Communicating Beef Production Sustainability – What Messages Resonate?

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Source: Created by Dr. Jude L. Capper, 2015
What is Sustainability?

Sustainable adjective

“Able to last or continue for a long time. “

Resilient
Strong
Adaptable
Continuous
Sustainability is not a Four-Letter Word

Source: Created by Dr. Jude L. Capper, 2014
Every beef production system can be sustainable
Every beef production system can be sustainable

Source: Created by Dr. Jude L. Capper, 2012
Every beef production system can be sustainable
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Source: Created by Dr. Jude L. Capper, 2013
Sustainable beef...

...does not just mean organic, natural or grass-fed...

Source: Created by Dr. Jude L. Capper, 2012
Beef sustainability means...

...turning sunshine into steak

Source: Created by Dr. Jude L. Capper, 2014; Photo from Ridder Hereford Ranch.
Activist Groups are Using Consumer-Friendly Metrics to Push Agendas

Source: Created by Dr. Jude L. Capper, 2012; Photo from: http://www.peta.org/b/thepetafiles/archive/2011/03/22/splish-splash-peta-s-takin-a-bath.aspx
Animal Agriculture Contributes a Small Proportion of the US Carbon Footprint

According to the US EPA (2012), meat production accounts for 2.1% of total greenhouse gas emissions.

IF EVERYBODY IN THE USA WENT MEATLESS EVERY MONDAY FOR AN ENTIRE YEAR...

...THE NATIONAL CARBON FOOTPRINT WOULD DECREASE BY LESS THAN 1/3 OF ONE PERCENT

Source: Design, wording and data copyright held by Dr. Jude L. Capper, 2012; Photo credit: svariophoto via http://iStockphoto.com
All Consumers Deserve a Choice

Reuben | Corned beef, gruyere, sauerkraut, Russian dressing on rye bread with mango-fennel slaw and pickles

Smoked Trout Po’boy | Butter, papitas, peppadews, marinated onions and smoked trout on herbed roll with Tim’s potato chip and black eyed pea, mango and papaya chutney

Caprése Baguette | Basil, tomato, fresh mozzarella, Olive oil, salt and pepper on baguette with caesar salad and kalamata olives

Mediterranean Pita (Vegan) | Roasted tomatoes, garbanzoes, artichoke hearts, kalamatas and arugula on herbed pita with corn chips and Muhammara

Without Animal Agriculture, What Would be the Carbon Cost of Sourcing Product Ingredients?
What Do These Industries Have in Common? They All Provide By-Products Fed to Animals
We Can Replace Meat and Dairy with Vegetable Proteins

But humans make methane too!

Source: Created by Dr. Jude L. Capper, 2014
Opportunities to Further Improve Beef Yield per Animal may be Limited

Beef Production/Cattle Slaughtered (lb)

Source: Created by Dr. Jude L. Capper, 2012; Data from USDA-NASS (2009) [http://www.nass.usda.gov/Data_and_Statistics/Quick_Stats/]
In 1977, it took five animals to produce the same amount of beef as four animals in 2007. 

1977: 3,045 Animal Days  

2007: 1,940 Animal Days  

Environmental Impact of U.S. Beef Production has been Reduced by Improved Productivity

The Herbivore’s Dilemma:
Is Grass-Fed Beef Better for the Planet?

“We have succeeded in industrializing the beef calf, transforming what was once a solar-powered ruminant into the very last thing we need: another fossil-fuel machine.” Michael Pollan, NY Times

Converting to Grass-Fed Beef Considerably Increases Animal Numbers

- Conventional: 800 lb carcass wt 444 d to slaughter
- Natural: 714 lb carcass wt 464 d to slaughter
- Grass-fed: 615 lb carcass wt 679 d to slaughter

*Animal refers to cows, calves, heifers, bulls, stockers and finishing animals

Created by Dr. Jude L. Capper, 2012. Based on whole-system analysis of effects of technology use on resource use and carbon emissions in four beef production systems with technology adoption at 100% wherever used.
If the Entire U.S. Beef Industry Converted to Grass-Finished Beef, We’d Need...

<table>
<thead>
<tr>
<th>Land</th>
<th>Water</th>
<th>Carbon</th>
</tr>
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<tbody>
<tr>
<td>131 mil ac.</td>
<td>468 bil gal.</td>
<td>135 mil t.</td>
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Extra Resources to Produce 26.1 billion lbs beef

Source: Created by Dr. Jude L. Capper, 2013. Based on whole-system analysis of effects of technology use on resource use and carbon emissions in four beef production systems; at 100% calving rate and with technology adoption at 100% wherever used savings compared to a system without implant or beta-agonist use.
Hormones are Portrayed as a Human Health Threat

Source: Created by Dr. Jude L. Capper, 2012; Photo from: http://www.adrants.com/images/bovine_udder.jpg
Hormones in Food are Undesirable, Yet Lifestyle-Related Hormones are Acceptable

One 8 oz steak from an non-implanted animal contains 3.5 ng of estrogen, one from an implanted animal contains 5.1 ng estrogen

One birth control pill = 35,000 ng

Source: Created by Dr. Jude L. Capper, 2012; Data from Smith, G. 2010. RMC.
Growth-Enhancing Technologies Reduce Beef’s Environmental Impact by **10.7%**

<table>
<thead>
<tr>
<th>Feed</th>
<th>Land</th>
<th>Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>4.2 Tons</td>
<td>1.0 Acres</td>
<td>22,722 Gal.</td>
</tr>
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*Resources Saved per 800 lb Carcass*

Created by Dr. Jude L. Capper, 2012. Based on whole-system analysis of effects of technology use on resource use and carbon emissions in four beef production systems; with technology adoption at 100% wherever used savings compared to a system without implants or beta-agonist use.
One in Seven Children Does Not Have Enough Food

We care about feeding the world... but we care more about our children and families than those in far-off countries.

