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Not All Forage is Alfalfa! New and New-For-Iowa Forage Crops

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Iowa producers grow and manage 40 to 50 different species of plants for forage, cover crops in row crop fields and as components of soil erosion control and buffer strip practices. The most commonly used are:

- Alfalfa
- Red Clover
- Alsike Clover
- White Clover
- Birdsfoot trefoil
- Smooth Bromegrass
- Orchardgrass
- Tall Fescue
- Reed Canarygrass
- Kentucky bluegrass
- Timothy
- Corn
- Switchgrass
- Big bluestem
- Oats
- Cereal Rye

Among these commonly used species, new varieties become available as genetic improvements are brought to the market place.

There are also several forage species, which are promoted and sold in Iowa that are not widely used, and some that are essentially ‘new-to-Iowa’. Information on adaptation and production management of these uncommon and new-to-Iowa species is often limited. Following are many of the new and unusual forage species that Iowa producers have been asking about in the last few years.

- **Annual Ryegrass** - *(Lolium multiflorum)* very rapid seedling emergence and growth; seedheads often form in seeding year, particularly the ‘Italian’ types of annual ryegrass’; high nutritive quality; does not generally overwinter in Iowa; if allowed to mature and shatter seed, could grow as volunteer plants in later years; has become an annual grassy weed in small grains in some parts of the country.

- **Perennial Ryegrass** - *(Lolium perenne L.)* a cool-season grass with relatively rapid seedling emergence and vegetative growth; high nutritive quality; most ‘forage-type’ varieties have been imported from Europe and Australia/New Zealand; ‘forage-type’ varieties often winterkill the first winter, the more promising ones with 15-40+% of plant survival. ‘Turf-type’ varieties have been developed in the US and show reasonably good winter survival but relatively low forage yield potential. Turf-type varieties often have ‘endophyte fungus’ concerns as with tall fescue.

- **Bermudagrass** *(Cynodon dactylon L.)* a warm-season grass, perennial in the south central and south eastern U.S. states. Most varieties are established, vegetatively, using ‘spriggs’; Bermudagrass spreads quickly to form a sod cover; very productive during the warm summer months; very responsive to nitrogen; can be used in pasture, or harvested and
stored as hay or silage. Iowa is not generally considered to be an area where Bermudagrass consistently over-winters. In recent years, the variety ‘World Feeder’ has been heavily advertised in the upper U.S. states. The variety has survived very recent mild winters, but it is not considered to be a long-term perennial in the northern states.

‘Prairie Grass’/Brome (‘Matua’) - (Bromus unioloides/B. willdenowii) Native to South America; the variety ‘Matua’ was selected in New Zealand and has been imported into the US; rapid growth; good nutritive quality; multiple cuts are possible; has not overwintered consistently in the Upper mid-west US – consider it to be an annual. Very closely related to rescuegrass (B. catharticus); rescuegrass grows as a winter annual in the U.S. southern plains; Prairie grass can shatter seed and could become a grassy weed.

Meadow Bromegrass - (Bromus riparius Roem. Schult) a perennial brome with good seedling vigor; limited research in Montana indicates a better regrowth pattern than smooth bromegrass; the variety ‘Regar’ was developed from a Turkish plant introduction; no Iowa production data is available.

Intermediate Wheatgrass - (Thinopyrum intermedium Host; Barkworth & Dewey) a vigorous, spreading, winterhardy grass; relatively rapid seedling development; likely to yield more in early stand development than smooth bromegrass; heads slightly later than smooth bromegrass; may have better late-summer and autumn regrowth than that of smooth bromegrass; Iowa research is limited.

Berseem Clover - (Trifolium alexandrinum L.) also called Egyptian clover; a fast growing clover used as a winter annual in the southern US; used as a summer annual legume in Iowa with multiple harvests possible; plants will winterkill in Iowa; less successful in dry seasons.

Kura Clover - (Trifolium ambiguum Bieb.) deep rooted, rhizomatous, potentially a long-lived perennial legume for pasture mixtures; has potential for hay, silage or pasture; seed production has been limited. Establishment is very slow. Bloat potential is expected to be similar to that of red clover.

Rhizomatous Birdsfoot trefoil - (Lotus corniculatus L.) A trefoil capable of spreading with rhizomes has been recently released; the variety is named ‘Steadfast’; seed supply is very limited.

Annual Lespedeza - (Kummerowia stipulacea -- Korean lespedeza ; and Kummerowia striata -- striate lespedeza) short, hardy legumes that tolerate lower pH and fertility than alfalfa or clovers; used successfully in pastures; produce best in mid- to late-summer; most varieties produce and shatter enough seed by autumn to ‘volunteer’ in later years. Though at least one variety was developed in Iowa in the 1940’s, most production is in southern Iowa, mid-south states. ‘Marion’ is the newest Midwest variety available.
Field Peas (often planted with oats or barley) – a short-season forage cover crop, planted in very early Spring; usually intended for silage harvest; the peas improve the protein content of the forage; harvest decisions should be made on the quality and yield of the oats or barley.

Forage Soybeans – historically, ‘Southern type’ varieties that grow vegetatively much of the season have been used in mixture with short, grain sorghums or corn to improve the protein content in silage of the mixed crop. USDA has released several new tall varieties for forage (silage), the variety ‘Derry’ is best suited for Iowa. The extra yield comes during the last 4-6 weeks of the growing season. Little or no viable seed develops.

Eastern Gamagrass - (Tripsacum dactyloides L.) tall, warm-season, perennial, bunchgrass; was a very minor component of the native, tall-grass prairie; has vegetative and regrowth characteristics similar to sorghumXsudangrass hybrids; highly palatable; very limited understanding of how to best establish it, and how much defoliation it will tolerate without losing vigor.

Foxtail Millet - (Setaria italica L., Beauv.) also called German, Siberian, or hay millet; annual, warm-season grass; used as harvested or grazed forage; one summer growth (vegetative 1-2 ft, with seedhead 2-3 ft); best of the ‘millets’ for an emergency hay crop; can become a weedy grass if allowed to produce mature seed.

Japanese Millet - (Echinochloa crus-galli var. frumentacea Link, Wight) a warm-season annual; relatively coarse (stemmy) forage; used as fresh cut forage, hay, silage, or pasture; very little regrowth if first growth is allowed to reach maturity - if cut at vegetative growth stage, regrowth yields are more likely; closely related to the grassy weed barnyard grass, so avoid allowing seed formation.

Hyb. Pearl Millet - (Pennisetum americanum L.) a multiple-cut, warm-season annual; used for fresh cut forage, silage, or pasture (rotation grazing is recommended if grazed); resembles sorghumXsudangrass hybrids in plant structure; somewhat slower regrowth than sorghumXsudangrass hybrids; poor production in cool summer seasons; no risk of hydrocyanic acid (Prussic acid) poisoning.

Cicer Milkvetch - (Astragalus cicer L.) a very winter-hardy, long-lived, spreading, non-bloating, legume; similar in nutritive value to alfalfa; has grown satisfactorily in Iowa but is more common in the western plains.

Forage Chicory - (Cichorium intybus) considered a perennial weed in many areas; is a palatable 'herb' in European mixed pastures; the variety 'Puna' was developed in and is being imported from New Zealand for a grazing forage; widely adapted; established relatively rapidly; multiple grazings per year are possible; the second year and later will produce seed stems which must be grazed or clipped to maintain leafy regrowth for grazing. Other varieties-from Uruguay and France- ‘Lecerta’ and ‘ForageFeast’ are available with varying flowering and winterhardiness traits. Chicory can persist on a site if allowed to produce viable seed and volunteer seedling establishment.