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Shoot growth can also be retarded by high rates of lime applied to established turfs growing on strongly acid soil.

It is best to apply lime when grass leaves are dry, so the material will sift down to the soil. Watering immediately after spreading not only washes the dust off the leaves, but also carries the material onto moist soil where its action can begin.

Lowering pH—Soils that are waterlogged, rarely leached, irrigated with water containing calcium and magnesium,

or limed excessively can develop moderately alkaline pHs of 7.5 to 8.4.

A decline in turfgrass vigor usually occurs on alkaline soils. High pH may result in symptoms of lime-induced chlorosis.

Alkaline pHs (above 7.5) can be corrected by applying an acidifying material: elemental sulfur, gypsum (CaSO_4), certain fertilizers such as ammonium sulfate and iron sulfate, or aluminum sulfate. The last, however, can be toxic to turfgrasses if not properly used.

Elemental sulfur can be applied in a mix with sand or topdressing material. The rate of a single application should not exceed 5 lbs./1000 sq. ft. Do not apply sulfur during mid-summer stress periods.

—Sources: "Turf Management Handbook" by Howard B. Sprague; "Turfgrass: Science and Culture" by James B. Beard; "Practical Turfgrass Management" by John H. Madison; and "Lawns" by

Making turf diagnosis easier

■ The Plant and Pest Diagnostic Clinic (PPDC) at Ohio State University recently published this list of the top 10 factors you should include when writing or calling a college or university about a turf problem:

1. List all symptoms. Describe the general appearance of the turf. Does it look waterlogged, dried or scorched? Have any patterns or color changes occurred? A clear color photograph is the best visual aid.

2. Pattern of development. Does the problem appear in full sun or shade? Do the affected areas occur near irrigation lines, high traffic areas, sidewalks or buildings? Does it occur in low, moist places?

3. Amount of turf affected. How much of the lawn, green or field is affected? Do lawns nearby show similar symptoms?

4. Crop. Please list grass varieties planted, so consultants can determine which grass is more affected by the pathogens.

5. Seeding date. Was the lawn seeded or sodded recently, or is it a mature lawn?

6. Time of infection. When did symptoms first appear? What were the weather conditions prior to symptoms? Did the condition worsen coincidentally with an environmental or cultural change?

7. Treatments. When, at what rate, and what chemicals or fertilizers were applied? Was the grass irrigated before or after treatment? Send any samples of turf before fungicide applications were made. Fungicides prevent or impair culturing results.

8. Irrigation. Specify frequency, amount and time of day that irrigation is applied, if any.

9. Cultural practices. Was the turf aerated or topdressed? When? Did the problem occur afterward? How long afterward?

10. Environment. What amendments have been added to the soil? Include the results of recent soil tests, if applicable.

Key to long-lived landscapes: the right plant for the right spot

■ Whether soil is too wet, too dry, too shady or too steep, there are beautiful, hardy plants that will thrive in these conditions.

"The trick to a low-maintenance, long-lived landscape is selecting plants best suited to grow in the climate and soil conditions," says Dr. J. Robert Nuss of Penn State University.

Overly wet soils occur in low-lying areas and are produced by springs, a high groundwater table or nearby ponds or streams. "Wet areas can support a wide range of exotic plants, many of which grow nowhere else," Dr. Nuss

observes.

For clayey soils, he recommends coltsfoot, Siberian iris, perennial sweet pea, red maple, American hornbeam, pin oak or arborvitae.

"If you want to grow annuals in clay soil, you will need to work in a generous amount of organic material," he says. "Unless you're willing to spend time adding a lot of organic matter to clay soil, it's best to stick with plants whose roots easily penetrate clay."

Other plants to use for specific growing conditions are listed in the adjacent chart.

PLACING PLANTS APPROPRIATELY

WET, SHADY AREAS

impatiens
sweet alyssum
scarlet sage
blue sage
verbena
wild iris
many violets
many wildflowers
alder
dogwood
pussy willow
weeping willow
magnolia
mountain laurel

DRY, SHADY AREAS

columbine
lily of the valley
bleeding heart
balloonflower
daylily
boxwood
false cypress
holly
hemlock
pine
yew
barberry
cotoneaster

SUNNY, DRY AREAS

marigold
zinnia
four o'clock
geranium
cosmos
yarrow
butterflyweed
daylily
lupine
oriental poppy
many orn. grasses
prickly pear cactus
crownvetch
sedum

Source: Dr. J. Robert Nuss