

# CUTT

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## Selecting Turfgrass For Low Maintenance Sites

**E**conomic and environmental concerns have convinced many turf professionals of the need to reduce turf management inputs. While high maintenance is often necessary on sports turf and highly visible residential, commercial and institutional lawns, there are many other sites that could require as much as 50 percent less fertilizer, water and mowing if the proper species and cultivars were established. ■

### Demonstration Trial

In 1992, Cornell Cooperative Extension of Monroe County began a demonstration trial that included readily available seed mixes and blends for low maintenance qualities. Local seed dealers were requested to submit low maintenance grass seed mixes or blends for evaluation. A total of eight were submitted, as listed in Table 1. Planting was done in late May. Standard seedbed preparation procedures were followed. Phosphorous was incorporated at a rate of 4 lbs. per 1000 sq. ft. A starter fertilizer was applied at seeding and again at six weeks after germination at a rate of 1 lb. of N per 1000 sq. ft. A portion of each plot was not treated with the second application of starter fertilizer. This was done to demonstrate the impact of a second application on seedling establishment.

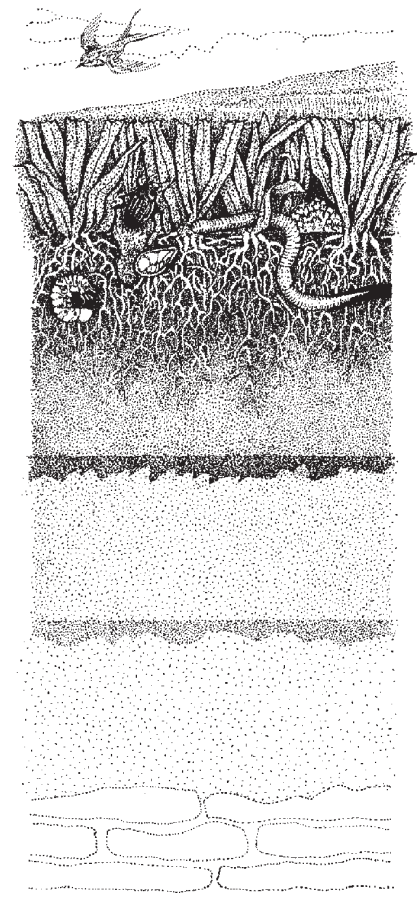
Areas receiving only the first fertilizer application established at a much slower rate. This resulted in reduced turf densities and increased weed infestations which were clearly evident 15 months after seeding. Optimal seedbed fertility levels, provided that other site conditions are favorable, are critical to successfully establish turfgrasses. While low maintenance grasses may require fewer inputs once they are established, they should not be neglected in the seedling stage.

### Reducing Costs

During the first season of growth, precipitation was abundant and temperatures were ideal for sustaining prolific growth. While it was not a good year to evaluate for drought tolerance, conditions were excellent to assess mowing needs. Of all management inputs, mowing can be the most expensive: costs can account for as much as 60% of a seasonal turf maintenance budget. If conditions are warm and wet, figures may range from \$150 per acre (72" mower, 3 mph, labor cost \$7.00 per hr.) to \$462 per acre (22" mower, 3 mph, labor cost \$7.00 per hr.). Large commercial, institutional or municipal grounds represent the lowest costs relative to higher cost sites like residential lawns and golf course greens. So besides mowing faster and using bigger mowing equipment, how can one reduce costs?

Slower growing species and cultivars are the best answer. When maintained properly, that is with reduced levels of nitrogen and irrigation, they will free up money in a turf management budget. In recent years, there have been tremendous improvements in some of the slower growing species including: chewings, sheeps and hard fescues.

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***In 1992, Cornell Cooperative Extension of Monroe County began a demonstration trial that included readily available seed mixes and blends for low maintenance qualities.***

***Of all management inputs, mowing can be the most expensive. So besides mowing faster and using bigger equipment, how can one reduce costs? Slower growing species and cultivars are the best answer.***

***Tall fescue and perennial ryegrass had the greatest mowing requirement.***

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## **Selecting Turfgrasses**

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Many cultivars of these now contain endophytes that give resistance to chinch bugs and sod webworms. Additionally, many cultivars have demonstrated resistance to important fine fescue diseases like: Drechslera leaf spot, red thread, pink patch and summer patch. While the fine fescues have reduced mowing needs, other species often grow vigorously and require as much as three times more mowing.

### **Trial Findings**

In our trial, it quickly became apparent that seed mixes containing perennial ryegrass had very fast growth rates. A mix of dwarf tall fescue was equally fast. Compared to the mixes exclusively containing fine fescues, these produced from two to three times the quantities of clippings. Figure 1. illustrates the average clipping yields, per mowing, for each mix. The highest yielding mixes would have required two mowings per week while the lowest would have required one mowing every nine days. Considering this, if mixes with the highest frequency cost \$150 per acre, the lowest would have cost about \$50. Combined with a need for only about one third of the fertilizer, the total savings would be about \$120/acre. If you were managing 100 acres, the total savings would add up to \$12,000 a season.

