference to particular design qualities and growing conditions. **\$58.95**

## 375 - RESIDENTIAL LANDSCAPES

by Gregory M. Pierceall  
An excellent reference for individuals involved in the design and development of plantings and constructed features for residential sites. Illustrations and actual residential case study examples are used to communicate graphic, planning and design concepts which are the focus of this text. **\$41.00**

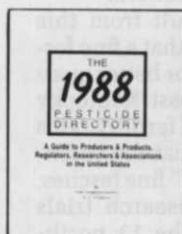
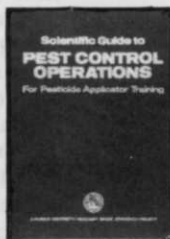


## 565 - WEEDS

by Walter Muenscher  
Second edition. Premier text for identification and basic natural history for weeds found in the continental United States and Canada. Ecological data on weed biology combined with excellent keys and plant descriptions make this an essential reference book. **\$39.95**

## 125 - SCIENTIFIC GUIDE TO PEST CONTROL OPERATIONS

by Truman, Bennett, Butts  
Provides a sound basis for studying the technical aspects of pest control. Covers pesticides, safety, health and environmental concerns, equipment, flies and mosquitos, rats and mice, birds and much more. **\$35.00**



## 500 - THE 1988 PESTICIDE DIRECTORY

by Lori Thomson Harvey and W.T. Thomson  
A Guide to Producers and Products, Regulators, Researchers and Associations in the United States. For the person who needs to know anything in the United States pesticide industry. Includes Basic Manufacturers and Formulators with their products, key personnel, managers, district/regional offices and other pertinent information. For United States pesticide information in one place, this directory is a must. **\$75.00**

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# WHY FINE FESCUES ?

Frequently overlooked by turfgrass managers, fine fescues are among the most adaptable and versatile of lawn grasses, as research from Rhode Island proves.

by C.R. Skogley, Ph.D., University of Rhode Island



Seed for chewing fescue is grown in Oregon.

In 1984, this magazine presented a series of articles on turfgrasses. In one article under this byline, it was noted that fine fescues were an under-used group of grasses. This is particularly so, as improved varieties continue to become available to us.

The wide range of adaptation and versatility of fine fescues remains impressive today. They grow from coast-to-coast in the temperate regions of the United States and Canada, and from central Italy through Scandinavia in Europe. They do well in the Mediterranean climate of Italy and France, on the sand beaches of Belgium and the cold, windy prairie provinces of Canada. They have long been major components of turf stands in the cool humid northwest, throughout the British Isles and the northeastern region of the U.S.

At least 35 species of the genus (fescue) have been identified throughout the U.S., and some species are found in the wild in nearly every state of the union. The fine fescues used for turfgrass purposes are creeping red fescue *Festuca rubra* L. subsp. *trichophylla* Gaud.), spreading fescue *F. rubra* L. subsp. *rubra*, chewing fescue *F. rubra* L. subsp. *commutata* Gaud.), hard fescue *F. longifolia* Thuill.) and fine-leaved sheeps fescue *F. tenifolia* Sibth.) Red fescue and sheeps fescues are reportedly found in 35 or 40 of the 50 states. One or the other appear to be

missing only in the south-central and southeastern states.

Fine fescues differ greatly from their related species, tall fescue, *F. arundinacea* Schreb. and meadow fescue, *F. pratensis* Huds. The latter are coarse-textured grasses with different climatic and cultural requirements.

All fine fescues are relatively fine-bladed and will tolerate mowing to 1½ inches or less, are adapted to both sun and shade and are tolerant of rather acid, infertile and dry soils. They have been used as turfgrasses since the beginning of lawn culture.

## Tender loving care

Until the mid-1900s, lawns were generally not pampered. They seldom received much fertilizer nor were they generally irrigated. This held true also for most golf course fairways and other extensive turf areas. Under these conditions the fine fescues were often abundant in turf stands in many areas of the United States—particularly in the temperate regions having acid soils or a maritime climate. Fine fescues were particularly adapted to areas where soils were infertile and of light texture.

With the advent of increasing fertilization and irrigation, these grasses decreased in popularity and, when once abundant, ceased to be a major component of turf stands. It might be said that these grasses could not stand

“prosperity.” It was not immediately clear why they backed off under increasing levels of maintenance.

