grow green

earth-wise guide to

Lawn Problems

in this fact sheet:

- Chinch bugs
- Grubs
- Brown Patch
- Take All Patch
- Drought Stress
- Iron Chlorosis
- Shade Stress

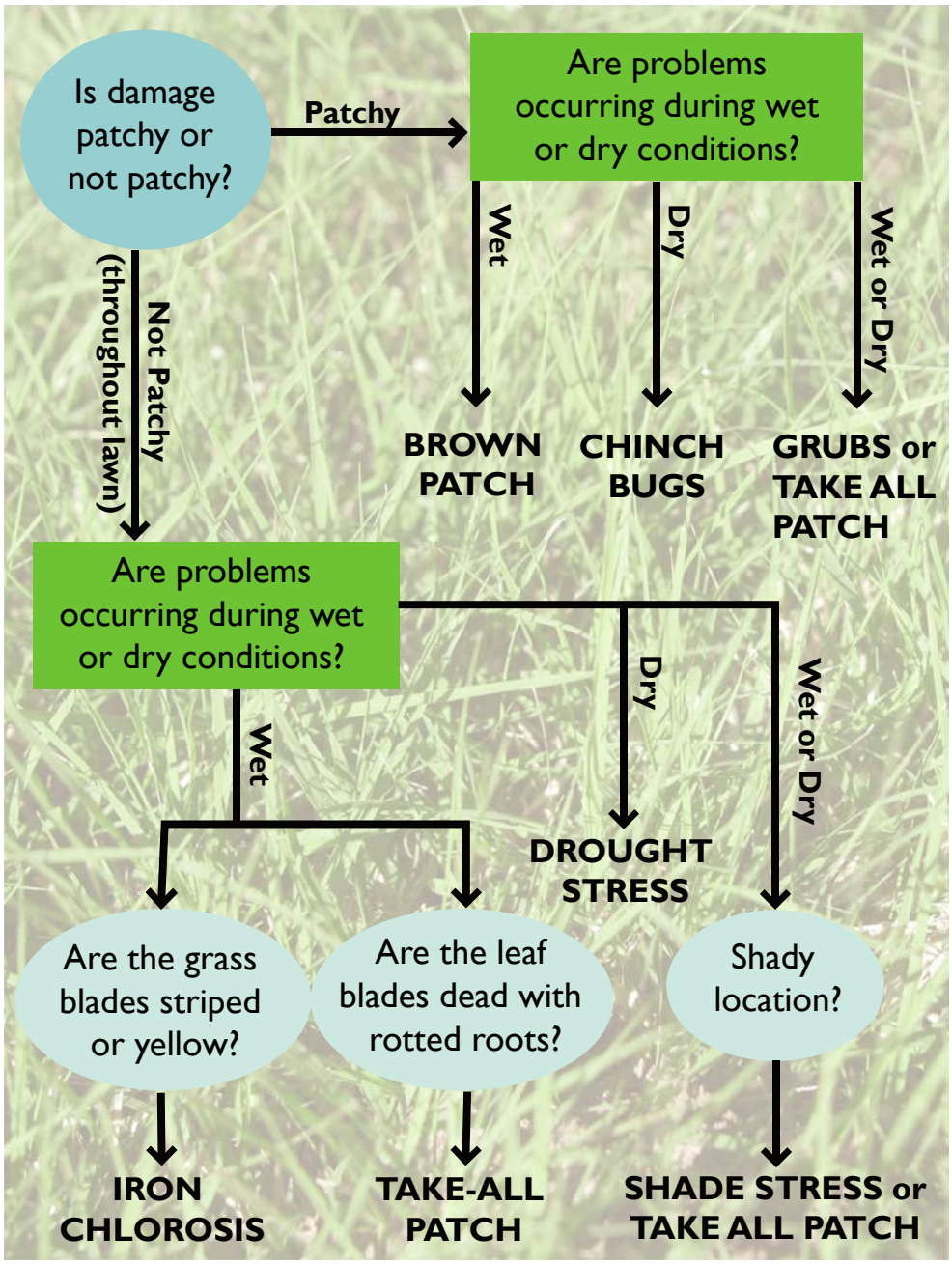
quick tips to avoid lawn problems

- Establish a healthy soil depth (at least six inches under your turf)
- Choose the correct turf for your light conditions and lawn use
- Aerate your lawn once a year to improve drainage and reduce soil compaction
- Irrigate efficiently (water in the morning, wet soil to a depth of 4-6 inches, and allow the soil to dry out between waterings)
- Mow properly taking no more than 1/3 of the leaf blade off with each mowing
- Test your soil periodically to determine which nutrients are lacking BEFORE you decide whether or not to fertilize
- Choose natural or certified organic fertilizers which are naturally slow release
- Build a healthy turf to avoid the need for herbicides

