

# Cool Season Grasses

Cool season grasses actively grow in spring and fall, when the soil temperature is between 32 and 65 degrees Fahrenheit. Most cool season grasses that presently exist in Kentucky are European in origin; they include tall fescue, orchardgrass, timothy, and bluegrass. A few cool season grasses are native, the most prominent of which is redtop. These grasses are widely used for pasture/hayland renovation as well as soil and water conservation.

Unfortunately, past agricultural trends in Kentucky have produced a landscape dominated by fescue. Research has shown that fescue provides very poor habitat for wildlife, and creates problems for livestock as well. Eradication of fescue\* and replacement with other cool season grasses is beneficial for both wildlife enthusiasts and farmers alike. Financial or other assistance for establishing cool season grasses may be available; if interested, contact your local wildlife biologist for details.

Wildlife-friendly cool season grasses (orchardgrass, timothy, redtop) tend to grow in clumps that provide good cover for small game and nutritious (8-16% protein) forage for livestock while retaining enough bare ground to allow gamebird chicks to move freely in search of food. They are an integral part of a diverse plant community whose legumes (clover, birdsfoot trefoil, alfalfa, partridge pea, & annual lespedezas (Korean & Kobe)) provide abundant food and which in turn attract numerous insects important to young chicks as a source of protein in spring. Most cool season grasses are fairly short, growing to 3-4 feet in height. They are adapted to well-drained, fertile sites. Although they can tolerate occasional wetness, they usually cannot survive extended periods of flooding or soil saturation. They are also only moderately shade tolerant.



Figure 1. Mixed stand of cool season grasses and legumes.



*Most cool season grasses that presently exist in Kentucky are European in origin.*

## Site Preparation

Cool season grasses can be planted in spring (February – April) or fall (mid August – September). Preliminary work such as burning\*, haying/raking, mowing\*, or grazing may be necessary to eradicate thick grass and/or reduce tall vegetation prior to actual conversion. In fact, unless a field has been grazed or cut for hay regularly, burning will greatly aid in establishing cool season grasses by removing thick, matted grass, thereby resulting in a more effective treatment of the existing sod and less competition for new seedlings. However, be advised, Kentucky does have fire laws, regulated by the state Division of Forestry (800/866-0555). Basically, from February 15 through April 30 and from October 1 through December 15, you cannot burn within 150 feet of any woods or brushy area except between the hours of 6:00 p.m. and 6:00 a.m. local time. Prior to doing any burning you should consult with the Division of Forestry regarding regulations and techniques.

You should also notify the local fire department and adjoining landowners.

Once such preliminary work has been completed, grassy fields should be sprayed with Roundup® herbicide (2 qts/ac in 10 gallons water per acre plus surfactant) to kill fescue and other vegetation before seeding. Spraying should be done 1-2 weeks prior to planting on a warm, sunny day when vegetation is about 8 inches tall and actively growing (bright green).

Planting cool season grass into fields where row crops, such as corn and soybeans, have recently been planted and harvested is also a viable option. Regardless of the particular type of crop, the stubble should be mowed fairly short prior to planting. If using this approach, be cautious of potential residual effects of chemicals used to control weeds on the crop field in previous years because these may kill the grass seedlings.

## Seed Mixtures

Cool season grass plantings should consist of 1-2 species of grass, together with some legumes. Seeding rates and sample mixtures are listed at the end of this article. Note that lespedezas and partridge pea can only be planted in spring. Be sure to include an appropriate cover crop (temporary vegetation such as winter wheat (30 lbs/ac), spring oats (30 lbs/ac), or annual ryegrass (5 lbs/ac)).



*Figures 2 & 3. Orchardgrass stand and close-up of its seedhead.*







Figure 4. Mixed cool season grass stand.



*Research has shown that fescue provides very poor habitat for wildlife, and creates problems for livestock as well.*

### Planting Options

There are 3 basic ways to plant cool season grass. It can be drilled into a herbicide-treated stand of grass, drilled into a prepared seedbed, or broadcast seeded onto a bare seedbed. Drilling into a herbicide-treated stand of grass is simplest, usually results in less weed problems due to smothering by the same residual stand of grass, and eliminates the risk of soil erosion. However, seed-to-soil contact, and subsequent germination, may not be quite as good due to the residual stand of grass. Drilling into a prepared seedbed will likely result in better seed-to-soil contact and germination. However, it requires more field preparation and could result in more weed problems due to exposure of ungerminated seeds. Also, if planting on a slope, loose soil of a tilled seedbed could erode. Broadcast seeding eliminates the need for a no-till drill, but also requires extensive field preparation. In general, no-till seeding into a sprayed field is recommended for most situations.



Figure 5. Redtop is an excellent soil binder along waterways.



Figures 6 & 7. Timothy stand and close-up of seedhead.



