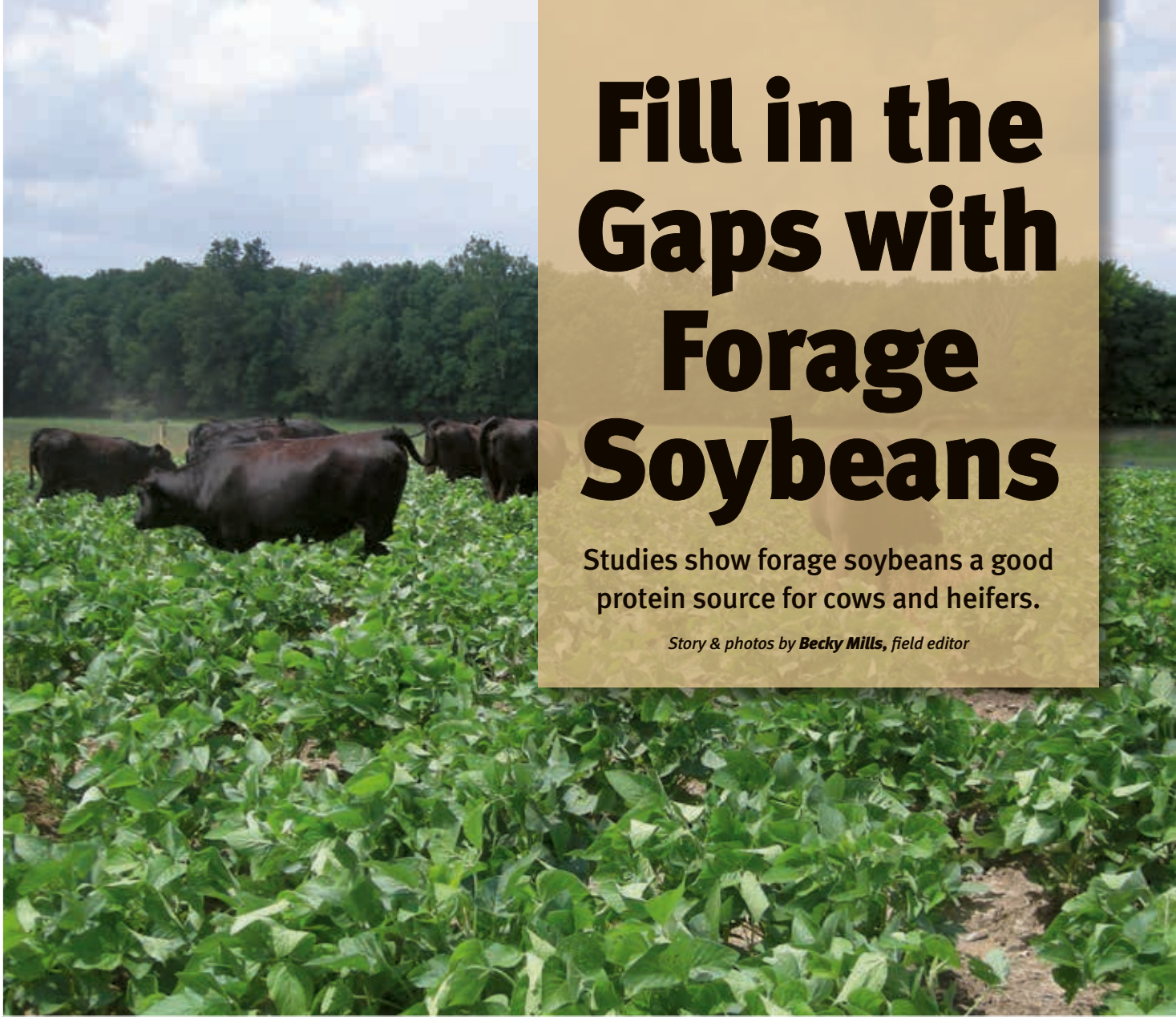

Fill in the Gaps with Forage Soybeans

Studies show forage soybeans a good protein source for cows and heifers.

Story & photos by ***Becky Mills,*** *field editor*

If you are one of those cattle producers with a passion for the forage-producing side of the business, you are probably already thinking about next year's grazing. Forage soybeans may be just what you need to boost the quality and quantity of your pastures.

At 20%-26% crude protein, the forage's protein level rivals that of alfalfa, says Southern Illinois University (SIU) animal scientist Rebecca Atkinson. "It will grow almost anywhere. I've talked to producers from Montana to Alabama who use it."

Benton, Ill., producer Ernie Duckworth included forage soybeans in his rotational grazing system for two years.

