



Perennial Legumes

Kura Clover

Illinois

General Information

Kura clover (*Trifolium ambiguum* Bieb.) is a relatively low-growing, persistent, winter-hardy, spreading perennial legume that has excellent potential for grazing. It is also called Caucasian, Pellett's, or honey clover and is native to the Caucasian region of Europe. Kura clover mixes well with the commonly grown cool-season, perennial grasses.

Varieties include Cossack, Endura, and Rhizo. In addition, much seed on the market is uncertified, "variety not stated".

Adaptability

Kura clover can often withstand poorly drained soils, soils with a high water table, and is better adapted to lower fertility and pH than alfalfa. However, it will be more productive and persistent if fertilized and grown at a soil pH of 6 to 7. Its fertility and pH requirements are very similar to those of red clover. Once established, it is adapted to frequent grazing or cutting.

Characteristics

Kura clover has a deep, branching taproot and produces rhizomes, which allow it to spread. The above ground portions are very leafy and high in feed value.

The main disadvantage is its slow establishment due to its pattern of development being different from other legumes. The seedlings germinate, emerge, and develop the first three true leaves at about the same rate as other legumes, but then leaf development slows and energy from photosynthesis is used for root and rhizome development. In addition, very few upright stems are formed the first year and thus its short stature makes it very susceptible to shading. It may take up to 2-3 years to get a vigorous stand.

Kura clover is susceptible to potato leafhopper injury and can induce bloat in ruminants. Because of these two characteristics and its low fiber, high protein and high moisture content, kura clover should be planted in mixture with cool-season perennial grasses. Grasses will also help keep the semi-prostrate legume upright.

Establishment

There are no "tricks" to establishing kura clover. The same steps recommended for the establishment of other legumes apply, but kura clover is less forgiving if these steps are not carefully followed.

Kura clover seed must be inoculated with strains of Rhizobia bacterium specific for the legume. Failure to put live Rhizobia in contact with young kura clover seedlings will result in certain failure of the stand.

Soil test a year before seeding so fertility and pH can be at the recommended levels. Perennial weeds, especially Canada thistle, need to be controlled a year prior to seeding.

In the spring, prepare a seedbed with appropriate tillage to provide a firm seedbed free of clods and weeds.

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Establishment *(continued)*

Kura clover has been successfully seeded into pastures with no-till strategies, provided the existing sod is killed with glyphosate (Roundup). It is best to apply glyphosate the previous fall and then no-till seed kura clover and the desired grass in the spring.

An option for no-till seeding is to use Gramoxone Extra (paraquat) to temporarily burn down existing grass in the spring and seed the kura clover immediately following. The existing grass will recover within 3 to 5 weeks and must then be controlled by grazing or clipping to minimize competition. This system will only work if summer rainfall is "normal" and if the grass regrowth is controlled.

Successful stands have been established with a seeding rate of 5 to 8 pounds per acre. If seedbed conditions are not ideal, use the higher rate. A shallow planting is important and the ideal depth is ¼ to 1 inch. Cultipacker seeders or drills with presswheels can be adjusted for proper sowing depth and packing to ensure good seed-to-soil contact.

University of Wisconsin researchers have successfully grown and maintained mixtures of kura clover with Kentucky bluegrass, smooth brome grass, orchardgrass, tall fescue, and reed canarygrass. The appropriate grass will depend upon soil conditions, the intended use of the mixture, and skill in managing some of the aggressive grasses.

Because of its relatively slow seedling development and sensitivity to competition from existing vegetation, frost seeding of kura clover is very risky and not suggested.

Management

As a result of having rhizomes, individual plants can spread from 6 to 12 inches per year after successful establishment.

Once established, greatest yields occur in the spring, less in the summer and fall. Forage yields in University of Minnesota and University of Wisconsin trials ranged from 2 to 6 tons per acre, with an average of about 4 tons per acre. Yield from seeding and second year in University of Illinois trials was 2 and 4 tons of dry matter per acre, respectively.

A recent University of Wisconsin grazing study found that pounds of beef per acre and average daily gain were 911 and 2.66 for kura clover-grass versus 714 and 2.27 for red clover-grass pastures, respectively. Stocking rate expressed as number of 600-pound steers per acre per day over the season was 2.3 for kura clover-grass and 2.0 for red clover-grass pastures. This translates into a 15% greater carrying capacity for the kura clover-grass pastures. In this study, the kura clover-grass mixture had average crude protein that ranged from 22 to 25%, average digestibility was 85%, and neutral detergent fiber ranged from 34 to 37%.

Summary

Kura clover may be an option for producers in the upper Midwest who need a persistent, winter-hardy legume. Management is critical in the establishment of this grazing tolerant, high quality forage crop. Once established, kura clover will tolerate much abuse and has persisted greater than 15 years in Wisconsin and Minnesota.

Where to Get Help

For more information about kura clover contact the local office of the Natural Resources Conservation Service or University of Illinois Extension.

Acknowledgements

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