

# Forages



## VARIETIES OF TALL FESCUE

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Tall fescue (*Festuca arundinacea*) is one of the most important cultivated forage grasses in the United States. It is grown on 35 million acres, but is particularly important to the mid and upper parts of the southeastern United States. Tall fescue is easy to establish, tolerates a wide range of climatic and soil conditions, including low pH and fertility levels, is tolerant to most pests, has a long season of productivity, and displays excellent persistence under a wide variety of grazing systems.

In 1931, Dr. E.N. Fergus selected plants from a field of tall fescue on the W.M. Suiter farm in Menifee county in eastern Kentucky. The variety was released in 1942 after several years of testing and named Kentucky-31 (Ky-31) after the year of selection.

Shortly after its commercial use began, producers noted that Ky-31 seemed to be unpalatable to cattle, especially in the summer or during hot weather. Animals frequently suffered symptoms, which have been referred to as summer syndrome, fescue foot, and more recently fescue toxicosis. Within the last few years scientists have determined that the source of the problem was an endophytic (internal) fungus. Since then a number of fungus-free varieties have been developed and released.

Potential yields and yield comparisons will be mentioned in the discussion of varieties. In all

cases these values assume good fertility, liming, adequate rainfall, and reasonable management.

### Kentucky-31 (Ky-31)

Ky-31 was the first developed variety of tall fescue. It is still commonly available. However, because of its long history of widespread use and seed production, there is great variability in Ky-31 tall fescue for leaf width, number of seedheads produced, color, and whether or not it is infected with the fungus. Most Ky-31 can produce 8,000 to 9,000 lb of dry matter per acre. Animal performance will vary to a great extent, depending on the degree of fungal infection in the pasture.

### A.U. Triumph

A.U. Triumph was developed at Auburn University from several tall fescue introductions from the Mediterranean area. This material was utilized in hopes of producing a variety that would have more winter production (be less dormant in the winter). Winter forage production of A.U. Triumph is generally 80 percent greater than Ky-31. This is an important consideration since winter is typically a time of hay feeding. A.U. Triumph is a fungus-free variety.

Fall forage production of A.U. Triumph has generally been equal to or greater than Ky-31. However,

late-spring forage production is less. In several years of testing in South Carolina, Georgia, North Carolina, and Alabama, A.U. Triumph has out-yielded Ky-31 by 5 to 10 percent. A.U. Triumph produces mature seed about two weeks earlier than Ky-31 and is more dormant in the summer. This variety persists and is as productive as Ky-31 under several intensities of cutting management. No winter survival problems have been reported in South Carolina. However, late-seeded A.U. Triumph in northern Alabama has been subject to some winter injury, though no problems have occurred with seedings which allowed good establishment prior to the onset of cold weather. Further, no winter injury has occurred in northern Alabama after the establishment year.

A.U. Triumph has similar forage quality to fungus-free Ky-31, but may produce slightly greater animal gains due to its better seasonal distribution of forage production. Animal gains have been better on A.U. Triumph than Ky-31 in direct relation to the percent fungal infection of the Ky-31.

## **Cajun**

Cajun is a selection from A.U. Triumph seed fields having more uniform maturity; that is, a greater proportion of the seed matures in a shorter period of time. Production and forage quality are approximately the same as A.U. Triumph.

## **Forager**

Forager tall fescue was released by FFR, Inc. in 1980 as a hay and pasture variety. Some experiment station publications may have data on this variety prior to 1980 under its experimental designation of FFR Syn I. Forager was produced by a breeding program that started with selections from several public varieties and plant introductions in West Lafayette, Indiana. This variety is adapted to about the same area as Ky-31 but matures about 7 to 10 days earlier. The two varieties have similar disease resistance. Forager has consistently been the highest yielding tall fescue variety in North Carolina tests for the past several years, generally producing 8,000 to 12,000 lb of dry forage, and one year producing 14,400 lb. In South Carolina the seedling vigor of Forager is about equal to Ky-31 and A.U. Triumph and yields are generally greater.

## **Johnstone**

Johnstone was developed in the early 1970's by the University of Kentucky and the USDA. It is not a true tall fescue variety as the previous types are, but rather is derived from a cross between tall fescue and annual and perennial ryegrasses. It was developed in an attempt to overcome the low feeding value of tall fescue. The variety has lower alkaloid content than Ky-31 and a low fungus level. Certified seed must have less than 5 percent fungus infection, and for this reason only certified seed should be purchased. Johnstone has the same area of adaptation as Ky-31 and should be adapted to all fescue areas in South Carolina.