## Planting Techniques

Cool season grasses should be planted 1/4-1/2 inch deep. Standard no-till grass drills suitable for such plantings can be rented from most farm stores or county Conservation Districts. As mentioned previously, broadcast seeding onto a prepared seedbed can also be effective. In those situations, plow, disk, and cultipack the site as necessary to prepare it. Then use a conventional cyclone seeder, a hand-held seeder, or an ATV/pick-up mounted seeder to plant the seed. Crisscross the field overlapping swaths and lightly drag, roll, or cultipack the site after broadcasting to cover the seed and enhance germination.

## Lime & Fertilizer

Cool season grass plantings should be limed and fertilized\* in accordance with a soil test. Aim for a pH of about 6.5, applying the lime several months prior to planting to allow time for it to become incorporated into the soil. Fertilizer can be added either at the time of planting or after seedlings have grown a few inches.

## Weed Control

Control of competing vegetation usually is not much of a problem on cool season grass stands. However, if problems do arise, several options are available. Pursuit® herbicide can be used on orchardgrass, clover, and lespedeza to control Johnsongrass and various broadleaf plants. If broadleaf plants are the only problem, 2, 4-D herbicide can be used without harming any grasses; however, it will kill legumes within the stand. Consult your local wildlife biologist or county Extension agent as needed for further guidance on the matter. Beware of limitations on herbicide rates for pasture/hayland and land enrolled in the Conservation Reserve Program. Be sure to follow label directions. Use of some herbicides is regulated and requires a special restricted use permit; check with your local farm store for details. If desired, prescribed burning may also be effective at controlling undesirable vegetation.

## Maintenance

Once established, cool season grasses, like all grasses, need to be maintained through periodic disturbance. Sometimes this may be achieved by moderate grazing\*. In other situations, they may be cut (no lower than 6 inches) for hay\*. Mowing of cool season grasses (and all grasses for that matter) for hay should be done when they are in the early boot or seedhead stage to capture maximum nutritional content. Unfortunately, such timing may coincide with the peak of nesting season for many types of wildlife. Consequently, you may wish to consider renovating some of your fields to native warm season grasses\*, most of which mature later in the year. By doing so, you can still obtain abundant, high-quality forage from your fields without having to disturb wildlife as much. If not being cut for hay or grazed, cool season grasses should be maintained by prescribed burning, strip disking, or mowing on a 3 year rotation. If desired, 15-25 foot wide strips of clover\* or annual grains\* can be established around the perimeter of your cool season grass stands in preparation for burning them at a later date.

*Wildlife-friendly cool season grasses, such as orchardgrass, tend to grow in clumps that provide good cover and nutritious forage while also allowing animals to move unhindered throughout the stand.*

**Table 1. Cool Season Grass Seeding Rates (Lbs/Ac)**

<u>Species</u>	<u>As Part of Mix</u>	<u>In Pure Stand</u>
Orchardgrass	6-10	10-15
Timothy	2-4	3-8
Redtop	2-4	3-6

**Table 2. Cool Season Grass Mixtures (with Legumes)**

<u>Mix #1</u>		<u>Mix #2</u>	
Orchardgrass	10 lbs/ac	Timothy	8 lbs/ac
White Clover	1 lb/ac	White Clover	1 lb/ac
Red Clover	4 lbs/ac	Red Clover	4 lbs/ac
Korean Lespedeza	5 lbs/ac	Korean Lespedeza	5 lbs/ac
<u>Mix #3</u>		<u>Mix #4</u>	
Orchardgrass	6 lbs/ac	Redtop	2 lbs/ac
Timothy	2 lbs/ac	Timothy	2 lbs/ac
White Clover	1 lb/ac	Korean Lespedeza	5 lbs/ac
Red Clover	4 lbs/ac		

Seeding Rates for other Legumes:

(use lower rates when planting multiple legumes with the grasses)

Kobe Lespedeza	5-10 lbs/ac
Partridge Pea	5-10 lbs/ac
Birdsfoot Trefoil	6-12 lbs/ac
Alfalfa	6-12 lbs/ac

## SUMMARY OF OPTIONS:

### Seed Mixture:

Orchardgrass, Timothy,  
Redtop

### Site Preparation:

Burning, Haying/Raking,  
Mowing, Grazing

### Herbicide Treatment:

Roundup

### Planting Technique:

No-Till Drilling into  
Herbicide-Treated Grass  
No-Till Drilling into Tilled  
Seedbed

Broadcast Seeding onto  
Tilled Seedbed

### Lime & Fertilizer:

Per Soil Test

### Maintenance:

Burning, Disking, Mowing,  
Haying/Raking, Grazing

### \*Related *Habitat How-To* references:

Prescribed Burning

Fescue Eradication

Soil Amendments

Grazing and Haying

Native Warm Season Grasses

Mowing

Legumes

Annual Grains

Note: Mention of trade names does not constitute an endorsement of specific products. Consult your local farm store regarding availability of equivalent herbicides.

*Photos courtesy of UK Cooperative Extension Service and Brian Clark (KDFWR Wildlife Biologist).*

### Planning for My Property



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