It took years to determine that diseases, primarily leafspots, were a major factor in loss of fescues. For many years this loss was not particularly disturbing as improved Kentucky bluegrass and, then, turf-type perennial ryegrasses were entering the market. As long as inexpensive fertilizer and water could be supplied, these grasses were very adequate replacements. Fine fescues became known primarily as shade grasses or for use mainly in low-fertility situation.

Until the release of Merion Kentucky bluegrass in the 1950s, all available turfgrasses were essentially of “common” type. They had not been selected or bred specifically for turfgrass purposes. Even though named varieties were being marketed, the names most often related to their area of production or to a particular type that developed in the producing area.

The release of Merion opened many eyes to the potential for breeding superior turf-type grasses, and the search for more improved turfgrasses was immediately begun.

## Fine fescue on trial

In 1960, trials were established at the Rhode Island experimental station that included Merion, two experimental bluegrasses and five common bluegrass varieties. In the same trial were seeded five common fine fescues and one experimental, R.I. No. 6 (eventually released as Jamestown). The purpose of this study was to evaluate the performance of those grasses when fertilized with one, two or three pounds of N/1000 sq.ft. annually—relatively low rates in that era.

One outstanding result from this trial was the observation that a fine fescue could provide equal or better quality turf than even the best Kentucky bluegrass, at each level of fertility. This was the first indication that the potential existed for “improved” fine fescues.

Regional turfgrass research trials were initiated within the 13 northeastern states in 1968. That year, sepa-





# Fine Fescue Defined

## What are Fine Fescues and why are they so important to turf managers?

Our Fescue turfgrasses are part of most every park, golf course, industrial campus, athletic field, condominium commons and home lawn from the transition zone, Northward.

But, many people are not aware of that. Perhaps we are the most overlooked turfgrass in existence.

We feel that Fine Fescues are the best turf investment a grounds manager can make. And, we'd like to point out *why*.

Fine Fescues are *real* grass. And, as with all living things, there is give and take. Sure, our Fescues take water and some maintenance, but they are better *givers*. Our natural grass turns noxious gases into oxygen and is a natural air conditioner for turf users.

We feel that while artificial turf has its place on locker room floors, it has no business where *real* people work, play and relax. Our grass is just *naturally* more refreshing.

Our Chewings (*Festuca rubra commutata*) and creeping red (*Festuca rubra rubra*) Fescues are rather unique when compared with other turfgrass species. Although they have most of the features of other cool season grasses, Fescues have several distinct benefits worth noting.

*Fine Fescues are low maintenance.* Our varieties require less fertilizer and water than other species. That's a big *plus* at today's water, fertilizer and manpower prices.

*Fine Fescues fare well around trees.* It seems our grass doesn't need as much sunlight, water and nutrients as other turfgrass species. Because Fescues don't compete with trees for these important elements, they're called *shade grass*. Our Fescues don't creep into flower beds, nor crowd out other species in a mixture.

And, because they're Oregon grown, our Fescues germinate, adapt and perform better than imported types.

## You'd expect to pay a fortune for such a turfgrass, but Fescues are quite reasonable

Why don't Fescues cost a great deal? Fine Fescues have been around a long time and

have been changed very little. Why mess with a good thing? While other former "pasture" species are coming closer to looking like our old standard; receiving notoriety for their "improvements" and enjoy the price increases associated with the word "new," our Fescues have continued what they do best... support the up-and-comers. But then, Fine Fescues were meant to be stepped on.

## Fine Fescues are Ideal for Recreation, Sports and Leisure

Not only do Fine Fescues excel alone or in perennial ryegrass/Kentucky bluegrass mixtures on horizontal playing surfaces; Fescues are excellent for low maintenance areas like berms, roadside banks, ski slopes and hilly spots that don't retain moisture. So, you see, Fescues are ideal all-around grasses for *all around* your recreation and sports facility. Their low maintenance requirements offer *turf managers* a chance for a little more leisure... and there's nothing wrong with that.

