

FORAGE FACTS MF-2872

Management

Introduction

Despite the best plans, shortages of forage commonly occur some time during the year in Kansas. Drought, hail, early freeze, crop failure, harvest delays, and unusually cold and wet winters can cause forage shortages. In response, producers may choose to buy the extra forage needed or sell livestock. But in many cases, it may be more economical to use nontraditional for-

ages. The following table summarizes several options for obtaining forage from nontraditional sources or in emergency situations generated by an unexpected shortage of forage. In times of drought stress and when harvesting weeds as emergency forage, always test the crop for nitrate levels. High nitrate levels are toxic, and death loss can be high without proper feeding of forages high in nitrate.

Forage Source	Uses	Quality/ Livestock Performance	
		Crops	
Annual Legumes (winter: hairy vetch, Austrian winter pea; spring: spring pea, lentil; summer: cow pea, sunn hemp)	graze, hay, or ensile	good quality forage with crude protein up to 21 percent and TDN up to 57 percent if harvested by early bloom	Usually planted as cover crops. Can be planted in mixtures with cereals to improve yield and quality of cereal forage. Recently-developed sunn hemp varieties should have no toxic alkaloids and can produce significant biomass in a short time. Cut sunn hemp for hay rather than graze to avoid potential toxicity problems. Seed pods require longer to dry than stems and might delay curing slightly longer than plant material without seed pods.
Brassicas (canola, kale, rape, turnip, radish, turnip x Chinese cabbage crosses)	graze or hay	good quality forage with high digestibility, protein and energy content; low fiber content – provide additional roughage; when cut at early bloom, rape can have 24 percent crude protein and 75 percent TDN	Fast-growing, cool-season species with relatively high water requirement. Seed at 3 to 8 pounds per acre from mid- March through May for summer grazing, or June through August for fall and winter grazing. Begin grazing in about 45 to 60 days. When planted immediately after wheat harvest on irrigated ground, brassicas can make excellent forage for livestock during the summer.
Soybean	graze, hay, or ensile	good quality forage, comparable to alfalfa or clover hay	Pasture as soon as plants are 12 to 18 inches tall; remove livestock once most of the leaves have been eaten to allow regrowth for additional grazing in about a month. Cut for hay before pods are 1 inch long. Mix 1 ton of chopped soybeans with 2 to 4 tons of corn or sorghum forage to produce good silage.
Straw / Crop Residues (wheat, grain sorghum, or corn)	graze or hay	poor quality forage with low crude protein content (3.6 percent) and energy (TDN 41 percent)	Straw can be ammoniated to increase crude protein content, but effective ammoniation requires the straw to have high moisture content.

Forage Source	Uses	Quality/ Livestock Performance	Management Tips
Weeds			
Amaranth (redroot pigweed, Palmer amaranth, common waterhemp)	hay or silage	comparable to soybean or oat forage, inferior to sudangrass or sorghum-sudangrass for forage yield and protein content	Mature, drought-stressed amaranth forage can produce nitrate and oxalate toxicity, and the risk is higher when it is the sole source of feed. Ensiling the forage may help reduce nitrate concentration and improve digestibility.
Crabgrass	graze or hay	excellent – palatability of immature crabgrass comparable to native grasses	Allow to regrow when grazed or hayed to about 3 inches. Cut prior to maturity for optimum quality and to avoid spreading the seeds in the hay.
Johnsongrass (noxious weed)	graze; hay or silage at boot stage	similar to alfalfa in protein content and to timothy in feeding value; quality increases with fertility and decreases with maturity	Prussic acid poisoning can be a problem with grazing weather-stressed Johnsongrass, but it is generally not a problem with hay or silage. Because Johnsongrass is a noxious weed, it should not be allowed to produce seed.
Kochia (central and western Kansas)	graze, hay, or ensile	early stages of growth provide a low-fiber, high protein forage with protein content comparable to alfalfa; protein content ranges between 11 and 22 percent, and decreases as the plant matures	Even under extreme conditions, kochia should not comprise a major portion of the diet. Weight loss and oxalate toxicity symptoms have been reported in cattle grazing older, mature stands of kochia. Feeding calcium phosphate and other kinds of feed (such as alfalfa) tends to reduce oxalate toxicity. Animals with symptoms of oxalate toxicity should be removed from kochia immediately. Steers that graze kochia gain less than those grazing native grass pasture, but perform well when placed in the feedlot. Kochia requires a long curing time for baling.
Other Weeds (yellow foxtail, barnyardgrass, green foxtail, Pennsylvania smartweed, common lambsquarters)	graze or hay	palatable but variable quality	Nitrate toxicity may be a problem with common lambsquarters, barnyardgrass, and Pennsylvania smartweed. Common ragweed and velvetleaf are less palatable. Avoid unpalatable species such as giant foxtail, wild mustard, giant ragweed, common cocklebur; some may be toxic at certain growth stages.

Other Publications

Emergency and Supplemental Forages (MF-1073); Soybean Production Handbook (C-449); Great Plains Canola Production Handbook (MF-2734); Nitrate and Prussic Acid Toxicity in Forage — Causes, Prevention, and Feeding Management (MF1018)

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