

Better Fat Profile

Study shows you can have your (beef) fat and eat it, too.

Story & photo by **Edith Chenault**

A recent Texas Agricultural Experiment Station study indicates cattle fed longer on certain diets will produce beef with more of the “good” kind of fat.

Stephen Smith, professor of animal science in College Station, says the study showed the longer cattle were fed corn, the more monounsaturated — and less saturated — fat they produced. Monounsaturated fats are currently viewed as being healthier than other dietary fats, Smith says.

In the United States, 8-month-old cattle are given a predominantly corn diet until they are harvested at about 1,200 pounds (lb.). With adequate rainfall and good pasture, producers sometimes background their cattle on pasture until they are 1 year old, Smith says. After that, they are fed a corn-based diet until they weigh about 1,200 lb.

“We’ve always had more corn in this country than we can consume, so we feed it to our livestock,” he explains.

U.S. consumers “like cattle young and marbled well” because of flavor, he says. Studies have found, however, that the marbling and trimmable fat from young cattle are high in saturated fats and trans fats.

Japan, on the other hand, feeds cattle more grass and forage in the beginning. Calves are weaned at 8-9 months of age. Producers then gradually increase the amount of grain in the diet until they are 28-30 months of age.

“They do it in steps,” Smith says. “At the end, they feed corn concentrate.”

Final findings

For the study, 16 American Wagyu and 16 Angus steers were purchased as weaned calves. Eight from each breed were fed a high-energy, corn-based diet. Eight were fed a diet of coastal Bermuda grass hay supplemented with a corn-based diet. The cattle were fed to 16-20 months of age (U.S. end point) or 24-28 months of age (Japanese end point).

The study tested three factors: breed type, diet and harvest-age end point. Of the three, harvest age had the greatest effect on the adipose tissue lipid composition, Smith says. (Lipids are organic compounds and include fats.)

In an earlier study, researchers found breed type did not affect marbling scores or the USDA quality grades for Angus and Wagyu steers. The corn-fed steers had higher marbling scores than hay-fed steers of both breeds, Smith says. Steers raised to the Japanese end point had higher marbling scores and USDA quality grades than those raised to the American end point.

In the latest study, the corn-fed Angus steers raised to the Japanese end point “accumulated adipose tissue lipids that were remarkably unsaturated,” according to the report.

Also, the adipose tissue from the Wagyu steers “contained higher concentrations of oleic acid and other monounsaturated fatty

Don't Bash Bahia grass

Story & photos by **Robert Burns**

Where coastal Bermuda grass is commonly called “the queen of forages,” Bahia grass is often considered the unwanted offspring. But in these times of expensive fertilizer, Bahia grass — in some areas, under some conditions — can be a wise addition to a forage program, says Gerald Evers, Texas Agricultural Experiment Station forage researcher.

Whether Bahia grass is an unwelcome guest or a valued addition to the family depends upon many factors, Evers says. Soils, available moisture and stocking rates all have to be considered. The degree of management the producer can afford plays a major role.

“Bahia grass primarily gets bashed because it invades Bermuda grass pastures if they haven’t been fertilized properly,” Evers says. “Another disadvantage is that it lacks drought tolerance compared to hybrid Bermuda grasses.”

Under drought conditions, Bermuda grass will stay green and continue to grow, where under the same conditions, Bahia grass will not grow at all, he says.

Despite its bad rap, Bahia grass shouldn’t

be bashed unconditionally, Evers says. It has its place with other forages.

One of its biggest advantages is that it will survive on sandy, acidic, infertile soils. As fertilizer prices increase, Bahia grass becomes more attractive, Evers says. “With little or no fertilizer, Bahia grass can be as productive as Bermuda grass — unless moisture is limited.”

If high fertilizer prices are coupled with low cattle prices, many producers may feel forced to cut back on fertilizer applications. The resulting low fertility can damage hybrid Bermuda grass stands.

“With Bermuda grass, you’ve got to apply some fertilizer every year to maintain the stand,” Evers explains. With Bahia grass, however, producers can go into a “holding pattern” until cattle markets are strong again. Given moderate amounts of fertilizer, a Bahia grass stand will make a good recovery after such a hiatus. Hybrid Bermuda grass pastures may be slow to come back or need to be resprigged if an annual fertility program is interrupted.

Bahia grass does best south of the Lufkin/Crockett area in East Texas for two reasons. First, the milder winter weather is beneficial

to Bahia grass, which is less cold-tolerant than Bermuda grass. Second, the ground is generally more level in that area, which means sandy soils are slower to dry out.