Identify before you buy

Need help diagnosing a plant problem? Call the Texas AgriLife Extension Service at 512-854-9600 and ask for the Master Gardener desk or email them at travismg@ag.tamu.edu

Follow the flow chart to identify what may be damaging your lawn:



Insect Pests

Testing for Chinch Bugs:
Cut the bottom out of a coffee can and push the can one inch into your turf near the edge of a dead patch. Fill the can with water. If present, chinch bugs will float to the surface.

Chinch Bugs

Description:

Adults are small and slender; 1/6" to 1/5" long with black bodies and whitish wings; wings are clear with black "bases" on forewings; recently hatched nymphs are wingless, pinkish-red, with a light-colored band across their backs.

Infestation:

Cause expanding, irregular patches of dead or stunted grass surrounded by a halo of yellowing, dying grass; typically begins in a sunny location adjacent to a concrete walkway or curb. Damage can increase rapidly, especially in sunny locations during hot, dry weather.

Attacks:

Primarily St. Augustine grass; may feed on zoysia or bermuda grass

Prevention/Solutions: Prevent drought stress in your lawn. Irrigate efficiently (see page 1). Make your yard a haven for beneficial predator insects, such as big-eyed bugs and birds by avoiding the wide use of lawn chemicals. Check for chinch bug infestation on the grass blades at the edges of affected areas. Use insecticidal soap or other least toxic treatments (see last page). If there are signs of damage, spot treat only infested areas

Testing for Grubs:
Cut out one square foot of turf in an area you suspect of having grubs. Look for grubs in the soil directly under the turf, then press the turf back into place and water it in.

Grubs

Description:

Creamy white and C-shaped with three pairs of legs; grow to 1/2 - 1" long; grubs are May and June Beetle larvae.

Infestation:

Feed on roots and other underground plant parts; severely damaged lawns lose vigor and turn brown and can be lifted by hand like a carpet; most lawn damage occurs during summer and fall months.

Attacks:

St. Augustine, bermuda, zoysia, buffalo grass

Solutions: Promote healthy roots in your lawn by mowing high and watering effectively. Only treat when more than 5-10 grubs per square foot are found. Apply beneficial nematodes, (tiny worms that kill grubs) to affected areas and be sure to water them in.

Other Stresses

Drought Stress

Description:

Grass looks blue-green or silverish. Individual leaf blades curl. Footprints remain in the lawn when you step on it. The soil under the lawn is dry.

Tolerance to drought:

All turf can survive some drought stress, although some types of turf require less water than others

Buffalo:	Very Drought Tolerant
Bermuda, Zoysia:	Drought Tolerant
St. Augustine:	Drought Tolerant In Shade Only

Solutions: Choose drought tolerant turf grass. Irrigate efficiently by watering deeply and infrequently; water to a depth of 4 to 6 inches every time you water, and allow soil to dry out between waterings. Steeply sloped areas can be difficult to water effectively. Consider alternatives to turf slopes.

Iron Chlorosis

Description:

Leaf blades of the grass are striped green and yellow or completely yellow. Iron chlorosis occurs in alkaline (high pH) soils with high phosphorus levels, and also under cool wet soil conditions.

Attacks:

St. Augustine grass

Solutions: DO NOT use fertilizers that are high in phosphorus. Top dress turf with 1/4 - 1/3" compost. Aerate your lawn once a year. Iron supplements provide temporary relief.

Shade Stress

Description:

Turf grass thins and disappears, leaving bare patches of soil or areas of weeds.

Attacks:

Buffalo grass and bermuda grass do not grow well in shaded areas

Solutions: Choose shade tolerant groundcovers or shade tolerant turf grasses (such as St. Augustine and to a lesser extent, zoysia) to plant in shady areas. Thin out branches of trees a bit to "brighten" shady areas. Set mower higher to allow more leaf blade to capture sunlight. Minimize foot traffic or pet activity in shady areas.

product toxicity comparisons

Evaluation of active ingredients only; does not include toxicity information on inert or "other" ingredients.