"The three-day rotation was great, and they recovered real well with a 30-day rest period," he says. "They performed as well or better than the pearl millet."

Duckworth has a sacrifice paddock where he feeds hay in the winter. The rest of his paddocks are in permanent pasture, specifically in Kentucky 31 fescue and volunteer white clover. Since the sacrifice paddock is usually chewed up from heavy use, he normally plants pearl millet in May. However, in 2009 and 2010 he planted it in forage beans instead.

> **"I like to look at things out of the box."**
> ***— Ernie Duckworth***

Grazing

"I like to look at things out of the box," he comments. That reputation led to his cooperation with Atkinson, via the recommendation of now-retired Illinois regional extension beef specialist Tom Saxe, on grazing forage soybeans.

"We drilled them in during late May. We included them in the second round of rotation at 45 days. I let them get 12 inches to 18 inches before I turned the cows in on them. We grazed them down to 4 inches to 6 inches," says Duckworth.

The cattleman divided his Angus-Simmental herd into two groups of 12 cows each. One group rotated through eight paddocks of fescue and clover, while the other group had seven paddocks of fescue and clover and one paddock of forage beans.

"The cows did real well on them," he reports. "We didn't have any bloat problems, although we did put out bloat blocks."

Atkinson notes that fescue and clover still made up 50%-75% of the paddock. "I think that's why we didn't have any problems with bloat."

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35 Keys to Success
Winter Feed Management

PHOTO BY REBECCA ATKINSON

►Benton, Ill., cattleman Ernie Duckworth says forage soybeans worked well in his rotational grazing system.

►SIU Animal Scientist Rebecca Atkinson says forage soybeans will grow almost anywhere.

Forage soybeans aren't just for grazing

Southern Illinois University (SIU) Animal Scientist Rebecca Atkinson has been working with forage soybeans since 2008 and found out early on that forage soybeans are tailor-made for silage.

"In our first study, we did agronomy plots to determine which variety yielded the most tonnage of the highest quality," she reports. "After 16 weeks of growth, some plots grew to 6 feet tall. The minimum was 4.9 feet."

She and her co-workers clipped the plots by hand at the 16-week mark and ensiled them in mini silos.

The yield per ton on a dry-matter (DM) basis ranged from 5.03 tons to 6.49 tons on normal-planted forage soybeans and 3.20 tons to 4.14 tons on double-cropped beans. Digestibility ranged from 67% to 71%.

"The heifers devoured it," she adds.

Atkinson says they tried to put up hay with the leftovers, but didn't cure it enough and all but one bale molded.

"You have to condition it more than alfalfa," she notes.

In the meantime, Indiana producers kept calling Atkinson for advice on forage soybeans, so she turned to veteran Purdue University animal scientist Ron Lemenager, who started his own trial.

"We used it as a harvested forage crop fed to a sensitive model, replacement heifers," he says. "It worked well as silage."

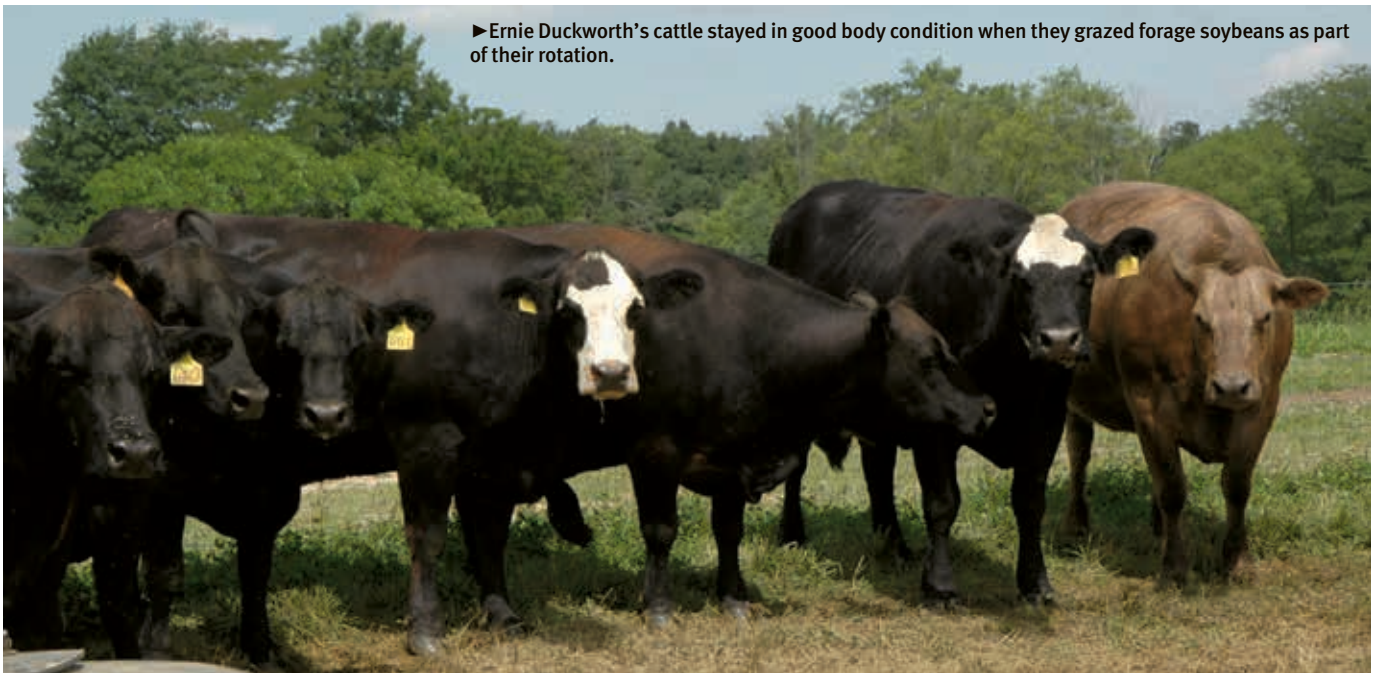
Lemenager and his co-workers used alfalfa silage as the control and compared it to both straight-forage soybeans and forage soybeans grown with pearl millet. All three were ensiled in Ag Bags.

