



Buffalograss for Use in Central Washington

WASHINGTON STATE UNIVERSITY EXTENSION FACT SHEET • FS095E

Buffalograss (*Buchloe dactyloides*) is a warm-season grass native to the Great Plains. This fact sheet was developed to give information to potential landscapers in central Washington as to whether it would be suitable to use in their landscape area. The Yakima Area Arboretum has a plot of buffalograss in their Xeric Garden, north of the Jewett Center Building and to the east of the maintenance and workshop area (Figure 1). Even though buffalograss is drought tolerant, it does not do well in shady or extremely sandy soils. This document will supply general information on how buffalograss might be used in central Washington where the grass is adapted.

Buffalograss was so named because it was the primary grass eaten by the great American bison that once roamed the Western plains. The prolonged droughts in the Great Plains have caused buffalograss to evolve with greater water-use efficiency, as well as adapting a greater sod-forming ability for survival. Buffalograss spreads by both seeds and stolons (above-ground lateral stems) and produces new plants at the nodes where they touch the soil.

Buffalograss is unusual because it is dioecious, which means that it produces male and female flowers on separate plants. The male flowers are about 4 to 8 inches in height and produce pollen. The female plants produce one or more inflorescences (flower heads) in the form of

burrs among the lower leaves of the plants close to ground. Male and female plants are shown in Figures 2 and 3, respectively.

Adaptation to Washington

To determine if buffalograss is a suitable turfgrass for central Washington, Dr. Gwen Stahnke, Extension Turfgrass Specialist for WSU, established the first set of test plots at the Yakima Area Arboretum in Yakima, Washington, over 15 years ago. Plots were also established in Pullman, Washington, but these did not survive, probably because of drying out over the winter. The loss of buffalograss in Pullman may have been due to winter desiccation. Because of the low soil temperatures for much of the year in western Washington, buffalograss is not recommended for planting there, since it is quickly outcompeted by cool-season grasses and weeds. To summarize regarding adaptability, buffalograsses are only suited for use in low- to moderately-maintained areas in central Washington.

Warm-season grasses typically begin their growth in late spring when soil temperatures are 55 to 60 degrees Fahrenheit, which usually occurs in late May in central Washington. Because it is a warm-season grass, buffalograss will begin to go dormant soon after the first frost. Buffalograss leaves are a soft gray to emerald green in color,



Figure 1. Buffalograss at Yakima Area Arboretum.



Figure 2. Male Buffalograss Anthers.



Figure 3. Female Buffalograss plant (courtesy of K. Amundsen, Univ. of Nebraska—Lincoln).

depending upon the cultivar. The leaves have many fine hairs along the leaf blades, which give the grass a softer green color. Notice the differences in gray-green color between the male and darker green female buffalograss plants in a lawn situation (Figure 4).

Establishment

As with any area where you want to establish a grass, proper preparation to relieve any compaction, the removal of perennial weeds that could compete with the new grass, and fertilization to insure that there is adequate nitrogen and phosphorus in the soil for establishment of new plants are critical to make sure the plants will persist. A soil test should be run to determine what nutrients are needed to grow grass successfully. Many soils in central Washington have adequate levels of potassium and phosphorus. If the soil test shows adequate potassium and phosphorus, an application of 1 lb. of nitrogen N/1000 sq. ft. should be applied at the time of seeding, plugging, or sodding.

Buffalograss performs well on many soil types, but does not do well on sands, areas that do not drain well, or in shady areas. A minimum time of 6 to 8 hours of sunlight per day is necessary for best growth. The best time to seed, plug, or sod is May to early August, since that is the time when the grass will spread the quickest, growing new roots and stolons. This is exactly the opposite of the cool-season grasses that are usually planted in central Washington, such as Kentucky bluegrasses or fine fescues. Cool-season grasses produce the majority of their roots in the spring and fall and lose root depth in the summer months because of the higher soil temperatures.

