

Changing the Course of Disease Control.

.....

New
HERITAGE™
FUNGICIDE

.....

ZENECA
Professional Products

Changing the Course.

New HERITAGE™ Fungicide. Changing the Course of Disease Control.

Now, golf course superintendents can change the course of turfgrass disease control with HERITAGE, a completely new fungicide with a novel mode of action.

HERITAGE will give your golf course round-the-clock protection against devastating diseases. With its powerful combination of preventative and curative activity and its high level of effectiveness against 18 of the toughest turf diseases, HERITAGE will make an outstanding difference in the quality and health of your turfgrass.

The active ingredient in HERITAGE is based on naturally occurring fungicides, called strobilurins, which are found in certain mushrooms.

HERITAGE has a novel mode of action which is different than any other fungicide now on the market.

It has both preventative and curative activity and is absorbed into the leaf blades and stems

as well as taken up by the roots. This ensures that your golf course is protected from the devastating effects of turfgrass diseases.

HERITAGE is the only fungicide available that controls both brown patch and Pythium, as well as take-all patch, summer patch, anthracnose and snow mold—an unprecedented advantage for the turf professional's disease program. HERITAGE is also effective against certain fungicide-resistant pathogens, making it an extremely useful tool in resistance management strategies.





Superintendents will find that HERITAGE is exceptionally compatible with the environmental balance of their courses. HERITAGE poses minimal risk to birds, mammals and fish, and its low use rates and extended application intervals mean less active ingredient is released into the surroundings.

For more information on HERITAGE Fungicide and how it's changing the course of disease control, contact your Zeneca Sales

Representative or call Zeneca Professional Products Toll Free at 1-888-617-7690.

Once you learn about the powerful, round-the-clock protection this new fungicide offers, you'll agree that it's time to change the course of your turfgrass disease management program with HERITAGE.

Heritage[™]
FUNGICIDE

Presenting HERITAGE™

For a Totally New Spectrum of Disease Control

HERITAGE Fungicide provides golf course superintendents with a totally new spectrum of disease control for their turfgrass management programs. With its novel class of chemistry and powerful mode of action, HERITAGE controls most major turfgrass diseases. More importantly, it is the only fungicide available to turf managers that controls brown patch, Pythium, take-all patch, summer patch, anthracnose and snow mold. Superintendents across the country are discovering that HERITAGE delivers exceptional results by maintaining, and significantly improving, the quality and health of their turfgrass.

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The Fundamentals of HERITAGE

IT'S A NATURAL

When it came to the development of HERITAGE, Mother Nature and chemistry joined forces. The active ingredient in HERITAGE, azoxystrobin, is synthetically derived from naturally occurring fungicides called strobilurins. These anti-fungal compounds are found in nature in several species of wood-decaying mushrooms. Realizing the power of strobilurins, Zeneca—after years of testing and research—developed this unique class of chemistry into an effective fungicide.

UNIQUE ACTION

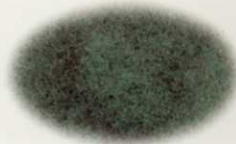
The novel mode of action of HERITAGE clearly separates it from other fungicides. HERITAGE can enter the turfgrass plant through the leaf blade, stem or root system. HERITAGE delivers double action against all four classes of fungal diseases. Its preventative activity keeps diseases from occurring, while its curative activity works against diseases *after* infection has occurred.



Brown Patch



Pythium



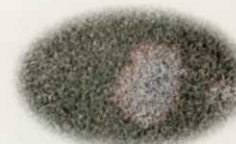
Take-all Patch



Summer Patch



Anthracnose



Snow Mold



Fungicide

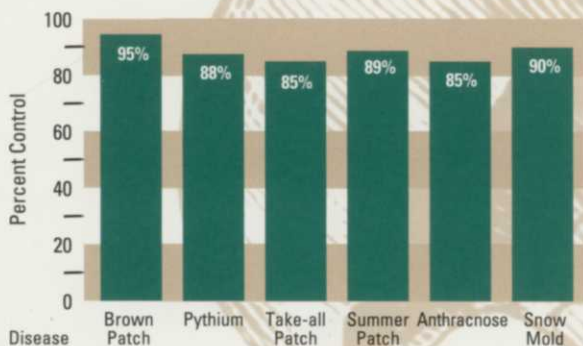
TOTALLY NEW CONTROL SPECTRUM

HERITAGE offers golf course superintendents a totally new spectrum of control for their disease management programs. University trials consistently show that HERITAGE is the only fungicide that controls all six of the toughest turfgrass diseases—brown patch, Pythium, take-all patch, summer patch, anthracnose and snow mold.

WINNING SCORES AGAINST THE SEVERE SIX

Efficacy trials prove the outstanding activity of HERITAGE against these six hard-to-control diseases. In more than 140 field trials nationwide, from 1993 to 1996, HERITAGE delivered impressive control against the severe six.

