

Short-term and Supplemental Forages

Beef cattle producers may look to short-term or temporary forages to stretch production on fewer acres.

by Iowa Beef Center staff

Nearly all short-term forage choices are fast-growing annual crops. Traditionally, the sorghums and millets have been planted for summer forage. Increasingly, cereal grains and forage “brassicas” are being planted for more fall, winter or spring forage. All of these vary greatly in size, regrowth potential, yield, feeding value, growing season, suitability for hay, grazing and silage, and toxic or anti-quality components. Think through what your needs are as you consider the various alternatives.

Cool-season annual grasses, cereals and brassicas

The following are considered to be cool-season crops. Although they most often are planted in early spring, many of them can be planted in late summer for autumn use.

► **Spring-planted oats, spring wheat and spring barley** can be cut or grazed at late-vegetative through early-milk stage for the best feeding value. With advancing seedhead maturity, stems greatly decrease in feeding value.

If these “spring cereals” are planted in mid- to late summer, they will remain mostly leafy and can be grazed in the fall. Some wheat and barley varieties have “beards” (awns) that, when mature, become fibrous and detract from feeding value.

► **Cereal or grain rye, winter wheat and winter triticale** (a cross of wheat and rye) can be planted in the late summer or fall for fall grazing. Or, they can be overwintered to be harvested or used for grazing in early spring.

► **Forage rape and forage turnips** are brassicas, members of the “mustard family.” They are annual, cool-season crops for grazing. They are normally planted in early spring, but they can be planted in late summer for autumn grazing. They are useable in about 45 days. Forage rape and “tyfon” (a leafy top-growth, mustard-type crop similar to forage rape) should be grazed rotationally. Forage (bulb) turnips should be strip-grazed for the most efficient use. The forage brassicas require nitrogen (N) for good production. They are used mostly by sheep producers.

► **Annual ryegrass**, which is also called Italian ryegrass, has very rapid seedling emergence and growth-to-seedhead formation. It has a high nutritive quality and does not overwinter in Iowa. If allowed to mature and shatter seed, it could grow as a volunteer plant in later years. It has become an annual grassy weed in small grains in some parts of the country.

Warm-season annual grasses: sorghums, millets

These are usually planted from mid-May through early July to be used for two to three months during summer and autumn. Most are ready for first harvest or grazing in about 50 days from emergence.

The most suitable for an alternative hay crop is foxtail millet, which will produce only one crop. Sudan grass and Japanese millet have larger, coarser stems, which makes them more difficult to harvest as dry hay. They are, however, better-suited for multiple silage harvests.

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► **Hybrid sorghum × Sudan grass and hybrid pearl millet** are multiple-cut, warm-season annuals. They are used

for fresh-cut forage, pasture (rotation grazing is recommended) or silage. Varieties vary greatly in height, leafiness and grain yield, depending on the parent lines that make up the hybrid.

Plant these mid-May through early-July. First growth is useable in about 50 days; regrowth is from tillers. Hydrocyanic acid poisoning (prussic acid) is a risk for hybrid sorghum × Sudan grass if plants or tillers are cut or grazed at a short height [less than 24 inches (in.)] or from a severely drought-damaged crop. Hybrid pearl millet grows somewhat slower than sorghum × Sudan grass hybrids and may grow poorly in cool summer seasons. The millets have no hydrocyanic acid poisoning risk.

► **Forage sorghum** is a tall, one-cut, warm-season annual best used for fresh-cut forage or stored as silage. Hydrocyanic acid poisoning is a risk if plants or tillers are cut or grazed at a short height (less than 30 in.) or from a severely drought-damaged crop. Grain sorghum/forage soybean mixtures can be planted from late spring through early summer for a silage crop. They are harvestable in about 60 days. They require good fertilization for production. Base harvest on the stage of the sorghum component.

Sorghums and millets can accumulate nitrates when growing during extended drought. Teff, or “summer lovegrass,” is relatively new to the Midwest and U.S. and is possible for an emergency summer grass hay crop. Teff is a warm-season, annual grass that has grown reasonably well in some Midwest locations. It establishes relatively quickly and is harvestable in 45-50 days, with multiple harvests possible. Seed sources are limited.

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Editor's Note: Iowa State University's Iowa Beef Center first published this series of fact sheets titled “Cows & Plows” in October 2007. The articles evaluated the management and economics of alternative feed and grazing systems in a time of skyrocketing land values and rental rates, soaring grain prices, and high feed and forage costs. While exact costs represented in the series may differ from today's even higher prices, the derived principles remain pertinent, if not more so.

Feeding & Feedstuffs

Table 1: Forage planting date, harvest date, yield and quality of annual forages

Crop	Planting date	Seeding rate	Maturity date	Yield (DM t/a)	% CP	RFV ^a
Winter rye	Sept.	1-2 bu.	mid-May	3-3.5	12-13	85-90
Winter wheat	Sept.	1½ bu.	late May	3-3.5	11-12	85-90
Winter triticale	Sept.	1-2 bu.	early June	3-3.5	11-12	85-90
Barley, sp triticale, sp wheat, oats	mid-April	1-2 bu. 2-3 oats	mid-June	2.5-3	12-13	100-110
Barley, sp triticale & peas, oats ^b	mid-April	1-2 bu. 2-3 oats	late-June	2.5-3	15-16	115-120
Wheat (spring)	mid-April	1½ bu.	early July	2.5-3	11-12	100-110
Forage sorghum	June 1	15-20	mid-Sept.	6-9	10-11	90-100
Forage sorghum	July 1	15-20	mid-Sept.	2-4	10-11	90-100
Sudan grass & Japanese millet	June 1	20-25	mid-July	3-5	11-13	90-100
Sudan grass & foxtail millet	July 1	20-25	mid-Aug.	2-3	11-13	90-100
Sorghum×Sudan hyb & hyb pearl	June 1	20-30	mid-July	4-6	12-14	90-100
Sorghum×Sudan hyb & hyb pearl	July 1	20-30	mid-Aug.	3-5	12-14	90-100
Grain sorghum & soybeans ^c	June 1		Sept.	6-7	11-12	95-110
Forage rape and turnip — tops Tops and roots	mid-June/July	3-6 lb.	Sept. Oct.	2-3 0.5	20-25 16-20	150-250 ----
Oats, barley, sp triticale	Aug.	1-2 bu. 2-3 oats	Oct.	1-2	10-11	140-150
Wheat (winter)	Aug.	1-2 bu.	Oct.	0.5-1	12-13	150-160
Mixed winter wheat & oats	Aug.	¾ bu. & 1-2 bu.	Oct. & May	3-5	10-13	100-120

^aRFV — Relative feed value, 100 equals approximately the digestibility and feed energy value of full-bloom alfalfa.

^bAdd about 50 lb. per acre of field peas to cereal grain.

^cAdd ¾ to 1½ bu. soybeans per acre to 10- to 15-lb.-per-acre sorghum.

Source: Steven Barnhart, Iowa State University Extension forage agronomist.