Toxicity/Threat:

○ *low* ◐ *low to moderate* ◑ *high* ● *highest* **NA** *not applicable*

? *unknown toxicity* *earth-wise*

Hazards:

note	Product Name	target pest	active ingredient(s) / concentrations	human toxicity: acute	human toxicity: chronic	aquatic life	birds, bees, pets	soil mobility	environmental persistence
	Brown Patch and Take All Patch								
	Antidote™	grub	Beneficial nematodes	?	?	?	?	?	?
	Concern® Diatamaceous Earth Crawling Insect Killer	chinch	Diatomaceous earth from silcone dioxide 85% Other elemental oxides 10%	?	?	?	?	?	?
least toxic	Bonide® Grub Beater	grub	Azadirachtin 0.09%	◐	?	◐	◑	○	○
	Maxide® Dual Insect Killer	both	Thiamethoxan 0.20% Lambda-cyhalothrin 0.04%	◐	◐	◑	◑	◑	◐
	Spectracide® Triazicide® Once and Done!™ Insect Killer2 Concentrate	both	Gamma-cyhalothrin 0.25%	◑	◐	◑	◑	◐	◑
	Spectracide® Grub Stop™ Once & Done!™	grub	Halofenozide 1.5%	◐	?	●	◐	○	◐
	Bayer Advanced™ PowerForce® Multi-Insect Killer Concentrate	chinch	Cyfluthrin 0.75%	◐	?	●	◑	○	◐
	Scotts®Turf Builder® with SummerGuard™	chinch	Bifenthrin 0.86%	◐	?	●	◑	○	◐
	Green Light® Neem II Ready-to-Use	chinch	Pyrethrin 0.02% PBO 0.20% Neem Oil 0.90%	◐	●	◐	◑	○	○
	Diatect® Multi-purpose	chinch	Pyrethrins 0.2% PBO 1.0% Silicone dioxide 82%	○	●	◑	◑	○	○
	Bayer Advanced™ Complete Insect Killer for Soil & Turf Ready-to-Spread Granules	chinch	Imidacloprid 0.15% Beta-cyfluthrin 0.05%	◐	?	●	◑	◑	◑
	Scotts® GrubEx® Season-Long Grub Killer	grub	Imidacloprid 0.2%	◐	?	●	◑	◑	◑
	Bayer Advanced™ 24 Hour Grub Killer Plus Ready-to-Spread Granules	both	Trichlorfon 6.24%	◐	◑	◑	◑	●	◐
	Hi-Yield® Turf Ranger Insect Control Granules	chinch	Deltamethrin 0.1%	◐	◐	●	●	○	◐/◑
most toxic	GardenTech® Sevin® Lawn Insect Granules	chinch	Carbaryl 2%	◐	◑	●	●	◑	◑

The City of Austin and the Texas AgriLife Extension provide this information as a comparative reference only. Listing of a specific product trade name does not constitute an endorsement of its use. Many other pesticides and pesticide products, other than those listed in these tables are available and may be suitable for use.

Products rated by Grady J. Glenn, Ph.D., B.C.E., of the Pesticide Safety Education Program, Texas AgriLife Extension Service.
The rating system was developed by Philip Dickey of the Washington Toxics Coalition.

If You Must Use a Pesticide...

- Avoid applying broad spectrum pesticides — they destroy beneficial insects as well as pests and leave trees or shrubs unprotected if pests return
- Avoid highly mobile or persistent products
- Apply only to plants specified on the label — some formulations injure tender ornamental plants and new growth
- Mix according to directions and apply only recommended dosage
- Systemic pesticides are taken up by the plant and make its tissues and fluids toxic to the feeding chinch bugs and grubs. Non-systemics must be applied to all infested plant surfaces for best results, because they must come into direct contact with the insects
- Avoid overuse of chemicals — many pests have become resistant to certain pesticides

Fungal Diseases

Take-All Patch

Description:

Yellowing of grass and darkening of grass roots is the first symptom of take-all patch, followed by the turf thinning in irregular shapes. The roots can become so rotted that the grass can be easily pulled up. Take-all patch spreads mainly from fall through spring when there is abundant moisture and cool, mild temperatures, but dieback symptoms appear in the hot, stressful days of summer.

Infestation:

Grass roots rot, and eventually kill lawn

Attacks:

St. Augustine, zoysia, and bermuda grass

Solutions: Maintain good drainage in lawn area. Irrigate efficiently (see page 1). Avoid heavy fertilization of turf areas, as excessive nitrogen seems to promote take-all patch. Raise the mowing height on your mower to reduce stress to your turf. Avoid the use of broadleaf herbicides which may weaken turf. Avoid urea-based fertilizers.