For a series of nine tech sheets on Oregon grown Chewings and creeping red Fescues, call or write:



## Oregon Fine Fescue Commission

2140 Turner Road SE  
Salem, OR 97302-  
503/585-1157



rate Kentucky bluegrass and fine fescue trails were seeded at several locations throughout the region. The trails contained 55 cultivars of Kentucky bluegrass and 24 fine fescues. All grasses were evaluated at mowing heights of 1 1/2 and 3/4 inches and were fertilized at the rate of three to four pounds of N/1000 sq. ft. annually.

These trials were continued through 1973. Results from this study were most encouraging for fescue grasses.

Evidence of superior performance by selected, improved varieties, over common varieties was clear. Chewings varieties such as Atlanta, Halifax, Highlight and Jamestown were clearly superior to commonly available varieties, and the chewings type generally performed better than the creeping or spreading types. Some of the better varieties performed well even at the 3/4-inch cutting height, which was not expected.

Subsequent variety trails of fine fescues have led to a number of conclusions:

1. Improved varieties of chewings and hard fescue, particularly, are far superior to common varieties. They are more disease resistant, will tolerate closer cutting and will provide excellent density in pure stand.

2. Hard fescues establish more slowly than chewings fescue but seem to be more tolerant of heat, moisture and salt stresses. They will tolerate higher fertility usage.

3. Most fine fescues are prone to

**Table 1**  
Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in evaluation trial, 1979-83.

Cultivar	1978 General Variety Trial						
	5 Year Turf Quality Ratings						
	May	June	July	Aug	Sept	Oct	Ave
<b>Perennial Ryegrass</b>							
Dasher	7.0	5.6	5.0	5.1	6.0	7.1	6.0
Blazer	6.4	6.1	5.1	5.0	6.0	6.8	5.9
Fiesta	6.5	5.8	4.8	4.6	5.4	6.6	5.6
						<b>Overall Ave:</b>	<b>5.8</b>
<b>Fine Fescue</b>							
Jamestown	7.7	7.1	6.6	6.5	7.2	7.1	7.1
Luster	7.4	6.8	6.5	6.2	6.6	7.5	6.8
Scaldis	7.3	7.1	6.7	6.4	6.1	6.6	6.7
						<b>Overall Ave:</b>	<b>6.9</b>
<b>Kentucky Bluegrass</b>							
Ram	4.7	5.5	5.7	4.6	4.4	4.7	4.9
I-13	5.6	6.2	6.0	5.7	5.3	6.3	5.9
Harmony	3.7	4.5	5.1	4.8	4.5	5.2	4.6
						<b>Overall Ave:</b>	<b>5.1</b>

\* Turf Quality Ratings: 9 = best quality  
1 = bare ground or dead turf

summer disorders and possible injury if fertilized during periods of summer heat stress. It appears that, if they are to be fertilized, cooler spring or fall periods would be best.

4. Fine fescues, once established, do not require much fertilizer. They are adapted to lower fertility soils and perform best under low fertility management programs. They develop

deep, extensive, root systems and are very efficient in moisture and nutrient acquisition.

#### Adding versatility

Sod producers in New England generally used as much as 50 percent creeping red fescue, in combination with Kentucky bluegrass, as a seeding mixture until the mid-1970s. The addition of the fescue provided a more versatile product. The sod was more widely adapted to sun or shade and infertile areas as well as fertile soils.

Creeping red fescue was not competitive with vigorous bluegrasses, however, and often at sod harvest very little fescue was evident.

With the availability of improved cultivars of chewings fescue many growers are currently using them with their bluegrasses, but at a reduced rate. Because fine fescues establish more rapidly than does bluegrass, and chewings fescue is capable of profuse tillering, 10 to 15 percent of seed, by weight, appears to be adequate.

In a study of Kentucky bluegrass and red fescue cultivars at the Rhode Island station in 1970, it was evident that rerooting of transplanted sod was faster when fine fescues were combined with Kentucky bluegrass. Each fall at the research farm, new turfgrass cultivar trails are seeded. These trails include potentially improved selections and several standard varieties for comparisons of Kentucky bluegrass, perennial ryegrass, tall fescue and fine fescues.

The trials are maintained for at

**Table 2.**

Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in the evaluation trial, 1981-85.

