Holstein steers show good gains on kura clover

Is kura clover a good legume choice in rotationally grazed pastures? A study conducted at the UW Lancaster Agricultural Research Station says yes, with excellent beef production on kura clover/grass pastures. Kura's persistence and leafy growth led to higher Holstein steer growth rates on kura/grass pastures than red clover/grass pastures.

“Both kura clover/grass and red clover/grass pastures provided excellent feed for the steers,” notes Francisco Mourino, UW-Madison graduate student in Agronomy, “but the kura clover/grass pastures consistently led to greater beef production.” Mourino worked with Ken Albrecht, also with the Agronomy Department, Dan Schaefer from Animal Sciences, and Arin Crooks, Assistant Station Superintendent, to evaluate the productivity of kura clover and red clover pastures when grazed by Holstein steers.

The study
From 1998 to 2000, the researchers turned 192 Holstein steers on two kura clover/grass and two red clover/grass pastures. Each year beginning in late April, each of the four pastures was stocked with 16 steers, weighing 450 pounds each. Grass in the pasture was a mix of smooth bromegrass, orchardgrass, reed canarygrass, Kentucky bluegrass, tall fescue, and others. Each six-acre pasture was subdivided into six one-acre paddocks. Researchers moved the steers every three to four days, making a complete cycle in 21 to 24 days. Over the growing season, researchers removed some steers from both systems to match stocking rate to pasture availability, therefore maintaining a uniform grazing pressure for each type of pasture.

The researchers managed for maximum beef production per acre. They recorded steer liveweight every 28 days and sampled quality and quantity of forage throughout the season. The researchers clipped the pastures to remove grass stems after the initial spring flush, usually after the second grazing.

Results
“In terms of animal performance, pasture productivity, and pasture quality, the kura clover/grass pastures outperformed the red clover/grass pastures in all three years,” says Mourino. Seasonal beef production (pounds/acre) and average daily gain (pounds/day) averaged 911 and 2.66 for kura clover/grass versus 714 and 2.27 for red clover/grass pastures. (See the graph on page 2.) Stocking rate expressed as number of 600-pound steers per acre per day over the season was 2.3 for kura clover/grass pastures and 2.0 for red clover/grass pastures. This represents a 15 percent greater carrying capacity for the kura clover/grass pastures.

“The kura clover/grass pastures in this study provided dairy quality feed,” says Albrecht. Season average crude protein ranged from 22 to 25 percent in these pastures, average digestibility was 85 percent, and neutral detergent fiber (NDF) ranged from 34 to 37 percent. Since NDF measures bulk, or fiber, lower percentages are more desirable. Forages with a high NDF cause animals to feel full and stop grazing sooner, leading to lower production.

Superior animal performance on mixed legume/grass pastures containing kura clover was associated with greater total forage yield and forage quality compared to red clover/grass pastures. “These results can largely be attributed to the fact that we were able to maintain 50 percent legume in our kura clover/grass pastures, leading to improved pasture and animal performance,” states Albrecht. The red clover/grass pastures contained 30 percent legume at most, and had to be re-seeded at a rate of three to six pounds per acre every spring. The kura clover/grass pastures did not require any re-seeding.

Kura persistence
What makes kura clover so persistent, especially compared to red clover? Kura clover has a massive rhizome (underground stem) system. When the
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The researchers wish to thank the UW-Madison Center for Integrated Agricultural Systems and Regional Research Project NC-157 for supporting this project.