

ivy (creeping charlie) or sandspurs frequently denote a need for fertilizer. Pennywort, dichondra, and watersedge show improper watering and poor drainage. Presence of spurge often suggests a nematode or compaction problem.

**Improper chemical application.** Chemical burns may be generally in a streaked or spotted pattern, and affect the soil as well as the grass. These burns usually are the result of improper calibration, careless application, or poor maintenance of equipment. Almost all pesticides used for the control of insects, diseases, and weeds can cause damage if directions for application are not followed. Careless application results in skips, misses, or overlapping. Burns also result from clogged nozzles and dirty or faulty equipment.

Common causes of chemical burns are: *gasoline* (filling a mower on the grass, or a leaking carburetor or gas line); *oil* (overfilled air-cleaner or adding oil while the mower is sitting on the lawn); and *grease* (excessive grease on fittings).

**Common weed chemical damage.** High rates of 2,4-D cause grass runners to become looped, the tips curl upwards, and the leaves become brittle. In severe cases there is a brown ring at each joint and the roots are usually dead. Improper rates of Simazine or Atrazine cause the grass to become yellowish with some leaves and stems dead. On st. augustinegrass, the healthy grass usually becomes susceptible to gray leaf-spot fungus.

**Incompatibility.** Some insecticides, fungicides, weed chemicals, and liquid fertilizers are not compatible when applied together. As an example, fungicide containing mercury when applied with liquid fertilizer often will burn the grass. Carefully read the entire label before applying any chemical.

#### Miscellaneous Symptoms

**Excessive traffic.** Uneven distribution of traffic in children's play areas, around clothes lines, dog runs, or automobile parking areas causes the grass to become damaged in patterns asso-

ciated with the cause. The symptom of excessive traffic is worn or ragged grass with loss of color. As the condition becomes worse, most of the grass is killed.

**Grass not adapted to area.** A general thinning of the grass, weak plants, or worn areas may result when the grass selected was not adapted to the area, or when the maintenance level is not adequate for optimum growth.

**Dog damage.** Brown spots which resemble disease damage are often caused by dog urine or feces. The grass in these spots often has a speckled appearance,



This drought damage to zoysiagrass was caused by nematode and mole cricket damage to roots. Areas protected from sun survived.

but also may be brown, bleached, or dead.

**Salt damage.** Usually occurs on grass where salt spray or water washes onto the lawn, such as on the ocean, gulf, or waterways. If the lawns are not watered with fresh water, the salt tends to accumulate, causing tip burns on the leaves of grasses that are more tolerant. On grasses not tolerant of salt, the grass declines and eventually dies. This same condition may occur when fertilizer is applied and a small amount of water added following the application. The tip burn usually shows up in two to three days. Water from swimming pools can cause grass to have a purplish-brown, streaked appearance if allowed to drain on lawns.

**Shade.** All lawngrasses in Florida need some sunlight. Heavy shade from buildings or trees cause the grass to become weak and thin and the stems and leaves tend to elongate.

**Plant roots.** Roots of many trees and bushes compete with grasses for water and fertilizer. The grass in areas where there is root competition usually is thin and does not hold its color or may wilt before other areas of the lawn.

**Cold damage.** When grass has been maintained under a low fertility level, the blades and stems turn a reddish purple with slight cold damage.

**Frost damage.** First symptom of frost damage is greasy-looking grass. Later the leaves turn a bleached brown. Frost damage is most likely to occur in areas of the lawn that are exposed, with dry soil, or thatched lawn.

**Drought damage.** Almost all lawns are subject to drought conditions at some time or other. This results from high temperatures and uneven rainfall distribution. Poor moisture retention is a cause in most Florida soils. Many times the same area of the lawn will wilt first. At first, the leaves roll up. If the condition continues, the grass turns brown or a straw color, and may die.

*This is the first of two articles. Next month, author White will take up soil problems, nutritional symptoms, insects and diseases.—Ed.*

## Kansans Should Order Trees Now for Spring Planting

Orders for trees, shrubs, and stratified nuts to be planted this spring are being taken at county extension and soil conservation district offices throughout the state, Harold Gallaher, Extension Forester at Kansas State University, Manhattan, announced recently.

Interest in the Kansas tree distribution program has grown with each succeeding year. In the last 8 years, 8½ million trees, shrubs, and stratified nuts have been distributed in this program.