

Rye and Ryegrass: They Are Not the Same!

By: Dan Wells, Livestock Agent-NC Cooperative Extension, Johnston County



Ryegrass fully headed

Cereal Rye fully headed



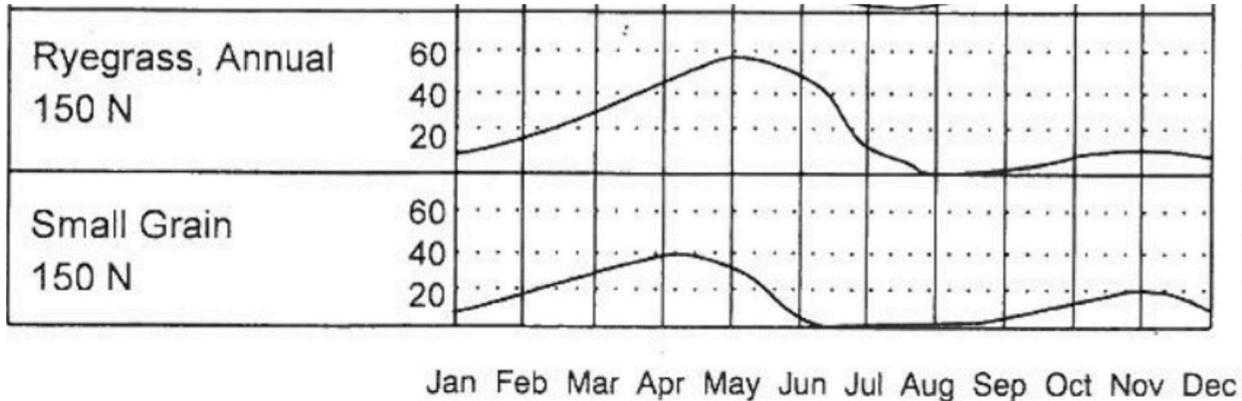
Often when we speak about winter annual forage grasses, we hear the terms “rye” and “ryegrass” and think they are interchangeable names for the same thing. In fact, this is far from true, as rye and ryegrass are two quite distinct species of grass. While both are capable of producing very high-quality forage, there are some distinct differences in seeding rate, growth and management that have to be considered to use them effectively. In their vegetative stages, both of these forages can contain 14% or more Crude Protein and over 60% Total Digestible Nutrients.

Cereal Rye (Latin name *Secale cereale*) is a small grain, similar to wheat. The grain of this grass can be picked and used to make rye bread, ground in animal feed or distilled for rye whiskey, among other uses. According to Purdue University, less than 50% of the Rye grown in the US is picked for grain, with the rest being used as a cover crop or for livestock forage.

Ryegrass (Latin name *Lolium multiflorum*) is a true grass. There are a large number of named varieties of ryegrass, and it is used to overseed warm-season turf to provide winter color as well as its use as a forage crop.

In NC, both these grasses can be seeded in the fall to provide winter/spring grazing. They can be seeded into a prepared seedbed or overseeded in perennial warm-season pastures such as bermudagrass. These grasses can be seeded as early as late August

in the mountains, and as late as November in the Piedmont and Coastal Plain. The seeding rates are quite different, however, largely due to the difference in seed size. Cereal Rye should be planted at 100-120 pounds per acre, while ryegrass only needs about 25-30 pounds.



The graph above displays some of the growth differences between ryegrass and the small grains, including Rye. The most notable differences are that Rye tends to produce a bit more growth in the late fall than ryegrass does, if both are planted by early fall. On the other end of the spectrum, ryegrass exhibits more growth in late spring and persists into hotter weather than Rye. These factors can be important in deciding how to use these forages.

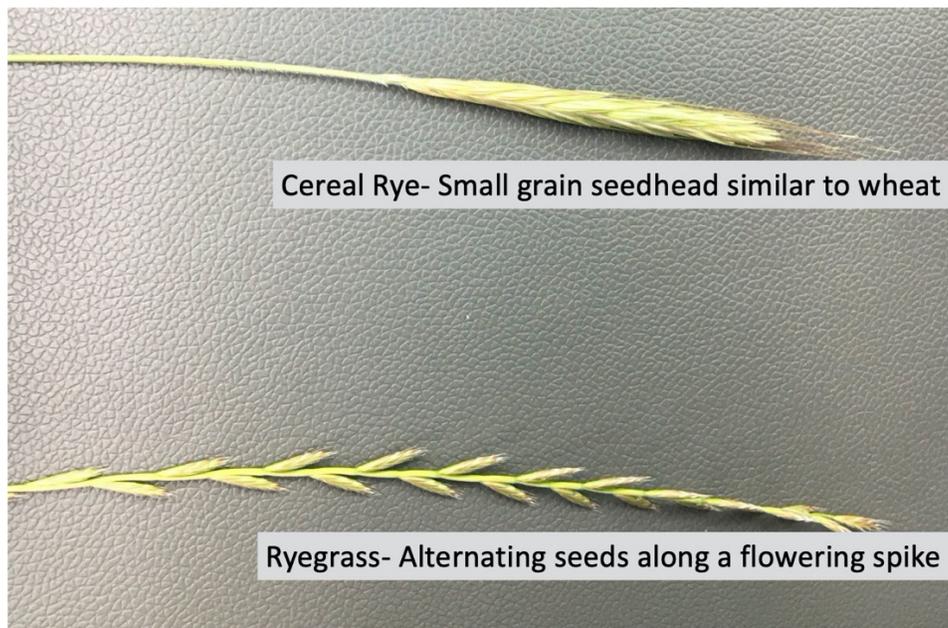
Rye begins to produce a seedhead and mature earlier in the spring, and this causes a rapid decline in forage quality as the plant directs nutrients into stiffening and elongating the flowering stem. This maturation is a huge influence on forage quality; as a plant goes further into the reproductive stage, the fiber concentration of the plant is increasing while the digestibility of energy and protein is decreasing. This can cause Rye to be of marginal forage value in late spring unless it has been mowed or rotationally grazed to try to force it to remain in a vegetative stage.

The effects of plant maturity apply to ryegrass, as well. However, ryegrass isn't quite as "stalky" in a mature stage as Rye. This results in ryegrass still having a higher leaf-stem ratio than Rye at a similar maturity. Leaf loss in ryegrass occurs much later than in Rye, allowing this plant to maintain useful forage quality later in the spring.

I certainly don't mean to imply that Rye has little value as a forage crop, or that ryegrass is superior in that regard. I defer to the typical Extension answer to those questions; "it depends." If you need forage availability between Thanksgiving and Christmas, Rye is much more likely to provide it. On the other hand, ryegrass reaches a grazeable height later, but also persists and holds quality later into the spring than Rye.



These plants can be somewhat difficult to differentiate during much of the growth stage. Ryegrass tends to have a shinier appearance to the leaves that is distinctive once you become familiar with it. They can also be distinguished by their different auricles, which are structures at the base of the leaves. Rye has short, rudimentary auricles while ryegrass has long auricles that overlap around the stem of the plant.



The flowering structures of these grasses are very different, and once they reach this stage it is possible to tell them apart from quite a distance. The seedhead of Rye looks much more like its cousins- wheat, barley and triticale. The seedhead of ryegrass is a long spike with individual seeds alternating left to right to the tip of the stem.

These two grasses are among many forage species grown by livestock producers in Johnston County and across our state. Careful management of these forage crops is

more complicated than it may seem at first glance, as attested by the contrast in these two very similar-seeming grasses. I hope this article has helped you to understand and appreciate some of the management and care that goes into growing our livestock.

All photos taken by the author.