“North of that (region), the area is too sandy and drought-prone for good Bahia grass production,” he says.

In northern counties, Bahia grass may have success in some areas, as long as moisture is good, but Evers doesn’t recommend starting new stands.

“If they don’t have it already, they may not need to plant it, but (even north of Lufkin) producers can learn to manage it for better productivity.”

There are a few points to remember about Bahia grass, Evers says, including:

- ▶ When Bahia grass growth is less than four weeks old, its nutritive value is usually close to that of coastal Bermuda grass.
- ▶ Use limited fertilizer: 50-70 pounds (lb.) per acre per year, applied in the spring, is sufficient.
- ▶ Bahia grass forms a thick, tight sod that tolerates continuous grazing and makes it competitive with weeds.

acids, regardless of diet or end point,” the study reports.

“We’re not sure that the trans fat in beef, trans-vaccenic acid, is completely bad for you,” Smith says. “We need a human study [to determine that]. It may be completely benign.”

Smith and the other researchers theorized that when Angus and American Wagyu steers were fed to the normal U.S. standards, the amount of monounsaturated fatty acids and cholesterol of the adipose tissue — the connective tissue that stores cellular fat — would be similar. And the amounts would differ when fed to Japanese standards.

But they were proved wrong. Both breeds of steers produced more marbling and less trans and saturated fat the longer they were fed.

Wagyu cattle contribute only a small percentage to U.S. beef production. However, these results indicate that typical domestic cattle such as Angus can be raised to produce fat with a healthier composition, Smith says.

But what about completely grass-fed cattle? They have leaner carcasses, Smith says.

“The problem with (grass-fed cattle) is

the U.S. consumer isn’t accustomed to the flavor,” he continues. “It’s very strong, and it’s something we’re just not accustomed to. And the other [problem] is that the fat that’s produced from grass-fed cattle is higher in saturated fats and trans fatty acids.”

Cattle fed longer on corn will have a better flavor, more marbling and monounsaturated fats. But there is a trade-off.

“There are more calories there,” Smith explains. “There’s no question about that,

and if you’re watching your calories, grass-fed beef is lower in fat. And I can’t argue with that.”

The study was published in the international journal *Meat Science* this summer.



Editor’s Note: Edith Chenault is a news editor and Extension communications specialist for Texas A&M University Agricultural Communications, which supplied this article.



PHOTO BY EDITH CHENAULT

► Stephen Smith, Texas Agricultural Experiment Station professor of animal science, examines beef carcasses at the E.M. “Manny” Rosenthal Meat Science and Technology Center at Texas A&M University. A recent study at the station indicates cattle fed longer on corn will produce beef with more monounsaturated and less saturated fat.

► Bahia grass greens up earlier in the spring than Bermuda grass and stays green later in the fall, until temperatures drop to 29° F or below.

Variety test

Evers started a Bahia grass variety test at the Texas A&M University System

Agricultural Research and Extension Center at Overton in spring 2004. His goal was to compare new and experimental varieties with Pensacola Bahia grass under East Texas conditions. Evers used Pensacola as the standard because it is the most common, improved Bahia grass variety in East Texas.

He tested four varieties in addition to Pensacola:

- Rapid Germination Tifton 9, a new variety from Georgia not yet on the market;
- Tifton 9;
- Sand Mountain, an experimental variety from Alabama; and
- Argentine, a South American variety.

The first year’s tests were hindered by drought and weed competition. Evers continued the tests in 2005. Conditions were better than in 2004, but rainfall was still limited, with the Center weather station recording only 16 inches (in.) during the April through October growing season. (The average rainfall for the period is more than 25 in.).

Bahia grass yields ranged from 2,100 lb. of dry matter (DM) per acre for Pensacola to 3,400 lb. for Rapid Germination Tifton 9. Argentine yields were a little more than Pensacola, but not significantly so.

“Argentine production was probably limited by its lack of cold tolerance,” Evers concludes.



Editor’s Note: Robert Burns is an Extension communications specialist at the Texas A&M University Agricultural Research & Extension Center, Overton. This article was provided by Texas A&M University Agricultural Communications.



PHOTO BY ROBERT BURNS

► The biggest advantage of Bahia grass is that it will survive on sandy, acidic, infertile soils, says Gerald Evers, Texas Agricultural Experiment Station forage researcher.