

STANDARD RECOMMENDATIONS AND SHORTCUTS ARE TESTED BY DROUGHT

By Bruce F. Shank, Editor

The landscape professional has been working in drought conditions for more than a year now. He has adjusted maintenance programs and made changes in his recommendations to show customers that landscapes need not be sacrificed when availability of water is reduced.

Drought has tested his skill and forced him to realize that the future will present challenges requiring a thorough knowledge of horticulture to solve. Drought, reduced maintenance, and energy conservation are just a few of the challenges to be faced in the 80's.

Renovation of drought damaged turf and landscapes this late summer and fall should reflect the experience gained with drought and anticipate the needs of the future. Showing the customer you can protect him from future disasters will be important.

Drought basically taught us that standard recommendations and a few accepted shortcuts allow little protection when water gets short. Typical shortcuts, such as poor grading and seedbed preparation, use of cheaper varieties of turf seed, inadequate irrigation, and minimal care after installation can be blamed for serious turf losses. At the same time, dependence on exotic turfgrasses, excessive irrigation, overfertilization, and mowing for carpet-like appearance have brought the same losses. The money shortcuts saved could have prevented the need for renovation now. The extra money spent on trying to be special has been lost.

Renovation ought to be a significant market this coming fall and spring.

Obviously, we can not return to unmowed fields of native grasses and sheep. Landscapes must be functional as well as attractive. We can, however, apply what we know to be true and refuse to make shortcuts. The landscape architect, sod producer, and landscape contractor must resist shortcuts to get lower bids. The grading has to be right. The seedbed has to be properly worked, amended, and fertilized. Irrigation should be included in any fine turf area. The sod grower should supply improved varieties and the seeding contractor's seed mix and rates should be carefully scrutinized. Followup fertilization and weed control should be strongly advised to the customer. Sensible irrigation and mowing schedules should be recommended.

Renovation ought to be a significant market

this year. The value of a knowledgeable contractor will hopefully be recognized by those that lost their lawns. The contractor can improve the customer's lawn as he restores it. The importance of rootzone, turfgrass variety, proper irrigation and mowing, and chemical maintenance can be taught to a new group of customers. Approach renovation from the standpoint of turfgrass and its environment. Offer the periodic services which customers find inconvenient, including aerification, soil testing, thatching, fertilization, weed and insect control. Educate them to their role in mowing at proper heights and irrigation only when needed. Get the customer interested in his lawn once again.

Drought: Causes and Effects

Drought damage to turfgrass occurs when the cell walls remain rigid while the cell contents dehydrate and contract. This stress eventually causes death of the cell. Grasses have natural reactions to drought stress most commonly evident as summer dormancy where all but a few buds in the crowns, stolons, or rhizomes die. The dead leaf tissue helps insulate the live cells from further damage. Kentucky bluegrass and bermudagrass are recognized as good recoverers from dormancy. Annual grasses may seed prior to summer drought for fall germination.

Certain conditions can encourage drought damage. These include poor rootzones (pH, texture, lack of potassium); overfertilization with nitrogen, causing too much foliage growth; mowing too low; exposure to dry winds; steep slopes; and turfgrasses with poor rooting characteristics.

Warm season grasses such as bermudagrass, zoysiagrass, and bahiagrass have developed natural characteristics to survive drought and high temperatures. Use of these grasses north of the transition zone, however, is not very practical. Cool season grasses such as hard, tall, and red fescue exhibit good drought tolerance. Improved varieties of tall and hard fescues offer the greatest hope for low maintenance in the north if cold hardiness can be achieved.

These grasses possess water conserving characteristics. The roots are deep, aggressive, and well-branched. Root hair zones are well-developed. They also retain moisture with thick, waxy surfaces and folding or rolling leaves, and have very small plant cells which resist dehydration stress.

Creeping bentgrass, rough bluegrass, and centipede are not drought resistant. Perennial ryegrasses are not as tolerant as Kentucky bluegrass.

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Shortcuts from page 14

Summer drought stress is a natural phenomenon which will not cause permanent damage to the turf providing there is adequate fall moisture for recovery. However, if drought continues into the fall and the still dormant turf enters winter, permanent damage can occur.

Distribution of components in polystands will change in favor of the fescues.

Polystands of Kentucky bluegrass, red fescue, and perennial ryegrass become primarily red fescue. The desired bluegrass or ryegrass will probably not be present or distributed in the turf in the desired way the following year. The turf will appear thin and dead grass will be evident throughout. If drought continues, even the fescue will not creep to replace the bluegrass and ryegrass. Sod takes longer to transplant.

This is the state of millions of lawns in the Northeast. Improved spring rainfall and proper fertilization will not bring the typical recovery property owners expect after summer dormancy. Water rationing is still enforced in sections of New Jersey. Many homeowners are doubtful that irrigation water will be in adequate supply in the future. They will hesitate to invest in turfgrasses which require irrigation for proper maintenance.

Drought Maintenance

Beside the inherent nature of some turfgrasses to withstand drought, certain steps can be taken to reduce stress. Mowing height should be raised to encourage deeper rooting. Soil tests should be performed to establish any deficiencies in potassium, phosphorus, and minor elements. Only needed amounts of nitrogen should be applied. Irrigation should be less frequent but thorough and concentrated to desired areas. Aerify to help water infiltration and improve soil air content. Application of wetting agents may be worthwhile to get more benefit out of limited water. Try to restrict traffic in turf areas.

Recovery and Renovation

Many regions of the U.S. have had to think little about water until the past year. West Coast property owners have lived with water shortages for many years and have set standards accordingly. Turf areas are assigned a priority. High priority areas receive irrigation, extra attention to rootzone, and improved sod. Remaining areas are planned and constructed for low maintenance and cost. Priority setting could be one way of making proper renovation attractive in the East and Midwest.

This way a property owner can retain the pleasure of an attractive lawn while doing his

part to conserve water. Since loss and permanent damage of some shrubs and ornamentals is also likely, the priority plan assures that all desired plants will be protected while secondary landscaping is designed for low maintenance. It shows the customer that the landscape professional has options not previously well-known.

Once priority has been established, the appropriate work and material can be determined. The turf environment should be considered first. Soil tests should be made. Drainage, soil texture, exposure to sun and wind, slope, and the remaining grass should be evaluated. Corrective measures should be evaluated for both high and low maintenance areas.

A good low maintenance Kentucky bluegrass or fescue should be selected for low maintenance areas. Chemical renovation with glyphosate (Roundup), thatch removal, and mowing prior to seeding will provide the best turfgrass stand. Any soil nutrient deficiencies should be corrected prior to seeding.

Once established, the low maintenance areas should receive only the care needed to prevent weed encroachment.

Improved rainfall and fertilization will not bring about typical recovery from summer dormancy due to drought.

High priority areas should offer control of the turf and its environment. Irrigation should be possible. The rootzone should be amended to a depth of four inches. Nutrient, organic content, and water repellent properties should be solved.

These areas should receive top quality sod or seed. All progress in turfgrass breeding should be applied to the situation. Aggressive, disease resistance, and drought tolerant turfgrass should be selected.

After establishment, this area should be maintained for appearance without excessive growth. The idea is not to splurge, but to protect the high priority areas from future crises. **WTT**



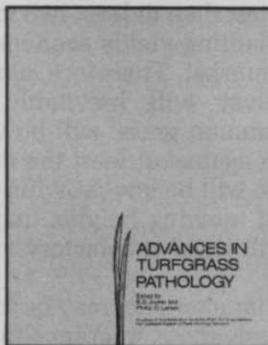
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