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USDA Finds in Favor of Grass-Fed Cows

A study by USDA scientists finds that raising cows on grass, instead of in factory farms, produces fewer greenhouse-gas emissions and other pollutants.

By ^[3] June 27, 2011

Grass-fed cows are not only happier than confined cattle, USDA research shows they're better for the environment.

RODALE NEWS, WASHINGTON, DC—Perhaps a study conducted by the U.S. Department of Agriculture (USDA), entitled “Putting Dairy Cows Out to Pasture—An Environmental Plus,” won't put an end to the controversy over whether [cows raised outdoors on grass](#) ^[4] are better for the environment than cows raised on grain in confinement. But the USDA's findings on the matter are all the more remarkable considering that it's only in recent years that the agency has acknowledged there's a type of agriculture besides industrial agriculture, and it's called sustainable.

THE DETAILS: Unknown to most of the general public, there have, in fact, been Ag Dept scientists toiling away at experiments that confirm the value of sustainable agriculture, producing reports like “Pecan Growers Boost Revenue by Growing Organically,” and “Organic Cover Crops: More Seeds Means Fewer Weeds.”

Still, the research conducted about dairy cows may be the USDA's most controversial yet. In fact, both sides continue to argue about which method of raising cattle is better for the environment.

C. Alan Rotz, PhD, an agricultural engineer for the USDA's Agricultural Research Service at University Park, Pennsylvania, and an adjunct professor at Penn State, was the lead researcher for the dairy cows study. And he says he is “tired of all the criticism” about cows raised on pasture. “There's a place for grass-fed cows. There's nothing wrong with grass-based systems, and from an environmental point of view there are a lot of benefits,” he says.

According to the USDA's *Agricultural Research* magazine for May/June 2011, Rotz's peer-reviewed study, first published in a research journal in 2009, concludes that “a dairy cow living year-round in the great outdoors may leave a markedly smaller ecological hoofprint than her more sheltered sisters.”

To find out which system was best from a sustainable point of view, the researchers compared four methods of milk production: two with [confined cattle](#) ^[5], one producing 22,000 pounds of milk a year, another, 18,500 pounds, and a third in which the cows were on pasture for seven months a year, each cow producing 18,500 pounds of milk a year. The fourth group of cows was fed on pasture all year long, and produced almost 9,000 pounds less milk.

The study looked at the environmental problems each group of cows produced: ammonia emissions from manure, soil denitrification rates, nitrate leaching losses, soil erosion, and phosphorous losses from field runoff. Estimates for emission of carbon dioxide, methane, and nitrous oxide were also taken.

WHAT IT MEANS: Without getting into too much of the scientific mumbo jumbo, the results are pretty clear: Total emissions for greenhouse gases were 8 percent lower in the year-round outdoor systems than in either of the confined systems. Ammonia emissions were reduced by 30 percent.

Keeping cows outdoors reduced fuel use, as well as the carbon dioxide emissions from farm equipment. And one very important point: “When farmland is transitioned from rotated crops to perennial grassland, you can build up lots of carbon in the soil and substantially reduce your carbon footprint for 20 to 30 years,” said Rotz.

Raising cows in pasture is also good for water quality because of a huge drop in sediment erosion. The runoff of phosphorous also drops significantly.

Grass-fed cows aren't as efficient in producing milk, at least in terms of volume. Each confined cow produces 22,000 pounds of milk a year, while the pasture-raised cow produces only 13,000 pounds. However, the total amount of milk protein and fat in the milk produced was essentially the same, because “the foraging cows produced milk with far more fat and protein,” explains Rotz. Even more important in the argument, Rotz says, is that 130 grass-fed cows can produce the same amount of milk as 80 confined cows on the same amount of land. That's because amount of land needed to raise feed (grain) for the 80 confined

cows is the same as the amount of land needed for grazing 130 cows.

The study did not address the composition of the milk. Milk from grass-fed animals has much more of a type of unsaturated fat, called conjugated linoleic acid (CLA). Evidence is increasing that [CLA can protect the heart](#)^[6]. Milk from grass-fed cows also produces more omega-3 fatty acids (the reason people tell you to eat a lot of salmon) than that from cows fed grains.

The other side of the fence

A search for who disputes this study turns up at least one of the usual suspects: John Stossel, host of *Stossel* on the Fox Business Network cable channel. His career is based on being a naysayer, even when the facts say otherwise. He describes findings for grass-fed as “just another food myth.” He bases his disagreement with USDA's findings on the comments of Jude Capper, PhD, an assistant professor of dairy sciences at Washington State University. Writing in *Reason* magazine, he quotes Capper: “There’s a perception out there that grass-fed animals are frolicking in the sunshine, kicking their heels up full of joy and pleasure. What we actually found was from the land-use basis, from the energy, from water and, particularly, based on the carbon footprints, grass-fed is far worse than corn-fed.”

So, who’s right? It’s useful to keep in mind that Capper is coauthor of a paper that says the energy needed for grass-fed cattle is far greater than the energy needed for confined cattle. The paper was written with someone who works for Elanco, a company that supplies food and medicine to feedlots, also known as concentrated animal-feeding operations, or CAFOs. Unlike the USDA paper, it has not been published in a peer-reviewed journal. Instead, it was presented at a meeting of animal science people at which Elanco was described as a “platinum sponsor.”

To find milk from grass-fed cows, talk with a local farmer or look for [USDA-certified organic milk](#)^[7] at the supermarket. Double-check your brand with [the Cornucopia Institute's organic dairy rating list](#)^[8].

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