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WINTER DAMAGE TO BOXWOOD

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Boxwoods are susceptible to winter damage. The winter of 1976-1977 was especially severe and many boxwoods in a weakened condition suffered winter damage. To guard against damage this coming winter, it is important to understand why winter damage may occur, and to be prepared to take steps to prevent, or to minimize winter injury.

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Causes of Winter Damage

1. An inadequate supply of soil moisture is often a contributing factor that causes winter damage to boxwood. Boxwood are potentially vulnerable during the winter to injury following an extreme dry summer or fall.
2. High winds during the late fall or winter may cause excessive transpiration which results in plants giving off unusually high amounts of moisture. If this moisture is not quickly replaced, damage may occur.
3. High, low or fluctuating temperatures can cause damage:
 - (a) A sudden out-of-season freeze which hits plants when they are actively growing and are most vulnerable.
 - (b) A sudden drop in temperature which may cause bark splitting. This is most apt to happen when a warm sunny day is followed by a bitterly cold night. Damage will be more severe on the side of the plant exposed to the sun because the range of temperatures experienced by the plant in that location will be greater.
 - (c) A prolonged period of extremely low temperatures where the ground becomes deeply frozen and prevents roots from taking up moisture.
 - (d) Low temperatures which exceed the normal hardiness range.
 - (e) In mild or open winters, plants that were properly dormant in the fall may be coaxed into cambium activity on warm days, especially if they are exposed to direct sunlight. The recurrence of freezing weather injures or kills the new tissue thus formed, and sometimes causes the bark to freeze and separate from the wood.

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4. Plants that are low in vitality or have experienced a growth check during the summer and are stimulated into untimely growth by rainy periods in the fall and do not have time to harden off their growth before freezing weather are susceptible to winter damage.

5. Heavy loads of snow or ice that causes stems to crack.

6. Certain plants are more susceptible every year to winter burn or browning because of the genetic makeup of the plant. Therefore in taking cuttings for propagation it is important to avoid plants that show a tendency towards winter injury.

7. Plants that are allowed to develop aerial roots along the branches may have these roots damaged during periods of dry weather or extreme cold weather. When this condition occurs damage is observed in the upper portion of the plant. Removal of the debris that accumulates in the center of the plant will prevent development of aerial roots.

Symptoms of Winter Injury

Boxwood suffering winter injury may show the following symptoms:

1. The foliage is reddish brown, yellowish or grayish green or there is complete loss of color.

2. Death of entire branches especially in the middle and apical parts of the crown.

3. The occurrence of sunken areas in the bark of the trunk just above the ground line or in the crotches, and along the sides of main branches. Examination of the sunken bark may show that it is brown throughout or contains brown streaks and that in many places it has separated from the wood so that patches of considerable size can be stripped off. Cracks may develop in the stem.

How to Combat Winter Injury

Various management practices listed below may help to prevent damage.

1. Make sure the plants enter the dormant season in a healthy and vigorous condition with adequate soil moisture. If needed apply fertilizer before July and do corrective thinning during the spring. Check especially to see that the center of the plant is free of dead leaves and other debris.

2. During dry periods in the spring, summer, fall or winter, water as needed.

3. Provide wind protection for plants in exposed situations by using snow fences or lattice frames covered with burlap or pine boughs stuck in the ground.

4. Boxwoods recently transplanted will benefit if partially shaded or barriers are erected to cut down on wind penetration.

5. Provide a mulch of wood chips, leaf mold, or similar materials. A mulch protects by preventing rapid temperature change at the soil surface, deep penetration of frost, and excessive loss of surface water.

6. Remove snow from boxwood during or after a snow storm or as soon as practical by shaking the bush with a broom or stick. However do not attempt to remove snow if branches are frozen as breakage will occur. The weight of heavy snow may cause the stems to break especially if they are weak.

7. Large American boxwood may be protected against snow damage by wrapping the outer branches with strong nylon cord. Tie the cord securely to a low branch, pressing the boughs upwards and inward; wrap cord in an upward spiral around the bush, having cords 8 to 10 inches apart. Have cord tight enough to prevent breakage from excess weight of snow or ice but not enough to exclude air circulation around the plant.

If Winter Injury Occurs

When winter injury to boxwood occurs and is evident in the spring, check to see whether one of the management practices outlined in the section, How to Combat Winter Injury, has been overlooked and be prepared next year to make the proper adjustment.

If the plant has dead stems, remove these stems by cutting back to live wood. On plants where the foliage has turned a reddish brown, delay drastic pruning in the spring until after new growth starts. Very often plants that are fed and given sufficient moisture in the spring will produce new foliage and by the end of spring, the injured foliage will fall, and be replaced by new foliage.

