University of Kentucky
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Foxtail Millet

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Foxtail millet (German millet) is a fine-stemmed summer annual used mainly for emergency hay or pasture for cattle. It is the lowest yielding of the summer annual grasses since it will not regrow after cutting. It can also be used as a smoother crop when transitioning to other perennial forage crops. Foxtail millet is also commonly used for wildlife plantings to produce food and cover for doves, quail, and other birds.

Foxtail millet does not contain prussic acid, but does contain the glucoside setarian, a compound toxic to horses. In addition, seedheads from foxtail millet can become lodged in the horse's mouth resulting in physical damage. Therefore, the use of foxtail millet for horses is NOT recommended.

Foxtail millet is better adapted to more acid soils and soils with a lower water holding capacity than the sorghum species. For more information on soil types see AGR-217: "Determining Soil Texture by Feel." A pH of 5.5 to 6.5 is required for optimum production. Phosphorus and potassium should be applied according to soil test. For more details on fertilizing warm season forages like foxtail millet, see AGR-1 Lime and Nutrient Recommendations. In the absence of a soil test, apply 60-80 lb/A of P_2O_5 and 70-100 lb/A K_2O prior to seeding. Apply 60 to 80 lb/A of actual nitrogen at seeding.

Foxtail millet should be planted after there is no chance of frost and when the soil temperature has reached at least 65°F. It is more sensitive to cold stress than sorghum. It can be either conventionally or no-till seeded. Seed can be broadcast at rate of 20-30 lb/A onto a fine, but firm seedbed and then cultipacked to ensure good soil-seed contact. When seeding using a grain drill, reduce seeding rate to 15-20 lb/A. Seeding depth should be between 1/4 and 1/2 inch.

Foxtail millet will provide grazing or hay in 45 to 60 days after planting with good growing conditions. Since foxtail millets will not regrow, do not initiate grazing until the plant has reached a height of at least 18 inches. Harvest for hay at late boot to early head stage.

Nitrate poisoning. To avoid nitrate poisoning do not apply excessive amounts of nitrogen fertilizer or manure/poultry litter. Do not graze drought stressed or slow growing plants. For more information on nitrates, see ID-217: "Forage-related Cattle Disorders–Nitrate Poisoning."

Figure 1. Foxtail millet in head stage.

Foxtail Millet Facts

Common Name: Foxtail millet

Scientific Name: *Setaria italica*

Origin: Southern Asia

Growth Characteristics: Erect, leafy, annual grass that grows 2-5 feet tall

Adaptation: All of Kentucky

Major Uses: Emergency summer hay or pasture or smother crop

Drought Tolerance: Very good, better adapted to sandier soils than *sorghum* species

Soil Drainage: Well drained to somewhat poorly drained

Weight per Bushel: 50 pounds

Number of Seed per Pound: 215,000

Seeding Rate: 20-30 lb/A broadcast or 15-20 lb/A drilled

Seeding Date: When there is no chance of frost and when soil temperature is at least 65°F

Seeding Depth: ¼ to ½ inch

Time to First Grazing: 45-60 days

Expected Yield: Hay—1 to 3 tons DM per acre

Soil pH: Optimum pH is 5.5 to 6.5, better adapted to lower pH than *sorghum* species

Fertilization: Apply phosphorus and potassium according to soil test. Nitrogen, 60-80 lb/A at establishment

Seasonal Distribution: 90% of growth occurs 45 to 60 days after planting

Grazing Management: Start grazing when at least 18 inches tall. No regrowth will occur.

Hay or Wilted Silage Management: Cut when plants reach the late boot to early head stage. Use mower—conditioner to crush stems.

Forage Related Disorders: *Nitrate poisoning*. To avoid nitrate poisoning do not apply excessive amounts of nitrogen fertilizer. Do not graze drought stressed or slow growing plants. For more information on nitrates see ID-217: "Forage-related Cattle Disorders—Nitrate Poisoning."

Foxtail also contains the glucoside setarian, which is toxic to horses.