Some differences between take-all patch and brown patch: With take-all patch, the roots rot; with brown patch, the grass blades rot. Brown patch is circular in shape, take-all patch has an irregular shape. Brown patch mainly occurs during the cool season, while take-all patch appears mostly during the warm season.

Brown Patch

Description:

Circular patterns of dead grass blades; in 2-3 weeks, new leaves may emerge in the center of the circular patch giving diseased areas a donut-shaped appearance; occurs in late fall through early spring when daytime temperatures range between 75-85° Fahrenheit. Promoted by wet weather or frequent irrigation.

Infestation:

Turf turns brown and grass blades rot off of the runners; can spread in an area from 1 - 50'

Attacks:

Primarily St. Augustine grass

Solutions: When you irrigate, water early in the morning to allow the grass blades to dry out during the day. Irrigate efficiently (see page 1). Avoid overfertilization of your lawn. Aerate your lawn once a year. Fungicides are most effective when used at the first sign of disease.

product toxicity comparisons

Evaluation of active ingredients only; does not include toxicity information on inert or "other" ingredients.

Toxicity/Threat:

○ low ◐ low to moderate ◑ high ● highest **NA** not applicable

? unknown toxicity 🐞 earth-wise

Hazards:

note	Product Name	target fungus	active ingredient(s) / concentrations	human toxicity: acute	human toxicity: chronic	aquatic life	birds, bees, pets	soil mobility	environmental persistence
	Brown Patch and Take All Patch								
🐞	Serenade® Lawn Disease Control	brown	*Bacillus subtilis 1.34%*	○	○	○	○	○	○
	Maxide® Dual Disease	both	*Azoxystrobin 0.31%*	○	◐	◑	○	◑	○
	Green Light® Fung-Away	both	*Triadimefon 0.5%*	◐	◑	◐	○	◑	◐
	Fertilome® Liquid Systemic Fungicide	brown	*Propiconazole 1.55%*	◐	◐	◑	◑	◐	◐
	Fertilome® Halt Systemic Rose, Flower, Lawn &Ornamentals Fungicide	brown	*3-thioallphanate 50%*	○	◐	◑	◑	◑	○
	Scotts® Lawn Fungus Control	brown	*Thiophanate-methyl 2.3%*	◐	●	◐	○	○	◐
	Actinovate® SP	both	*Streptomyces lydicus 0.037%*	◐	?	◑	○	●	◐
	Spectracide Immunox® Lawn Disease Control Granules	both	*Myclobutanil 0.39%*	◐	◑	●	◑	◐	◐
	Spectracide Immunox® Plus Insect & Disease Control	brown	*Myclobutanil 0.78%* *Permethrin 1.25%*	◐	◑	●	●	◐	◐/◑
	Fertilome® Liquid Systemic Fungicide	both	*Myclobutanil triazole-propanenitrile 0.39%*	◐	◑	●	●	◐	◑

least toxic ↓ most toxic

The City of Austin and the Texas AgriLife Extension provide this information as a comparative reference only. Listing of a specific product trade name does not constitute an endorsement of its use. Many other pesticides and pesticide products, other than those listed in these tables are available and may be suitable for use. **Check labels carefully as trade names and active ingredients may change.**

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The rating system was developed by Philip Dickey of the Washington Toxics Coalition.

If You Must Use a Fungicide...

- Avoid applying the more toxic fungicides
- Avoid highly mobile or persistent products
- Apply only to plants specified on the label — some formulations injure tender ornamental plants and new growth
- Mix according to directions and apply only recommended dosage
- Systemic fungicides are taken up by the plant and make its tissues and fluids toxic to the fungus. Non-systemics must be applied to all infested plant surfaces for best results, because they must come into direct contact with the fungus
- Avoid overuse of chemicals

why grow green?

The Grow Green program is based on Integrated Pest Management (IPM) principles that encourage the LEAST TOXIC approach to pesticide and fertilizer use. The goal is to reduce the amount of landscape chemicals that degrade water quality when they run off into waterways or leach into our groundwater.

Grow Green is a partnership between the City of Austin Watershed Protection Department and Texas AgriLife Extension Service. Call 974-2550 or 854-9600 for more information or visit our website at **www.growgreen.org**

www.growgreen.org

City of Austin WATERSHED PROTECTION 512-974-2550

Texas A&M AgriLife Extension 512-854-9600

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