Feedstuffs
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Pros of modern beef production

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OVER the past 30 years, advances in productivity have reduced the carbon footprint and overall environmental impact of U.S. beef production, according to a new study Washington State University researcher Dr. Jude Capper presented during JAM 2010 in Denver, Colo.

Comparing the U.S. beef industry in 1977 and 2007, assistant professor of animal science Capper revealed that improvements in nutrition, management, growth rate and slaughter weights significantly reduced the environmental impact of modern beef production and improved its sustainability.

In fact, Capper said she found that it takes 431 days to finish a beef animal on grass but only 219 days in a feedlot. From an environmental impact standpoint, she said, "Feedlot production is better than grass fed."

"It's important to note that all food production has an environmental impact, but significant improvements in efficiency have clearly reduced the greenhouse gas emissions and overall environmental impact of beef production," Capper said.

"Contrary to the negative image often associated with modern farming, fulfilling the U.S. population's requirement for high-quality, nutrient-rich protein while improving environmental stewardship can only be achieved by using contemporary agricultural technologies and practices," she added.

Capper said finishing beef on grass rather than on corn in a feedlot takes 3.5 times more land. "We have the perception that feedlots are bad, and that just simply isn't true," she said.

In 2007, 13% fewer animals were slaughtered than in 1977 (33.8 million versus 38.7 million), but those animals produced 13% more beef (26.3 billion lb. of beef in 2007 versus 23.3 billion lb. in 1977). By producing more beef with fewer resources, Capper found that the total carbon footprint for beef production was reduced 18% from 1977 to 2007.

"As the global and national population increases, consumer demand for beef is going to continue to increase," Capper said. "The vital role of improved productivity and efficiency in reducing environmental impact must be conveyed to government, food retailers and consumers."

Compared to beef production in 1977, Capper found that each pound of beef produced in modern systems uses:

* 10% less feed energy;

* 20% fewer feedstuffs;

* 30% less land;

* 14% less water, and

* 9% less fossil fuel energy.

In addition, modern beef production produced 18% fewer total carbon emissions (methane, nitrous oxide and carbon dioxide) than in 1977.

To determine these numbers, a whole-system environmental model was used that integrated all resource inputs and waste outputs within the beef production system, from crop production to beef arriving at the slaughterhouse.

The project was supported by the beef checkoff program through a research grant from state beef councils in Iowa, Kansas, Nebraska, South Dakota and Washington.