Ninety Angus-Simmental heifers were used in the study. They started getting one of the three silages 65 days before they were scheduled for timed artificial insemination (TAI). They weighed an average of 800 pounds (lb.) and were in an average body condition score (BCS) of 5.5.

Twenty-one days after TAI, the heifers were commingled and put in a common pasture.

There was no real difference in the three groups in reproductive performance. Their final weight was 910 lb., the pregnancy rate from TAI was 48%, and the season-long pregnancy rate was 93%.

Lemenager says, "In this study, forage-soybean-based silages, with and without pearl millet, were an acceptable alternative for developing replacement heifers."



►Ernie Duckworth's cattle stayed in good body condition when they grazed forage soybeans as part of their rotation.

Fill in the Gaps with Forage Soybeans CONTINUED FROM PAGE 152

The second year, Atkinson also insisted on weighing the cows on and off the demonstration. She also asked Duckworth to take calf birth weights.

"Some literature suggests that excessive protein during the last trimester of pregnancy will increase birth weights and lead to calving problems," she explains. "I was nervous about putting his cows on it because they start calving in September."

Atkinson called Duckworth in October to check on how calving was going.

"He didn't have any problems," she says. "I think it was because of his intensive rotation. They were only on forage beans for three or four days at a time."

It was time enough to see an improvement.

"There was no summer slump with the cows that grazed the soybeans. With the cows that grazed all fescue, the weight gain was not as high, and they had a rougher hair coat," Atkinson reports.

Costs

As for costs, the forage beans can be a bit more expensive to plant than pearl millet. Atkinson compares the costs between Wonderleaf pearl millet and Big Fellow forage soybeans. The seed cost for pearl millet is currently $70 for a 50-pound (lb.) bag and the normal planting rate is 40 lb. per acre. In her area, it normally takes 70 lb. to 90 lb. of potassium (K) and phosphorus (P) fertilizer, as well as 65 units of nitrogen per acre, or approximately $96 an acre. Seed for

the forage beans runs $85-$90 for a 50-lb. bag. Seeding rate is around a bag per acre. They require less fertilizer than pearl millet — 40 lb. of phosphorus and 70 lb. of potassium, approximately $48 an acre.

"They don't need nitrogen. Just be sure to use the inoculant that comes with the bag," says Atkinson.

"After soil testing, if no fertilizer is needed, then pearl millet would be cheaper," she says, "but then you have to break down the nutrients, and forage soybeans have better forage quality after 12 weeks of growth."

In Duckworth's case, the only major drawback was weed control. He doesn't like to use herbicides, and the weeds launched a full-scale attack on the beans.

"The first year he had good rains and had three grazings before the weeds took them," Atkinson observes. "I think he could have done four grazings with weed control. The next year he got four grazings."

In his operation, Duckworth's winter sacrifice paddock recovered, grew back in fescue and clover, and is now back in his regular rotation. So, he doesn't need an annual grazing crop.

As for the forage soybeans, he says, "I'd recommend them."

Editor's Note: *Becky Mills is a cattlewoman and freelancer from Cuthbert, Ga.*