The results of this trial represent only one year of evaluation. While some of the mixes had relatively high clipping yields, the effect of dry conditions and low fertility will probably alter the composition of species and cultivars within each mix. The biggest question yet to be answered is whether the mixes containing perennial ryegrass will shift to higher proportions of fine fescues. This would reduce their mowing needs.

### **Recommendations**

There are many biotic and abiotic variables that impact seedling survival—including competition with themselves. After seeding, it is difficult to predict exactly what the final result will be. Given the quick germination and aggressive seedling nature of perennial ryegrasses, it would be prudent to at least minimize their percentages in low maintenance mixes. If a significant population of perennial ryegrasses are present, mowing needs will be high. Our blends of dwarf tall fescues and Kentucky bluegrasses also demonstrated high mowing needs. Considering this and the need for reduced fertilization and irrigation, mixes containing exclusively fine fescues are probably the best choice for low maintenance and/or ecologically sensitive sites. Since many communities are struggling with the solid waste disposal issue, seed mixes and blends should be evaluated for mowing needs.

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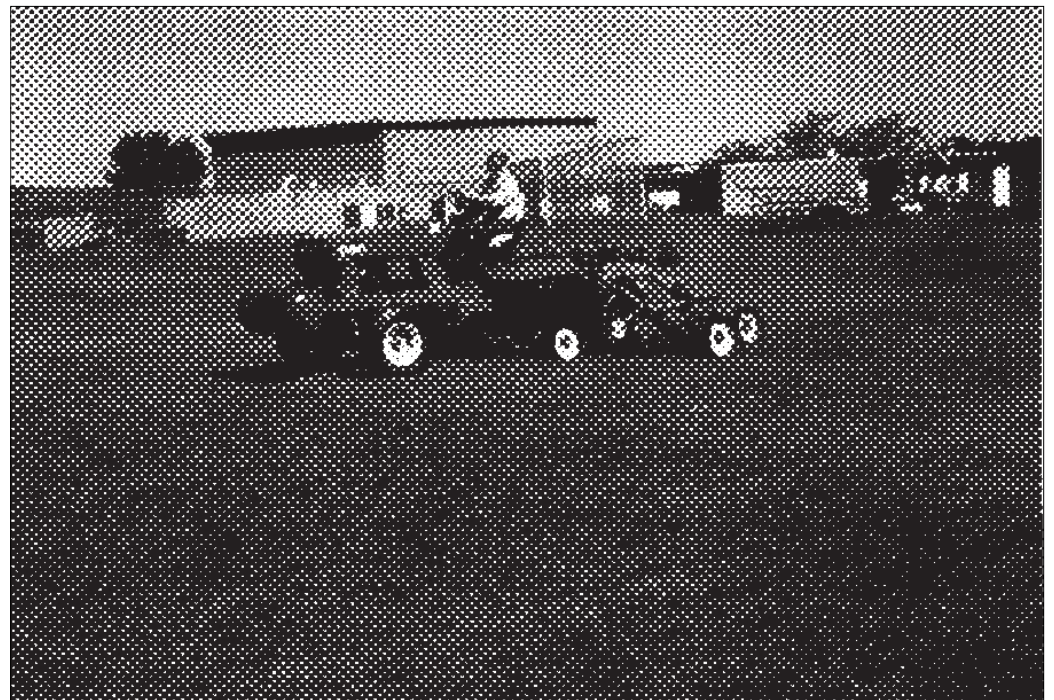


Table 1. Low maintenance turf mixes/blends.

Mix Name	Perennial Ryes	Kentucky Bluegrass	Tall Fescue	Fine Fescues			
				Sheeps	Chewings	Hard	Creeping
<b>Agriturf</b> Far Rough	Champion 19.81%	Touchdown 9.87%		Bighorn 29.26%		SR3000 39.59%	
<b>Agriturf</b> Safelawn/Crusader	SR4200 49.19%				SR5000 24.88%	SR3000 24.51%	
<b>Agway-Prolawn</b> Monroe County Low Maintenance Mix	Manhattan II 14.80%	Merit 14.85%			Koket 19.61%	Spartan 24.64% Aurora 24.44%	
<b>Scott's</b> Perfect Choice For Shade		Bristol 15% Coventry 15%			Banner 30%	Brigade 40%	
<b>Pennington</b> Drought Tolerant Bluegrass		Newport 43% Kenblue 43% Huntsville 9%					
<b>Lesco</b> Fine Fescue Links Blend				9.77%	Shadow 19.79%	Spartan 29.76%	Shademaster 39.64%
<b>Lesco</b> Compact Dwarf Tall Fescue Blend			Trailblazer 39.82% Trailblazer II 29.93% Shortstop 29.85%				
<b>Loft's</b> Ecosystems Ecology Mix					Jamestown 19.60%	Crystal 39.20% Reliant 39.20%	

*Given the quick germination and aggressive seedling nature of perennial ryes, it would be prudent to minimize their percentages in low maintenance mixes. If a significant population of perennial ryes are present, mowing needs will be high.*

*Mixes containing exclusively fine fescues are probably the best choice for low maintenance and/or ecologically sensitive sites.*

Figure 1. Low Maintenance Blends/Mixes Clipping Yields

