Colorado State University Cooperative Extension programs are helping Coloradans
• learn best management practices for turfgrass,
• use established techniques that produce turf using maximum water efficiency,
• reduce costs of inputs and minimize impacts on the environment.

The Costs...
• It is estimated that 35% to 60% of the water used in western U.S. metropolitan areas during the summer is applied to landscaped areas, including turfgrass.
• Homeowners who strive for the perfect lawn have been accused of using four to six times more pesticide per acre than farmers do, and may use twice as much water as the turf needs to survive.
• An estimated 17% of household waste in many landfills is landscape-related; as landfills get filled, more states are banning landscape waste, including grass clippings, from household garbage.
• Improper turf management decisions can be expensive and may negatively impact air, soil and water quality.

Challenges of Sustainable Turf Management

The Colorado State University Cooperative Extension sustainable turfgrass management program works across Colorado to identify methods that help all producers and managers of turf—both lay and professional—produce aesthetically pleasing, functionally safe, economically viable, and environmentally friendly turfgrass. Improper management decisions can be expensive and may negatively impact air, soil and water quality, so the program involves strategies to help turf managers select species, varieties, cultural practices, and pest management approaches that reduce costs of purchased inputs, minimize impacts on the immediate and off-site environment, and provide a sustained level of quality and/or profit from turf management. It integrates knowledge about all elements—water, pesticides, fertilizers, wastes, energy, economics, etc.—into systems that can easily and economically be used at all levels of turfgrass production and management.

Turfgrass Water Conservation Efforts

The production and management of turf in Colorado requires some level of irrigation during the establishment and subsequent culture of that turf. The manner in which this is done ultimately affects turf quality, but also has potential ramifications for water and soil quality and may create important economic problems for the water user. Colorado's arid and semi-arid conditions under which turfgrass is cultured necessitates the application of approximately 50% of total urban water use to maintain adequate quality on the most commonly planted grass species, such as Kentucky bluegrass. This highly visible use—and often misapplication and waste—of water for landscape maintenance creates a target for those who maintain that it's a "non-essential use" of water. Others view the use of fertilizers and pesticides on turf areas to be problems for the natural environment, although the mass of available research tends to disprove this. Eliminating turf from landscapes would be neither practical nor popular, so it is important to determine how to manage turfgrass areas most effectively.
The ‘Green Industry’ is the fastest growing sector of Colorado’s agricultural community and currently accounts for annual gross sales of $1.5-2.0 billion. (Colorado Green Industry Study, 1998)

Colorado’s economy gains from the estimated $600 million that homeowners spend annually on their lawns, and the additional $150 million that is spent to keep Colorado’s 30,000 acres of golf courses in top condition. (CSU Horticulture & Landscape Architecture Department, 2002)

The Payoff...

- Research has shown that grass clippings effectively and quickly return nutrients to turfgrass soils, reducing annual nitrogen requirements (from fertilizer) by as much as 30% to 50%. Clipping return does not contribute significantly to thatch accumulation, nor does it affect turf irrigation requirements. The majority of homeowners in Colorado now recycle grass clippings back onto their lawns.

- Colorado State University Cooperative Extension has found that polyacrylamide gels (popularly called “polymers” or “hydrogels”) as soil amendments do not reduce turfgrass water use rates or irrigation requirements and therefore practitioners in the golf, sports turf, lawn care, and landscape industries are encouraged to use soil amendments, such as organic matter, that are proven to be beneficial. A recent recommendation against hydrogel use saved an individual client approximately $25,000 on a large landscape project.

- Colorado State University’s participation in the National Turfgrass Evaluation Program has helped specialists identify turf species and cultivars that allow homeowners and professional turfgrass managers to reduce water use as well as other inputs (fertilization, mowing). The use of Mid-Atlantic Kentucky bluegrass cultivars in sod production is now standard in Colorado because they form deeper root systems than other bluegrass varieties and may require 10% to 20% less frequent irrigation than other bluegrass varieties.

- Research has shown perennial ryegrass to be more winter hardy (especially in Colorado) than recognized by the national turf community. Ryegrass was not widely used on golf courses prior to 1990, but it is now widely planted on new and existing golf courses and on high-quality sports turf throughout the state.