Cultivar	1980 Variety Trial						
	5 Year Turf Quality Ratings						
	May	June	July	Aug	Sept	Oct	Ave
<b>Perennial Ryegrass</b>							
M 456	5.7	5.8	4.8	5.6	6.1	6.0	5.7
HE 139	6.1	5.2	5.1	5.4	5.5	5.7	5.5
Ranger	5.7	6.0	5.0	6.1	5.6	6.2	5.8
						<b>Overall Ave:</b>	<b>5.7</b>
<b>Fine Fescue</b>							
HF 20	6.5	7.8	6.9	7.3	7.4	7.4	7.2
Scarlet	6.1	6.7	5.5	6.8	7.3	7.5	6.7
Atlanta	6.2	7.1	6.5	7.0	7.1	7.6	6.9
						<b>Overall Ave:</b>	<b>6.9</b>
<b>Kentucky Bluegrass</b>							
HV-72	5.1	6.1	6.0	7.0	6.3	6.2	6.1
HV-54	5.0	6.1	5.7	6.6	6.5	6.3	6.0
HV-71	5.1	6.5	6.2	6.5	6.3	6.0	6.1
						<b>Overall Ave:</b>	<b>6.1</b>

\*Turf Quality Ratings: 9 = best quality  
1 = bare ground or dead turf





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## Danger of ATVs require caution

All terrain vehicles (ATVs) may present a risk of severe injury or death in certain circumstances, warns Tommy Valco, an agricultural safety engineer with the Texas Agricultural Extension Service.

Valco says the Consumer Product Safety Commission recently sounded a safety alert concerning these vehicles, saying that more than 900 people, including many children, have died in accidents associated with ATVs since 1982; many people have become paralyzed or suffered severe internal injuries as a result of accidents associated with ATVs; and thousands of people are treated in hospital emergency rooms every month for injuries received while riding an ATV.

"You and your employees should be aware that an ATV is not a toy and may be dangerous to operate," says Valco. "An ATV handles differently from other vehicles and can roll over on the rider or violently throw them without warning. Even hitting a small rock, bump or hole at low speed can upset it."

Because of the grim statistics, Valco adds, the U.S. government has filed a lawsuit against all manufacturers and distributors of ATVs asking the court to declare the vehicles hazardous and that additional regulations to protect ATV riders be established.

### INSECTS

## Monitoring flowers can save you money

Nurserymen who monitor their flowers for pests may reap substantial cost savings, says Harvey A. Yoshida, a doctoral student at the University of California, Riverside (UCR).

Monitoring enables flower growers to detect, evaluate and record pest populations and trends, Yoshida says. He reminds landscape managers that even small numbers of some pests can ruin the aesthetics of many floricultural crops.

Monitoring also enables growers to evaluate the effectiveness of their pest control programs, not to mention save the nursery money by enabling nurserymen to determine when and at what levels insecticides should be used.

Yoshida recommends combining visual walk-throughs with the use of an insect trap system, such as blacklight traps, pheromone traps, and yellow sticky traps, in order to make good management decisions about pest control.

Where to place the traps depends on the type of pest present, but, in general, Yoshida recommends one blacklight trap per 5,000 sq. ft.; one pheromone trap and one yellow sticky trap per 10,000 sq. ft.

**Table 3.**

Quality ratings of the top three cultivars of perennial ryegrass, fine fescue and Kentucky bluegrass cultivars in the evaluation trial, 1982-85.

Cultivar	1981 Variety Trial						
	4 Year Turf Quality Ratings						
	May	June	July	Aug	Sept	Oct	Ave
<b>Perennial Ryegrass</b>							
Repell	5.6	6.0	4.7	5.3	5.6	5.6	5.5
Yorktown II	5.2	5.4	4.6	5.3	5.7	5.9	5.4
Prelude	5.7	5.8	4.7	5.4	5.9	5.8	5.6
						<b>Overall Ave:</b>	5.5
<b>Fine Fescue</b>							
Reliant	6.5	7.2	5.7	6.9	7.2	7.1	6.8
Waldina	6.6	7.6	6.0	7.3	7.4	7.2	7.0
Jamestown	5.4	6.5	5.0	6.1	6.6	6.5	6.0
						<b>Overall Ave:</b>	6.6
<b>Kentucky Bluegrass</b>							
Mystic	4.4	6.1	5.2	6.4	5.7	5.5	5.6
Ram I	4.0	5.6	4.8	6.1	5.7	5.3	5.3
Baron	3.3	5.0	4.4	5.3	5.5	5.9	4.9
						<b>Overall Ave:</b>	5.3

