

MU research: Sunn hemp benefits rotational grazing systems

COLUMBIA - Sunn hemp's vigorous growth makes it a great complement to cool-season forages, says Harley Naumann, University of Missouri forage physiologist.

Naumann's six-year research shows that the quick-growing summer annual provides a boost during summer slump in rotational grazing systems.

"Most pastures in Missouri are comprised primarily of endophyte tall fescue that are not productive during the hot summer months," says Valerie Tate, MU Extension field specialist in agronomy. "Sunn hemp is an excellent addition to a rotational grazing system."

Originally grown as a fiber crop, sunn hemp draws its name from its bright yellow flowers.

The legume grows as much as an inch per day in an upright growth habit. It reaches heights of up to 9 feet.

This tropical flowering plant thrives in warm weather. Its seeds do not germinate until soil temperatures reach 70 degrees, and this short-day plant dies at the first frost.

Sunn hemp provides a lot of bang for the buck, with high nutritional value and additional carrying capacity in pounds of live animals per acre. It offers 20-25% crude protein and is 90% digestible. It increased cattle gain per acre by 17%, according to Naumann's research.

Sunn hemp also produces and fixes significant amounts of nitrogen. According to USDA, it can produce more than 5,000 pounds of biomass and up to 100 pounds of nitrogen per acre. Grazing cattle recycle this nitrogen through their feces and urine. Unlike some other popular legumes, sunn hemp does not cause bloat in cattle. It tolerates dry conditions and low-fertility soils.

Sunn hemp also has another advantage that make it a wise choice in a well-managed forage system. "Sunn hemp can be drilled directly into tall fescue pastures without damaging existing stands," says Tate, who serves on the NRCS+MU Grasslands Project.

Broadcast or drill seeds at a rate of 30-40 pounds per acre. Naumann says 30 pounds



is "as good as 40 pounds." Additional seeding causes detrimental crowding. He recommends inoculating seeds with cowpea-type rhizobia bacteria for good nitrogen fixation. It competes well when interseeded with fescue and suppresses weeds.

Sunn hemp's strong regrowth ability is one of its best features. Grazing or clipping pushes hidden axillary buds to grow and branch out for more biomass. Graze plants when they reach heights of 1 1/2 to 3 feet.

Allow a 21-day rest period between grazing periods for best results, says Naumann. This depends upon the location and climate. Avoid letting plants overmature, he says. The stalks are less palatable than the leaves, which contain higher nutritive value. Cattle will graze down to a 12-inch stubble in rotational grazing systems.

Sunn hemp is a member of the genus *Crotalaria*. Its seeds are high in toxic pyrrolizidine alkaloids that can cause damage to some animals, especially pigs. Naumann recommends diluting the alkaloids by mixing other forages. "Dilution is the solution," he says.

Tate says that sunn hemp not only provides additional forage, it dilutes toxic endophyte in the diet of livestock. She also notes that sunn hemp adds diversity to wildlife systems. Wildlife, especially deer, enjoy its high-protein leaves.

For more information, see the USDA/NRCS guide to sunn hemp at plants.usda.gov/plantguide/pdf/pg_crju.pdf or visit the NRCS+MU Grasslands Project website at extension2.missouri.edu/programs/nrcs-mu-grasslands-project.

Mow high to keep weeds under control

COLUMBIA - Use your mower's highest setting for fewer weeds and lush grass.

University of Missouri Extension turf pathologist Lee Miller says mowing too low is a common mistake.

"We want your grass to be the trees of your lawn," he says. "Your feet should sink into the grass."

Miller says more than 10 separate studies since 1958 have found a direct correlation between mowing heights below 3.5 inches and substantial increases of weeds such as dandelion, white clover and crabgrass for tall fescue and Kentucky bluegrass lawns.

Mowing grasses to their optimal height—3 1/2 to 4 inches for tall fescue and Kentucky bluegrass, including mixes; and 1-2 inches for zoysiagrass—gives them a competitive advantage over weeds. Cutting high keeps sunlight and heat from weeds. As grasses grow, there is less room for weeds to grow. In short, a weed in need is a good thing.

"The current bank of weed seeds in your lawn needs sunlight to heat the soil surface for germination and aid young seedlings in growth," says Miller. "Growing Kentucky bluegrass or tall fescue tall robs them of sunlight and prevents weeds from establishing and competing for turf."

When weeds cannot grow, turfgrass

roots get more room to spread and become more dense. The more leaf a plant has now, the more sunlight it can harvest and the more food it can make for itself. When temperatures rise in summer, grasses face intense stress from heat, drought and disease. Giving grasses ample leaf tissue helps them withstand that stress.

For a healthier and more attractive lawn, never mow more than a third of the leaf and avoid clippings that clump, says Miller.

Mow often to avoid taking off too much at one time, but make sure the grass is actively growing when you do so. "We often see a lack of growth and turfgrass dormancy during drought and high temperatures," he says. "If it isn't growing, you shouldn't be mowing."

Conversely, take care when mowing after big rainstorms. Under the weight of a mower, saturated soils can rut and are more easily compacted.

Also, avoid "ring around the collar" trimming - cutting short in areas around roads, sidewalks and lawn margins. Scalped areas become a hot spot for weeds, particularly foxtails and crabgrass, which will soak up the extra heat from the asphalt and quickly outgrow scalped turfgrass.

For more lawn care information, visit MU's Integrated Pest Management website at ipm.missouri.edu.

Hitchhiking hammerhead worm kills native earthworms

Invasive species now found in Missouri.

COLUMBIA - Some Missouri gardeners are finding a new type of flatworm in landscape soils.

The hammerhead worm is a "voracious, top-level predator," says University of Missouri Extension horticulturist Kelly McGowan. "It will eat anything in its path," she says. It primarily feeds on native earthworms.

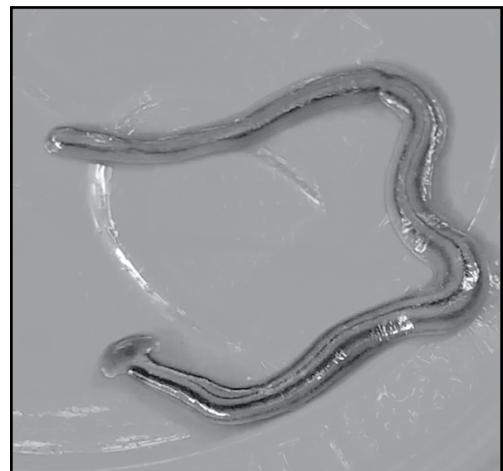
Not much is known about the hammerhead worm, which belongs to a family of flatworms called land planarians. The worm gets its nickname from the blunt shape of its head. McGowan says its effect on soil fertility and nutrient cycling remains unknown. It is soft and flat and bears striping in different colors. It likes dark, cool, moist areas and moves and feeds mostly at night.

Not only is it deadly to earthworms, it leaves a nasty trail of mucus and excrement that helps it glide along. It reproduces sexually by laying eggs and asexually by fragmenting and growing new heads and tails when cut into pieces. McGowan says the hammerhead worm likely hitchhiked to Missouri in potted nursery plants.

It is small and difficult to see in potting soil but can grow to several inches long. McGowan suggests putting the soil in a wheelbarrow and looking for the flat worms. No known treatments exist, but gardeners can rid the soil of these predators by heating the soil to 93 degrees for five minutes. They survive freezing temperatures.

It's one good quality is that it preys on slugs.

For more information, contact your local MU Extension center or follow Ask a Missouri Master Gardener on Facebook.



The invasive hammerhead worm feeds on native earthworms. Photo courtesy of Kelly McGowan.

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