Source: Created by Dr. Jude L. Capper, 2014
Technology Use Has Positive Social Sustainability Impacts

Extra Beef from Implants and β-Agonists on a Single Carcass Will Supply **Seven** Children with School Lunches for a Whole Year

Source: Created by Dr. Jude L. Capper, 2013. Data from Capper, J. L. 2013. The Environmental and Economic Impact of Steroid Implant and Beta-Adrenergic Agonist Use Within U.S. Beef Production. ADSA/ASAS Annual Meeting, 2013, Indianapolis, IN.
Ranchers’ Biggest Livestock-Based Influence on Economics May Be Through Calving Rate

Source: Created by Dr. Jude L. Capper, 2013. Based on whole-system analysis of effects of calving rate on resource use, carbon emissions and economic cost of U.S. beef production
Ranchers’ Biggest Influence on Environmental Sustainability May Be Through Calving Rate

Source: Created by Dr. Jude L. Capper, 2013. Data from Capper, J. L. 2013. The environmental and economic impact of calving rate within U.S. beef production. ADSA-ASAS Annual Meeting, 2013, Indianapolis, IN
Ranchers’ Biggest Influence on Environmental Sustainability May Be Through Calving Rate

US calving rate of 90%

= 6.7% more cattle
8.1% more land
5.2% more water per lb of beef

Source: Created by Dr. Jude L. Capper, 2013. Data from Capper, J. L. 2013. The environmental and economic impact of calving rate within U.S. beef production. ADSA-ASAS Annual Meeting, 2013, Indianapolis, IN
Withdrawing Effective Parasite Control Reduces Performance

Fenbendazole withdrawal reduced pregnancy rate (81% vs. 91%), weaning weight (500 lb vs. 547 lb) and ADG (2.43 lb/d vs. 2.89 lb/d)

Source: Created by Dr. Jude L. Capper, 2014. Data from Capper, L. L. 2013. The environmental and economic sustainability impact of withdrawing parasite control (Fenbendazole) from traditional U.S. beef production systems. ADSA/ASAS Annual Meeting, 2013, Indianapolis, IN.
With withdrawing effective parasite control, increases economic and environmental impact.

Index of positive control (=100)

- Animals: 118%
- Land: 116%
- Water: 115%
- Fossil Fuels: 107%
- GHG: 113%
- Economics: 112%

With Fenbendazole = 100

Source: Created by Dr. Jude L. Capper, 2013. Data from Capper, J. L. 2013. The environmental and economic sustainability impact of withdrawing parasite control (Fenbendazole) from traditional U.S. beef production systems. ADSA/ASAS Annual Meeting, 2013, Indianapolis, IN.
Effective Parasite Control Has a Positive Impact on Social Sustainability

Extra beef produced via effective parasite control in a 40-cow herd supplies 19 families with their annual beef demand.

Source: Created by Dr. Jude L. Capper, 2013
Agricultural Reality Doesn’t Tie in with Consumer Perceptions

53% of consumers believe that the majority of today’s farms are “Large, corporate-owned factory farms”
Consumers Trust Friends/Family, Government and Farmers/Ranchers

66% Friends/Family
59% USDA
57% FDA
57% Medics
53% Farmers/Ranchers
51% Academics

Source: Created by Dr. Jude L. Capper, 2013. Data from Sullivan, Higdon & Sink (2013) “Building Trust in What We Eat.”
http://www.shsfoodthink.com
A state with 1.5 beef cows per person...

...producing enough BEEF to feed 13.2 million people each year...

...Montana.
It's cattle country.

Source: Created by Dr. Jude L. Capper, 2014
Sustainability is not a “bad” word.

Source: Created by Dr. Jude L. Capper, 2013. Photo from: http://blog.echelonseo.com/wp-content/uploads/2013/03/No-Profanity-Sign.jpg
All foods have an impact – including beef.

Source: Created by Dr. Jude L. Capper, 2013.
Sustainability is achieved by optimizing efficiency...

...all through the chain

Source: Created by Dr. Jude L. Capper, 2013.
Economic viability and environmental impact are intrinsically linked.
Technology allows us to produce more, using less.
Useful Links

Animal Ag Alliance: [http://www.animalagalliance.org/](http://www.animalagalliance.org/)
Center for Food Integrity: [http://www.foodintegrity.org/](http://www.foodintegrity.org/)
Hurd Health: [http://hurdhealth.com/](http://hurdhealth.com/)
SHS Foodthink: [http://shsfoodthink.com/](http://shsfoodthink.com/)

(warning, the last may raise blood pressure)
Thank you!

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http://bovidiva.com/presentationlinks

In honor of Earth Day, she vowed to release no methane for 24 hours.

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WordPress: www.bovidiva.com