\*Turf Quality Ratings: 9 = best quality  
1 = bare ground or dead turf

least five years during which time performance data are obtained. The grasses are mowed at a 1 1/2-inch height, watered as required and weeds and insects are controlled. Fertilizer is applied to provide about three lbs. of N/1000 sq. ft. annually. All plots are observed and rated for quality during the first 10 days of each month throughout the growing season, April through November.

For the purpose of comparing quality of the fine fescues with Kentucky bluegrasses and perennial ryegrasses, records of larger trials established in 1978, 1980, 1981 were checked. The five-year monthly and seasonal averages of quality ratings for the three cultivars of each species that exhibited the highest quality throughout the five-year period were recorded.

The data retrieved are presented in Tables 1, 2 and 3. It should seem obvious why we are so high on the fine fescues. In all three trials, the quality ratings of the fine fescues are considerably above those of perennial ryegrass and Kentucky bluegrass.

With the introduction of improved fine fescue varieties, this has generally been the case. Although early improvements were primarily among chewings cultivars, hard fescues started to make their presence known in the early 1970s and excellent varieties of both are currently being marketed.

The 1985 progress report of the National Fine Leaf Fescue Test (established in 1983) clearly shows the fine turf potential of hard fescues. There

are 47 entries in this test. The 1985 report includes data from 19 locations nationally. One sheeps, 14 creeping and spreading, nine hard and 21 chewings cultivars are compared. Performance scores averaged during the second year of the trial (1985) showed seven hard, one sheep and two chewings fescues among the top 10 cultivars.

Although creeping red fescue has great potential and value and is widely used successfully, markedly improved varieties have yet to be developed. Considerable work is under way to provide improved varieties of this grass.

Each species of fine fescue has distinct characteristics, attributes and adaptations. Some of them now contain an endophyte which apparently provides biological control of certain surface-feeding insects. There is also variation in disease resistance and shade tolerance. Certain varieties will tolerate closer mowing than others. Because of this variability, it may be advantageous to use blends of fine fescues for certain uses.

Where very close mowing is required, as on overseeded greens or golf course fairways, chewings and hard fescue would perform best. In higher cut areas such as roadsides or golf course roughs, creeping red fescue would be the species of choice.

At a time when we are more environmentally aware and are attempting to reduce dependence on fertilizer, pesticides and water, the fine fescues have much to offer. **LM**





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JULY 1988/LANDSCAPE MANAGEMENT 29



# ENGINE IRREGULARITIES

Armed with a few simple facts, your field-level employees can often isolate minor engine problems before they grow into expensive major breakdowns.

by John Peterson

**T**he engine is the heart of any piece of outdoor equipment. Keeping it in good working condition helps maintain the equipment's overall efficiency.

Although many engine problems can be complex and require a trained mechanic to repair, the field operator can often detect irregularities that indicate when a major mechanical failure is developing. With a few simple facts and a few extra minutes, the operator can often isolate these minor problems before they become more expensive.

## Before startup

The morning equipment inspection is the first line of defense in diagnosing potential engine problems. It should start with a walk around the vehicle, checking for puddles, which can indicate leaks in any one of a number of systems. Also, check engine surfaces for unusual amounts of fluid and try to trace them.

For example, if the piston rings are worn, several drops of oil will appear around the blow-by pipe. Normally, the area at the end of the pipe will be covered with oil-soaked dust. If the engine has excessive blow-by, oil may be washing the dust away. A compression check will determine if the rings have worn to a point that engine efficiency is affected.

After a visual inspection for leaks, check the oil. Unexpectedly low levels are another indication of a leak that needs attention.

To check for both fuel and coolant in the oil, a simple test can be conducted on a weekly basis. After running the engine for five minutes to get the oil warm, pull out the dipstick and put a drop or two of oil on a paper towel. Unless the oil has been changed in the last few hours, a dark circle surrounded by a lighter, less distinct, ring will appear. The inner circle is oil and the outer ring is diesel fuel, which is thinner than the oil and spreads faster on the paper towel.