Four-Year Average Percent Control (1993–1996*)



* Data in the above table is the average of all treatments where HERITAGE was evaluated for turfgrass disease control when tested according to the label recommendations (i.e. label rates and intervals for a particular disease). This included all trials from 1993–1996, except anthracnose, 1994–1996.

UNIQUE FORMULATION

HERITAGE is a 50 percent active ingredient, water-dispersible granular formulation that makes mixing both easy and fast. Because the granules have superior

Actual Size



HERITAGE Granules

Kentucky Bluegrass

The extruded HERITAGE granules are similar in size to Kentucky Bluegrass seed.



dispersal properties, they break apart and form a stable suspension in one to two minutes. Plus, HERITAGE is proven to have tankmix compatibility with a wide assortment of other turf management products.

PACKAGING

Packaged six to a case, the 1-pound, plastic HERITAGE container comes capped with its own measuring cup. Superintendents will find that the compact container makes storage easy and disposal simple.



Spectrum of Control

With excellent activity against 18 major diseases, HERITAGE can provide a solid foundation for any turfgrass disease control program. (See chart on right.)



Handling and Application

Considering the superintendent's demand for convenience and ease, Zeneca developed HERITAGE as a product that allows for simple mixing and application with no special handling requirements.

TURFGRASS DISEASES CONTROLLED BY HERITAGE

Target Diseases	Use Rate (oz. of product) per 1000 sq. ft.	Application Interval (days)
Anthracnose	0.2-0.4	14-28
Brown Patch	0.2-0.4	14-28
Cool Weather Brown Patch	0.4	28
Fusarium Patch	0.2-0.4	14-28
Gray Snow Mold	0.4	14*
Leafspot	0.2-0.4	14-21
Melting Out	0.2-0.4	14-21
Necrotic Ring Spot	0.4	14-28
Pink Snow Mold	0.4	14*
Pythium Blight	0.4	10-14
Pythium Root Rot	0.4	10-14
Red Thread	0.2-0.4	14-28
Rhizoctonia Large Patch	0.4	28
Spring Dead Spot	0.4	28
Summer Patch	0.2-0.4	14-28
Take-all Patch	0.4	28
Yellow Patch	0.4	28
Zoysia Patch	0.4	28

HERITAGE alone effectively controls most cases of gray or pink snow mold. A severe snow mold infection, however, may require a tankmix of HERITAGE and another labeled fungicide for enhanced control.

*Two applications, 14 days apart.

A FIRST-RATE, REDUCED-RATE FUNGICIDE HERITAGE demonstrates a consistently high level of efficacy against turfgrass diseases at one of the lowest rates of any fungicide on the market—just 0.2 to 0.4 ounce of product per 1,000 square feet. Remember to always consult the label for appropriate use rates, conversion charts and application recommendations.

MIXING, SPRAYING AND TANKMIXING

Mixing HERITAGE consists of a simple, three-step process: **1.** Partially fill the spray tank with clean water and begin agitation. **2.** Add HERITAGE followed by an adjuvant, if desired. **3.** Finish filling the tank with water.

Once in the spray tank, HERITAGE disperses quickly in water. You'll also find it's easy to both apply and tankmix. HERITAGE is compatible with a wide variety of fungicides, insecticides, herbicides, fertilizers and other additives.

APPLICATION INTERVALS

The residual activity of HERITAGE allows for extended application intervals from 10 to 28 days, depending on the disease and level of pressure.



A Good Environmental Fit

HERITAGE offers superintendents the assurance of an outstanding environmental profile that fits the diverse surroundings of a golf course.

FAST DEGRADATION

Azoxystrobin, the active ingredient in HERITAGE, has a relatively short soil half-life, is degraded by sunlight and breaks down primarily into CO₂.



LESS IS MORE

The lower rates of HERITAGE mean a high comfort level for the superintendent and golfer alike. The product's use rates minimize the amount of chemical applied, which translates into a greater degree of environmental compatibility.

A FRIENDLY PRODUCT

Extensive research repeatedly shows that HERITAGE exhibits low mammalian toxicity. In addition, its low use rates and extended application intervals significantly decrease the amount of product handling for the worker. **The signal word for HERITAGE is CAUTION.**

LOW RISK TO NON-TARGET ORGANISMS

HERITAGE, used at labeled application rates, exhibits low risk to non-target species. Also, since it's not harmful to honeybees and other beneficial insects, HERITAGE is a good fit in your integrated pest management program.



To Learn More About HERITAGE

Now that you have an idea of how HERITAGE meets the needs of the superintendent's turfgrass management approach, we invite you to learn more about this new fungicide and what it can bring to your disease control program.

For more information on HERITAGE Fungicide, contact your authorized Zeneca Distributor, or call Zeneca Professional Products Toll Free at 1-888-617-7690.

A Bird's-eye View of HERITAGE from Tee to Green

At a glance, you can see the advantages that HERITAGE can bring to your golf course disease control program.

