Research Shows Multiple Benefits Of Switchgrass

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ROCKSPRING (Centre Co.) — Switchgrass grazes well, adds organic matter to the soil, helps stall global warming, and may be an effective source of ethanol.

Scientists with the USDA-Agricultural Research Service (ARS) at University Park offered tours of switchgrass research pastures during the recent Ag Progress Days to help get their message out on the benefits of this warm-season grass.

The relatively deep roots put down by switchgrass help sequester carbon in the soil, according to Curtis Dell, one of several USDA-ARS researchers who have been working with the grass in Pennsylvania.

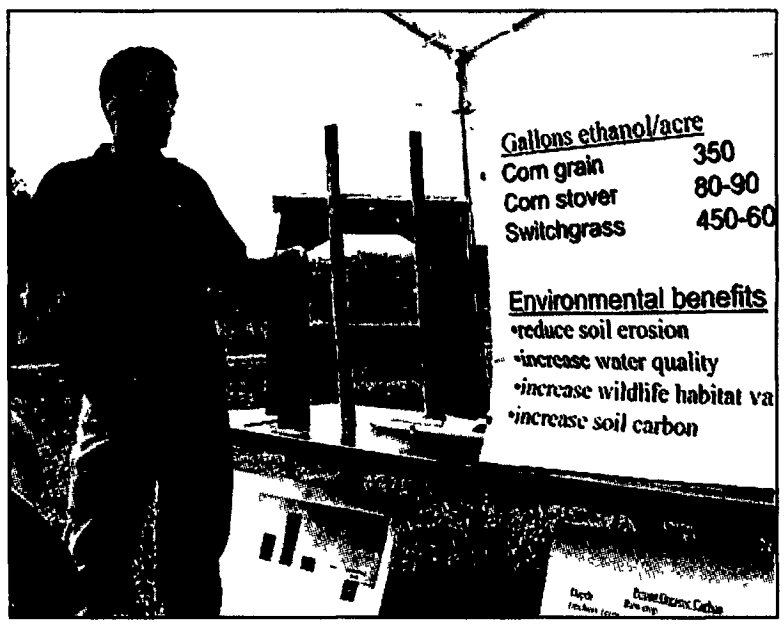
Dell, a soil scientist, showed soil samples comparing organic matter content in soils from 25-year switchgrass pastures to that of a conventionally tilled row crop field.

Dark-colored humus was evident to a deeper level in the switchgrass soil sample than in the the conventional tillage sample. In the first two inches of topsoil, the percentage of organic matter measured 2.84 in the switchgrass sample, compared to 1.99 in the other soil. At a six- to eight-inch depth, the switchgrass soil sample showed 1.30 percent organic matter, while the conventionally tilled soil measured 0.83 percent.

The carbon sequestering ability of switchgrass has benefits beyond improving soil fertility and structure, according to the researchers.

Howard Skinner, USDA-ARS plant ecologist, pointed out that switchgrass and other grasses may play a significant part in taking up extra greenhouse gases from the atmosphere.

Paul Adler, research agronomist, gave figures on the potential of using switchgrass as an ethanol source.



Paul Adler points out that switchgrass can potentially produce more ethanol per ton than corn. The process is being refined.

Curtis Dell shows soil samples from switchgrass pasture (right), versus soil from row crop conventional tillage. The accumulation of more organic matter is evident in the switchgrass sample.

"They walked right in, dropped their heads and haven't quit since." Kathy Soder, USDA-ARS pasture researcher, talks about the success of this switchgrass pasture plot grazed by five Angus heifers. ***Photos by Dave Lefever***

Switchgrass could produce 450-600 gallons of ethanol per acre, Adler said, compared to 350 gallons for corn grain, and 80-90 gallons for corn stover. The process is being refined for converting switchgrass to this environmentally-friendly, renewable energy source.

Kathy Soder, USDA-ARS animal scientist, has been working with five Angus heifers that were turned into a switchgrass research pasture earlier in the summer.

"They walked right in, dropped their heads, and haven't quit (grazing) since," Soder said.

Depending on the year, switchgrass can provide a protein percentage in the mid-teens for foraging livestock. This rainy summer, the switchgrass tested at 9.2 percent protein, Soder said.

Jim Cropper of the Natural Resources Conservation Service (NRCS), spoke on some of the growing specifics of switchgrass.

One key management practice is to cut or graze switchgrass relatively high, leaving six to eight inches of stubble, Cropper said.

Switchgrass needs a 30-day rest-period before a killing frost, similar to alfalfa.

Jana Malot, NRCS natural resources specialist, gave an update on the new Grassland Reserve Program (GRP), mandated under the 2002 Farm Bill.

The GRP offers funds to graziers for doing a good job maintaining working grasslands.

"We're not paying you to stop using land," Malot said. "We're paying you to keep using land in a very wise manner."

Cross-Fertilization Between Kazakhstan And Pennsylvania

SPRUCE CREEK (Huntingon Co.) — Hisa Akhmatov of Kazakhstan, Central Asia, left, receives a commendation plaque from Jim Eckert, chief of staff for Pennsylvania Senator Jake Corman (R-34) at the PFGC Annual Picnic Aug. 20.

Akhmatov, a former dairy farm manager in Kazakhstan, has been involved in the farmer-to-farmer program and numerous ag information exchange efforts between Pennsylvania farmers and his country during the past decade. John Rodgers, Belleville-area dairy farmer and longtime active PFGC member, has hosted Akhmatov and his colleagues over the years. Several dairy farmers from Asia joined Akhmatov and Rodgers at the picnic.

In his work with Taurus, Akhmatov has been instrumental in introducing U.S. dairy semen to Kazakhstan, a former Soviet Union country with an extremely cold climate. Most of the farms there are now privately operated, some of them quite large with "thousands of hectares," Akhmatov said. Dairies can have upward to 2,000 cows. Dehorning, total mixed rations, and artificial insemination are some of the management practices dairy farmers there have learned from the U.S.

"We give them knowledge of U.S. farming," Akhmatov said of his work in taking information back home. ***Photo by Dave Lefever***