



Forage Management

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Orchardgrass and Tall Fescue Varieties

Perennial forages are the backbone of the cattle industry. Orchardgrass (*Dactylis glomerata*, L.) and tall fescue (*Festuca arundinacea*, Schreb.) are the two most important, commercially available forage grasses in West Virginia. These grasses have a longer life span than legumes and protect the soil from erosion and the legumes from winter injury. For hay production, the grass of choice in West Virginia is most often orchardgrass. However, where you want late-season grazing, tall fescue is the best grass to use.

The information in this fact sheet was obtained from variety trials in West Virginia, Virginia, Kentucky, and Pennsylvania. Comparisons are made on a relative yield basis. Relative yield is the yield of a variety in a given trial and year, divided by the average yield of all varieties in that trial and year. This is similar to the gain-on-test ratio of a bull, the test gain of the bull divided by the average gain of all contemporary bulls on test.

The relative yield of selected orchardgrass and endophyte-free tall fescue varieties over the region are presented in Tables 1 and 2. Varieties that were not present in four or more site years with above average performance are not presented. There were 52 site years for tall fescue and 44 site years for orchardgrass. In these trials the average hay yield per acre was 5.1 ± 1.5 for tall fescue and 4.8 ± 1.3 tons for orchardgrass. (The number after the \pm sign is the standard deviation or SD. The range of yield from the average minus the SD to the average plus the SD includes 66% of the observed variation in yield.)

The reliability of the average relative yield can be estimated from any one of three values in the table: site years, SD, or confidence interval (CI). The number of site years reflects the accuracy of the data since a variety with only four site years may have shown up

good those years but if it had been in other sites on other years it may not have done so well. The SD was explained previously. The CI is the SD statistically weighted for the number of site years the variety has been observed. The CI is the range about the average within which future measurements should average 19 out of 20 times.

Table 1. Relative yield of selected orchardgrass varieties reported in variety trials across West Virginia, Virginia, Kentucky, and Pennsylvania. A site year is one year's data from one experimental site (SD - standard deviation, CI - confidence interval).

Variety	Avg.	Site Years	SD	CI
Able	0.96	9	0.07	0.06
Ambassador	1.00	9	0.08	0.06
Benchmark	1.06	23	0.06	0.03
Boone	0.99	7	0.09	0.09
Crown	1.02	21	0.06	0.03
Dart	1.06	4	0.03	0.05
Dawn	0.97	16	0.13	0.07
Elsie	0.97	7	0.04	0.04
Hallmark	1.03	24	0.07	0.03
Hawk	1.02	6	0.04	0.04
Haymate	0.98	11	0.07	0.05
Justus	0.99	9	0.05	0.04
Latar	0.98	5	0.09	0.12
Pennlate	0.98	18	0.06	0.03
Potomac	1.00	25	0.04	0.02
Rancho	0.99	10	0.05	0.03
Rough Rider	0.96	7	0.07	0.06
Shawnee	0.94	12	0.07	0.04
Shiloh	1.04	30	0.05	0.02
Warrior	1.07	8	0.09	0.07

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Table 2. Relative yield of selected tall fescue varieties reported in variety trials across West Virginia, Virginia, Kentucky, and Pennsylvania. A site year is one year's data from one experimental site (SD - standard deviation, CI - confidence interval).

Variety	Avg.	Site Years	SD	CI
Advance	0.98	8	0.04	0.04
Barcel	0.97	11	0.08	0.05
Cajun	1.02	10	0.08	0.06
Cattle Club	0.98	23	0.06	0.03
Fawn	0.98	11	0.06	0.04
Festorina	1.02	15	0.07	0.04
Forager	1.01	23	0.06	0.03
Johnstone	0.97	45	0.06	0.02
KY 31 EF	1.02	9	0.11	0.09
KY 31 EI	1.01	43	0.07	0.02
Kenhy	1.01	18	0.06	0.03
Martin	0.99	19	0.06	0.03
Maximizer	0.97	4	0.07	0.10
Mozark	1.02	19	0.07	0.04
Phyter	1.02	21	0.05	0.02
Stargrazer	1.04	23	0.06	0.03

For orchardgrass, the relative yields were not affected by trial location. However, for tall fescue there was a variety by trial yield interaction. This means that the relative yield of some varieties was dependent on the trial's average yield. Some varieties had a positive interaction, when trial yields were high the variety ranked high and when trial yields were low the variety ranked low. Other varieties had a negative interaction, when trial yields were high the variety ranked low but when trial yields were low the variety ranked high. Cattle Club and Johnstone had a positive interaction of trial yield on their ranking among varieties. Cajun, Forager, Martin, and Mozark had a negative interaction. For the other varieties there was no or only a small interaction. Figures 1, 2, and 3 show the data and trend lines for Cattle Club, a variety with a positive interaction; Mozark, a variety with a negative interaction; and Phyter, a variety with no interaction, between trial average yield and variety ranking among tested varieties.

Late heading orchardgrass varieties produce pasture about a week later than early heading varieties. If making a planting on sites where you desire early grazing do not use a late heading variety. This also applies to tall fescue but the difference between varieties tested in West Virginia was not as great as for orchardgrass varieties. It appears that late heading orchardgrass varieties may also be less productive in the fall, but when mixed with legumes the legume compensated for the lower grass yield.

Selecting adapted grass and legume varieties is important when establishing a new forage seeding. This summary of regional variety trials shows that the variety of orchardgrass or endophyte-free tall fescue chosen will have less effect on forage production than the soil type or soil fertility and harvest management applied to the stand. Relative yields of varieties ranged within about 10 percent of the average for these grass species. Forage yields can vary by plus or minus 50 percent or more due to fertility, legume content, and harvest management. It is important that the proper management be used to obtain good yields from any forage variety planted.

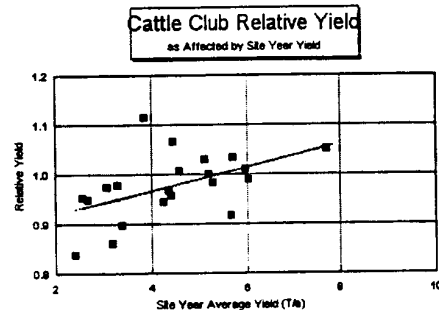


Figure 1

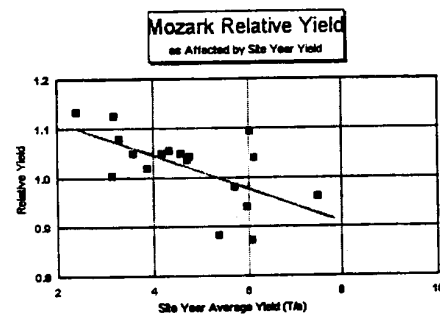


Figure 2

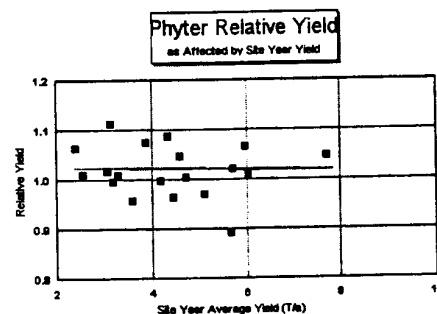


Figure 3