

Agronomy Agent's Corner #9

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Forage Legumes other than Alfalfa

Overuse of a crop leads to long term promotion of its pests and diseases. While disaster is frequently averted with breeding efforts and good IPM. A national scale failure of a crop is always a possibility. In the U.S., the corn leaf blight epidemic of 1970 was a large-scale agricultural disaster. In Ireland a combination of potato blight, economic abuses of the British empire, and overuse of a single crop led to the Great Famine. More recently much of Texas' grain sorghum crop was destroyed by the sugarcane aphid. Alfalfa is easily the most frequently used legume for hay. Some varieties of alfalfa can be grazed as well. To mitigate the damage caused by a large-scale failure of alfalfa, producers should include other legumes in their forage plan.

Birdsfoot Trefoil

Birdsfoot trefoil has a similar nutritional profile to alfalfa. Use of it will provide relative feed values and average daily gain numbers which are like alfalfa. Currently available birdsfoot varieties do not have the potential for the same production per acre as alfalfa. But up to the production potential of Birdsfoot, it uses the same water per ton of production as alfalfa. With limited irrigation either from conservation planning or mandated pumping restrictions, birdsfoot could produce the same value per acre as alfalfa.

Red Clover

Red clover is a biennial that is frequently mixed in pasture and hay with orchard grass. It is more tolerant of wet feet than alfalfa. This trait lends use of red clover to low spots under your pivot, areas with a shallow hard pan, or near creek bottoms. Red clover typically yields more tons per acre than ladino clover.

Crimson Clover

Crimson clover is an annual with up to 14% crude protein content at maturity (Young-Matthews, 2013). It can provide a rotation with wheat, sunflower, or millet. Do not use crimson clover in rotation with corn as it can host earworm. Crimson clover can be harvested for hay for horse until it forms barbed hairs. Hay used for cattle can be harvested later. Bloat is a concern with grazing immature crimson clover due to crude protein content in early growth of over 25% (Young-Matthews, 2013).

Pulses as a Forage (lupine, cowpea, garbanzo, soybean)

Many legumes which are frequently harvested for grain can be used as forages as well. To maximize the biomass produced by pulse crops choose varieties with longer maturities than would be appropriate for grain production in your area. This will keep the plants in vegetative growth until near the end of the growing season.

Each of these pulses bring their own limitations to production in our region. Soybean is not tolerant of iron deficiency. This trait requires either finding a patch of ground without alkaline soil to grow soybean or frequent foliar applications of iron. Lupine is not drought tolerant. To grow lupine in northeast Colorado will require the use of frequent irrigation. Chickpea is a perennial in its native region of the Mediterranean and near East. Due to a lack of cold hardiness (Mugabe et. al, 2019) it is grown as an

annual in North America. Cowpea has shown promise to be the pulse of choice here, but we are still early in the variety development process.

Works Cited

Mugabe, D., C.J. Coyne, J. Piaskowski, P. Zheng, Y. Ma, E. Landry, R. McGee, D. Main, G. Vandemark, H. Zhang, S. Abbo. 2019. Quantitative trait loci for cold tolerance in chickpea 59(2) P 573-582.

Young-Matthews, A. 2013. Plant guide for crimson clover (*Trifolium incarnatum*) USDA-Natural Resource Conservation Service, Plant Materials Center, Corvallis, OR.