

Plant damage can be divided into four non-lethal categories:

(1) rapid leaf drop; (2) tissue chlorosis or discoloration; (3) tissue distortion and tip burn; and (4) marginal and interveinal necrosis.

The degree of plant damage depends on the amount of chlorine in the air, its duration of exposure, susceptibility of the plant to damage, and environmental conditions such as moisture content and temperature.

Lower concentrations of chlorine in the atmosphere will do more visible damage when humidity is high.

Under high humidity (more than 80 percent) or when fog or dew is present, chlorine combines with water vapor to form a hydrochloric acid aerosol mist on plant surfaces. Under these conditions, droplets may form on leaf surfaces, causing necrotic spots or burns to form.

Under low humidity, the chlorine gas forms an anhydrous hydrogen chloride which may cause less visual damage but has been speculated to cause more severe

Table 2

SEVERITY OF DAMAGE TO PLANTS IN SOUTHERN NEVADA

NONE

asparagus fern
barrel cactus
cholla cactus
dusty miller
euonymus
hesperaloe
ice plant
juniper
myrtle
palms
pyracantha
rosemary
santolina
turfgrasses
wisteria
yucca
Texas ranger
athel
star jasmine

SLIGHT

Algerian ivy
ash
canna
bush morn. glory
English ivy
fortnight lily
photinia
iris
pampasgrass
pittosporum
salvia
snapdragon
verbena
Italian cypress
heavenly bamboo
arborvitae
almond
chrysanthemum
Indian hawthorn

MODERATE

agave dianthus
heavenly bamboo
honeysuckle
stone pine
Jap. black pine
lavender
magnolia
Mexican primrose
mulberry
mums
oleander
pansy
pomegranate
Idaho locust
silk tree
privet

SEVERE

apricot
bird of paradise
chinaberry
Chinese/Sib. elm
lilac
marigolds
nectarine
olive
peach
plum
poplars
rose

Source: The authors

damage because of the dehydrating action on exposed tissue.

Acute damage happens so rapidly that

chlorine is not assimilated by the plant and cannot be detected easily in tissue samples.

The Nevada burn

■ Early in the morning of May 6, 1991, a large blue-green cloud was released from a broken two-inch line that led to a 150-ton storage tank of liquid chlorine. An industrial plant in southern Nevada accidentally released 60 tons of chlorine that rapidly vaporized and caused the evacuation of 10,000 residents in a 20-square mile area. Nine people were hospitalized. In the affected area, landscape plants bathed in an unknown concentration of chlorine gas for several hours.

A team of commercial horticulture volunteers surveyed landscape plant damage in a neighborhood within 1/2 mile of the chlorine leak one week after the accident. Recorded plant damage is shown in Table 1. Table 2 lists the plants that were found to have probable chlorine emission damage.

Within 24 hours after emission, partial to total leaf drop occurred on elm, cottonwood, chinaberry, all stone fruits,

some pome fruits, rose, olive, mulberry, pomegranate, Texas privet and Indian hawthorne.

Flowers were not affected and were more tolerant of exposure to chlorine with one exception: leaf and flower drop on Indian hawthorne. Chlorosis and necrosis occurred three to five days after emission. New growth began to cover damaged tissue, and refoliation occurred in seven to 10 days.

All pines suffered some sort of damage, ranging from twisting and dieback of new growth (candles) to needle tip burn and needle drop.

Turfgrasses (tall fescue, bluegrass and bermuda) all tolerated the exposure with no visible damage. In some cases, chlorine damage was difficult to separate from previous winter damage.

—Dr. Morris, Ms. Lawson-Dyka

Treat now for pythium rots

This is the time of year to make sure pythium rots don't take away valuable turf areas.

■ Although this disease is most frequently associated with established bentgrass/annual bluegrass putting greens, it can also be a serious problem on highly managed home lawns and newly-seeded areas. It is particularly severe on ryegrasses, bentgrasses and bluegrasses.

To minimize turfgrass losses from pythium root rot (PRR), Dr. Eric Nelson of Cornell University says, manage to reduce plant stress or eliminate prolonged wet periods.

Early symptoms of PRR may be visible in the early spring immediately after snow

melts, but are most common in the late spring. Symptoms may be evident any time during the growing season, and may continue into late autumn.

Symptoms:

- small diffuse yellow or reddish brown patches about two to three inches in diameter, often resembling early stages of pink snow mold;
- plants slow to come out of winter dormancy;
- less vigorous growth;