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Landscape Drought Damage- Repair and Replace
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Turf and shrubs damaged by drought.

Last summer's hot, dry conditions were brutal to many of our landscapes, leaving us with dead patches in the lawn, dead shrubs, and dead trees. So far, a dry winter has continued the trend, and predictions for Summer 2013 are more of the same.

So, what can we do to repair last summer's damage, and prevent additional problems this summer?

Assessing the Damage
We expect plants that are not well-adapted to Nebraska's dry, windy conditions to develop damage during drought. This includes plants such arborvitae, poorly sited yews, and broadleaf evergreens like holly. Arborvitae can become tolerant to average dry conditions 1) if they are planted in shade, and 2) once they are well established. Yews can tolerate normal dry conditions if they are located in afternoon shade. But last summer's drought was way beyond normal dryness, and many plants that did not receive supplemental irrigation have died.

Some plants with reputations as tough, drought tolerant plants suffered much more damage last summer than was expected. Specifically burning bush, Euonymus alatus, and Colorado spruce, Picea pungens. These plants are known for their tolerance of difficult conditions, but by mid-summer last year many landscapes had completely brown burning bushes. And by fall, many Colorado spruce were exhibiting browning needles and branches, and that browning has continued to worsen during winter.

As spring progresses, homeowners should carefully observe plants that turned brown last year, or those that have brown branches. Check plants and branches in several locations for signs of life. Try to snap the branches, and look for those that are still pliable. Look for green, dormant buds, which would indicate the branches are still alive. Gently scrape the outer bark away, looking for

green cambium underneath. If any of these life signs are present, give the plant plenty of time to begin new growth in spring. Once new growth begins, the dead branches can be pruned away.

If, however, branches are brittle, dry, and show no signs of green live buds or living green cambium, then remove the dead plants, or prune out the dead branches.

Designing Drought Resistance Landscapes


Arborvitae killed by drought.

Before automatically replacing dead plants, stop to consider why these particular plants died. Many factors contribute to plant health, and many factors play a part in plant death, too. Address these issues before replanting, to improve the overall health of your landscape.

- Were these plants a poor selection for the site? Did they receive too much sun for their growing preference, or not enough water?
- What are the soil conditions? If soil is heavy, compacted, or poor quality amend the soil with compost and alleviate compaction before replanting.
- Were the plants placed in the middle of the lawn, and surrounded by turf grass instead of placed in a planting bed? Turf grass can be very competitive for soil moisture, and make it difficult for trees &shrubs to grow well. Put tree, shrubs and ornamentals in planting beds, grouping plants with similar water and sun requirements. This creates the best growing environment, and allows you to optimize irrigation for both ornamentals and turf.
- Were they growing in rock mulch? Did they have plastic covering their roots? Lack of oxygen in soil covered by plastic can limit root development, and reduce a plant's ability to tolerate drought. Remove plastic and replace rock mulch with organic products, such as wood chips or bark chips. Or install a drip irrigation system in planting beds with rock mulch to make irrigation easier and more efficient. Replant with very tough plants that can tolerate reflected heat from the mulch.
- Did the plants receive reflected heat from a building, or other hard scape feature? Choose plants carefully that can tolerate these difficult conditions.

Whenever possible, consider using landscape plants that area well-adapted to Nebraska's challenging growing environment, and place plants in the landscape according to their site preferences. "Right plant, right place" is very important concept when creating a drought resistant landscape.

Plants that are native to the Midwest often exhibit good drought adaptability. But many non-native plants are also highly drought-tolerant, and as long as they are well-adapted to local conditions and are non-invasive, they can also make a good addition to a drought resistant landscape.

Regardless of source, plants adapted to drought often have the following characteristics.

- Deep and extensive rooting (some native prairie plants can develop roots to depths of 15-20 feet).
- Smaller leaves which lose less water to transpiration.
- Shading of leaf surfaces by hairs, which is often the reason that leaves of drought-tolerant plants appear gray or fuzzy.
- Waxy leaf surfaces (typically appear white or blue) that help restrict water loss.
- Drought avoidance; they choose to go dormant during the hottest periods of the summer and resume growth in the fall when temperatures cool and moisture may be more available.