The fuel ring should be a thin halo around the oil. A fuel ring twice the diameter of the oil circle indicates

there is enough fuel in the crankcase to start interfering with the oil's lubricating effects.

Although some fuel seepage into the oil is normal, too much before a scheduled oil change may indicate a leak in the fuel system.

Prolonged idling at low speeds also causes fuel dilution. If this is the case, the engine will not warm up enough to expand the rings and the resulting poor rings-to-cylinder sealing will lead to lower compression, allowing more unburnt fuel and oil to mix.

Milky-looking oil may indicate a leak in the cooling system. This can be verified by opening the oil pan drain plug slightly and catching the drippings in a cup. Since antifreeze (even mixed with water) is heavier than oil, it will separate from the oil and a blue or green color will appear. Again, have a mechanic address this problem immediately.

The next step in the daily inspection is to check fan and alternator belts. Try to turn the fan or alternator cooling fins by hand while the engine

is not running. The resistance offered by the engine should make these components difficult to move if the belt is properly adjusted and in good condition. If you suspect a belt is loose, run the machine five or 10 minutes and then check the temperature of the pulleys. If belts are loose, the pulleys will be hot.

A quick visual check can detect slippage on a standard V-belt, as the sides of the belt will be glazed from wear.

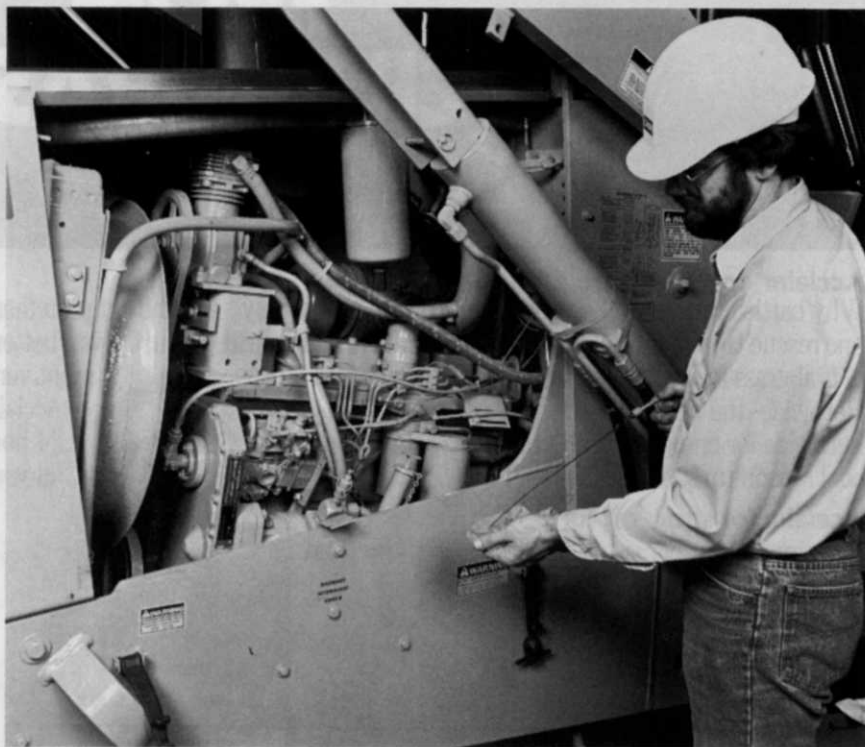
After inspecting the belts, look for loose hoses or hose clamps.

Next, check the air filter. Many have warning indicators to show that the filter is clogged. If this is the case, have it replaced or cleaned.

The morning equipment inspection should also include an inspection of systems that are related to the engine. Often a minor malfunction in one of these systems may appear to be a major engine problem but is, in fact, far less serious.

Here is a brief list of other systems that should be inspected before startup:

*continued on page 32*



Unexpectedly low oil levels are a sign that a leak needs attention. Excessive oil use or very dirty oil is a cause for concern.

Peterson is a service engineer at JI Case in Racine, Wisc.