Seeding

Seed is available from cultivars having both male and female plants. The seeding rate for buffalograss should be 1 lb. /1000 sq. ft.. Always use seed that has been treated by being soaked in potassium nitrate. This acts like scarification on the seeds and breaks the dormancy of the seeds, allowing them to germinate within about nine days,

as opposed to almost a month without the seed treatment. Seeds should be planted no deeper than about ¼ inch. The price of buffalograss seed per pound is more expensive than cool-season grass seed (this varies), but it is seeded at a lower rate. Seeding is the quickest way to cover an area in central Washington and also to avoid weeds invading the bare areas that would be exposed while plugs are establishing themselves over several months.

Plugging

If the improved cultivar (a cultivated variety improved by selective plant breeding) you choose is only available as a vegetative plug (in other words, female plants only), the plugs should be pulled and then fertilized and watered in a greenhouse for at least four weeks to prevent a browning from immediate planting into the field. If pre-rooted vegetative plugs (those that have been put through this process already) are used for establishment, they should be spaced on 1-ft. centers for best results. Spacing can be wider, but the area will fill in more slowly and be susceptible to greater weed populations (Figure 5).

Improved Cultivars for Central Washington

Much of the research work done to create improved cultivars was done on golf courses, so many of the articles available for more information will reference that. A low-maintenance lawn is very similar to a golf course rough; therefore, this information is very relevant for our use. The supporting articles listed at the end of this fact sheet are there to provide more detailed information. The latest set of trials containing both seeded and vegetative cultivars from the University of Nebraska was also evaluated by Dr. Gwen Stahnke over the past two years. Of the seeded cultivars currently available, Bowie and Cody responded the best in trials. Of the vegetative cultivars, Legacy, Prestige, and 609 performed the best. Legacy is a male cultivar with prolific anthers, while Prestige is a female cultivar that produces seeds.



Figure 4. Left: Buffalograss Anthers (Males) and Right: Buffalograss Burrs (Female)



Figure 5. Buffalograss Plugs with Stolons Spreading

Watering

At establishment, the new seed or plugs should receive at least ½ inch of water. If natural rainfall is inadequate to supply this amount, irrigation will be needed. After the buffalograss is mature, it is best to soak the area once a month from July to September for lawns to remain green. If it is extremely dry in late fall, make sure to soak the soil before winter to prevent desiccation, or loss of water from the plants' cells, over the winter. If you have decided to let your grass go brown or dormant, and there is very little traffic on the area, you can water the buffalograss less or not at all after the initial establishment year. Buffalograss must be well-established with a developed root system before you stop watering completely. It has a higher resistance to drought stress than the cool-season grasses because it has both an extensive, deep root system and less leaf surface area.

Fertilizing

Buffalograss does not require as many nutrients as cool-season grasses to maintain coverage, especially if it is not highly trafficked. Once established, 1 lb. of N per 1,000 sq. ft. per year applied in mid- to late June is usually adequate. In the establishment year, another 1 lb. N per 1,000 sq. ft. should be applied in July or early August to encourage density of the grass. If you intend to use this as a natural area, the 1 lb. N per 1,000 sq. ft. will be enough nutrients for the grass for the year.

Mowing

Mowing height for maintained buffalograss lawn should be between 2 and 4 inches. Just as with cool-season grasses, it is best not to remove more than 30% of the leaf blade per mowing to maintain plant density. If you are making this a low-maintenance area, you may not have to mow it at all. Frequency of mowing will depend upon the amount of fertilizer and water that is applied. Clippings can be returned to the lawn.

Weeds

To avoid the establishment of weeds, do not irrigate frequently, do not mow the grass shorter than recommended, and do not over-fertilize. It is best to minimize watering in early summer to avoid high weed population development. When plants are in the seedling stage, or when the temperatures are above 90 degrees Fahrenheit, do not apply any products containing 2, 4-D, as buffalograss is very sensitive to this herbicide. When the buffalograss plants are mature, if undesirable plants are present in the stand, there are some herbicides that can be used to remove the weeds, but make sure to read the label on the herbicide to determine whether it is registered for use on buffalograss. Homeowners should go to WSU's HortSense website (<http://pep.wsu.edu/hortsense>). The weed must be identified before you make any herbicide application. Select the appropriate weed under the WEEDS heading on the HortSense website and it will list the options for control.

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