For more suggestions on drought tolerant plants for your landscape, refer to "Perennials in Water-Wise Landscapes".

Consider Soil Quality

In addition to focusing on plant selection, the most important thing that a homeowner can do to enhance drought tolerance is to provide plants with the best soil conditions possible. Healthy soils that balance water storage and drainage, contain ample organic matter, and are not compacted, will help plants maximize rooting and water uptake. Growing plants with vigorous root systems increase their drought tolerance.

Amending soil with organic matter, breaking up compaction through tilling or spading. Work 1-2 inches of compost into the soil at a depth of 6 inches. Minimize traffic in planting areas, and never work with wet soil.

Seed certified by the Nebraska Crop Improvement Association is usually identified with a blue tag.

Lawn Repair

Many lawns also sustained damage last year, and now is the time to repair it before hot summer conditions are upon us again. If your lawn has 50 percent or more desirable, living grass, then

overseeding is a good choice. If you have less than 50 percent desirable, living grass, then it might be worthwhile to renovate the entire lawn.

Choose a high quality seed blend with 3-4 different cultivars of Kentucky bluegrass or tall fescue. A blend of Kentucky bluegrass and tall fescue together can also make a nice lawn.

Remember, scrimping on seed quality will soon be evident in lawn quality. Seed that is certified by the Nebraska Crop Improvement Association is usually identified with a blue tag on the seed bag. Check the seed label and avoid seed blends that include 1) coarse textured, pasture grasses like K-31 tall fescue, or 2) annual grasses like annual bluegrass or annual ryegrass.

Overseeding
Spring overseeding of Kentucky bluegrass should be done from April 1st to April 30th; tall fescue- between April 15th and June 15th. The amount, or rate, of seed applied in an overseeding operation differs compared to that used for a new seeding.

If you decide to renovate your entire lawn, then use a full seeding rate. For Kentucky bluegrass, apply 3-4 lb. of seed per 1,000 sq.ft., and tall fescue apply 8-10 lbs. of seed per 1,000 sq.ft.

When overseeding into a partial turf, Kentucky bluegrass should be applied at 1-2 lbs. of seed per 1,000 sq.ft. and tall fescue at 4-6 lbs. of seed per 1,000 sq.ft. When working with small amounts of seed, mix sawdust, dry sand, organic fertilizer, or any other suitable material with the seed to aid in obtaining uniform coverage.

Site Preparation
Before spreading the seed, prepare the soil to create a good seedbed. Small areas can be prepared by hand raking to remove excess dead top growth and loosen the soil surface. Larger areas can be prepared by aerating or power raking. Aerating opens up the soil and provides a good surface for seed germination. Seeds that fall into the aeration holes will germinate and grow well; there is no need to topdress or fill in the holes before seeding. Power raking should be used only if a thatch layer in excess of 1/2" is present.

Applying a pre-emergent herbicide for weed control is especially important with spring seedings since weed pressure is so much greater early in the year. The only pre-emergent herbicide that can be used with new seedings is Siduron, commonly sold as Tupersan. This herbicide will provide good control of annual grassy weeds like crabgrass and foxtail, yet still allow the grass seed to germinate. For new seedings, use the lower recommended rate and repeat the application one month later.

Finally, keep the new seeding moist until germination has occurred, then gradually decrease the amount of water applied. Kentucky bluegrass should receive 1" of water per week, from rain or irrigation, during spring and fall, and 1.5" of water per week in mid-summer. Tall fescue is drought tolerant and once established can be grown in most years without irrigation. No matter what type of grass is used in the turf, apply water deeply and infrequently to encourage deep rooting.

Begin mowing as soon as possible. Mowing encourages the lawn to become thick and dense. Sharpen the mower blade before cutting the new stand of grass to avoid tearing out the new plants and reduce the probability of disease infection.