Recent plantings in South Carolina have shown Johnstone to have less seedling vigor than Ky-31, Forager, or A.U. Triumph. Research in Kentucky has shown Johnstone to be about 2 percent more digestible than Ky-31 and 1 to 1.5 percent higher in crude protein. These studies also have shown Johnstone to be more palatable than Ky-31. Over several years in North Carolina, Johnstone has yielded about 30 percent less than Forager, about 8 percent less than Ky-31 and Triumph, and about 16 percent less than Kenhy. In Georgia, steers on Johnstone produced 50 percent better gains than steers on fungus-infested (80 percent infested) Ky-31 and 18 percent better gains than steers on low fungus (7 percent) Ky-31.

## **Kenhy**

Kenhy is a derivative from a cross between tall fescue and annual ryegrass released by the University of Kentucky and the USDA. It was the first variety from such a cross released. In general, Kenhy has characteristics similar to Johnstone and has performed much like Johnstone in South Carolina. The major difference is that Kenhy tends to be higher yielding. In North Carolina, Kenhy has produced about 14 percent higher yields than Johnstone over several years and about 8 percent more than Ky-31. Animal performance has been slightly less than for animals grazing Johnstone.

## **Alta and Goar**

These two varieties, along with Ky-31, represent the first three released varieties of tall fescue. Alta originated from ecotypes evaluated by the USDA and the Oregon Agricultural Experiment Station. In 1945 it became the first forage crop to be registered by the American Society of Agronomy. The variety is mainly planted in the Pacific Northwest and California. Goar was released and certified by the California Crop Improvement Association in 1946. Although it did enjoy some popularity in the Southeast, particularly Alabama in the late 1960's, it is very difficult to obtain seed now, and there are several better varieties available.

## **Fawn**

Fawn is a synthetic variety developed at the Oregon Experiment Station and released in 1964. It is one of the earliest maturing tall fescues and has produced 18 percent more forage than Ky-31 in the Willamette Valley of Oregon, where it is most adapted. The variety is susceptible to crown and leaf rust in the Southeast and is not recommended in South Carolina.

## **Kenwell**

Kenwell is another USDA - Kentucky Agricultural Experiment Station variety, released in 1965. It was selected for increased palatability but has no advantage over Ky-31 and very little seed is available.

## **Kenmont**

Kenmont was derived from a strain of tall fescue found in southeastern Kentucky, although it was released by the Montana Agricultural Experiment Station in 1963. In Montana, Kenmont produced more forage than Ky-31 and was more digestible. Little information is available on its adaptation to the Southeast.

## **Missouri-96**

Missouri-96 was released by the Missouri Agricultural Experiment Station in 1978 and was derived from seed collected in France. In three years of data in North Carolina, Missouri-96 yielded an average of 28 percent less than Forager. Missouri data has consistently shown better animal performance on Missouri-96 than on Kenhy, Kenmont, Fawn, or Ky-31. However, there is very little information on performance of this variety in the Southeast.

## **Mozark and Martin**

These varieties were also developed by the University of Missouri. Both have good disease resistance. A three-year trial in Georgia showed Martin to out-yield Kenwell, Fawn, Kenhy, Forager, and Ky-31. No other information is available for the Southeast.

## **Cattle Club and Pengrazer**

Cattle Club and Pengrazer are Ky-31 type tall fescues and have performed well in preliminary trials. More information will be available when they have been tested further.

## ***RECOMMENDATIONS***

Many varieties of tall fescue exist that are not mentioned above, but most are turf-type tall fescues, and care should be taken to not seed them for pasture plantings. The most important recommendation when buying tall fescue seed for pasture is to **BUY ONLY TESTED FUNGUS-FREE SEED**. Forager and A.U. Triumph have been fairly consistently the top-yielding varieties, although several other varieties yield only slightly less. A.U. Triumph will produce more uniformly over the year than Forager. Kenhy may produce a slightly better quality forage but will yield less than Forager. Johnstone may also produce slightly better quality forage but has lower yields than Forager and A.U. Triumph.