- *Combines a new class of chemistry and powerful mode of action for outstanding control of most major turfgrass diseases.*
- *Effectively controls brown patch, Pythium, take-all patch, summer patch, anthracnose and snow mold.*
- *Demonstrates preventative and curative activity against diseases.*
- *Has low use rates and extended spray intervals.*
- *Fits well in the environmental balance of a golf course disease control program.*



HERITAGE™ Fungicide

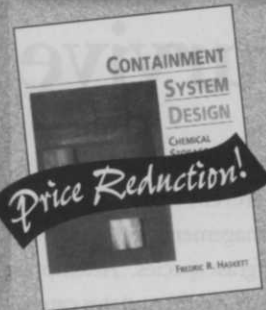
Changing the Course of Disease Control

- Effective against 18 of the toughest turfgrass diseases
- Controls brown patch, Pythium, take-all patch, summer patch, anthracnose and snow mold
- Preventative and curative activity
- Low rates, extended spray intervals
- Novel mode of action
- Low risk toxicological and environmental profile

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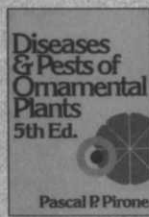
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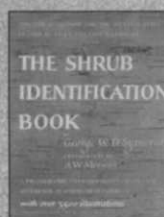
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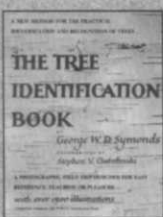
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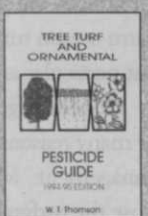
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LANDSCAPE MANAGEMENT

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IN THE SOUTH, only strongest weeds survive

Proper selection and management practices give warm-season turfgrasses the 'competitive' edge in the turfgrass manager's battle against weeds.

by FRED YELVERTON, Ph.D./University of North Carolina

Warm-season turf species are ideally adapted to the lower-tier states in the US. Cold tolerance usually determines how far north a particular warm-season turf species is used. In many areas of the transition zone where both cool- and warm-season can be successfully grown, cool-season turf species are often preferred in the commercial and residential landscape because warm-season species go dormant in the winter. However, in many cases, a warm-season turfgrass would be better adapted to that particular area.

Proper turfgrass selection is critically important for many reasons, not the least of which is weed management. Most weed problems originate because the turfgrass is not growing vigorously and is therefore unable to successfully compete with many weed species. Therefore, proper turfgrass manage-

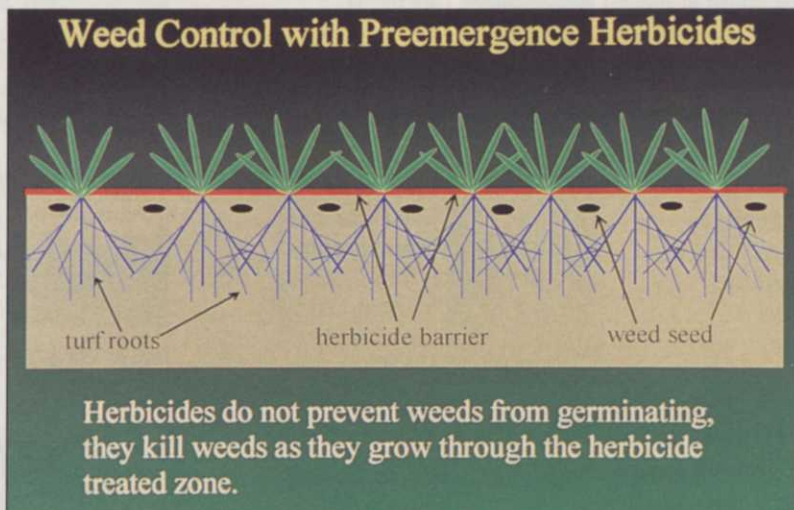
ment is the best way to prevent weed problems. Good turfgrass weed management begins with proper selection of a turfgrass species. Attempting to grow tall fescue in many southern states can result in unnecessary weed problems because the turfgrass is not competitive.

Other common management problems that lead to weed problems include attempting to grow a particular turfgrass species where; 1) there is too much shade, 2) drainage is poor resulting in water-logged soils, 3) improper fertility and liming schedules are utilized, 4) consistent use of improper mowing heights, and 5) where soil compaction exists. Each of these situations can lead to significant weed management problems that result in unnecessary herbicide applications, additional costs, and a less than desirable appearance in the landscape.

Think of weeds and the turfgrass as competitors for space in the landscape. Weeds are opportunistic. When the turfgrass is not healthy, weeds gain a competitive edge. For instance, wet soils from poor drainage can result in poor performance of turf but it also opens the door for water-loving plants such as the sedges (yellow and purple nutsedge, annual sedge, green kyllinga, etc.). Improper mowing heights or irregular mowing schedules can open the turfgrass canopy and allow sunlight to reach the soil surface. This can open

the door to infestation of many weed species including crabgrass, goosegrass, etc. Certain weeds also thrive in compacted soils. Prostrate knotweed and goosegrass are two such species. The presence of these weed species are often indicators that aeration is needed.

While many weed problems are brought on as a result of the above-



Herbicides kill weeds as they germinate and grow through the herbicide-treated zone. They do not prevent weed seed germination.