



USMEF STRATEGIC PLANNING CONFERENCE
NOVEMBER 6-8, 2019
TUCSON, AZ

ALTERNATIVE PROTEINS SITUATION

BROAD OVERVIEW & FRAMING FOR ECONOMIC DISCUSSION

Glynn T. Tonsor

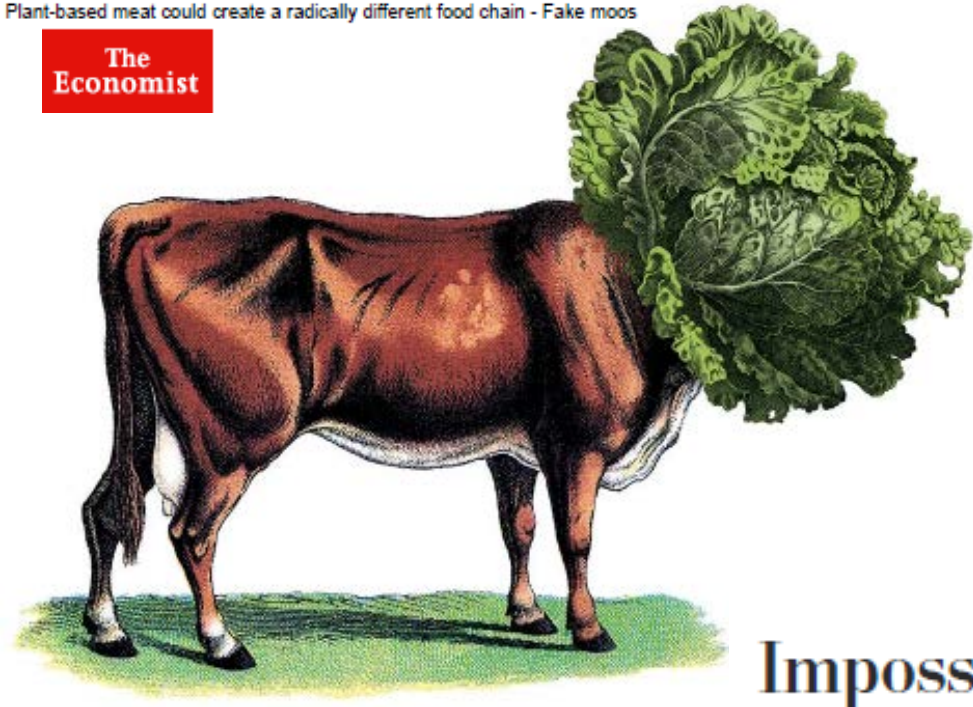
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LOTS OF ATTENTION IN MEDIA: OCT 2019 EXAMPLES

Plant-based meat could create a radically different food chain - Fake moos

The Economist



STOCK STRATEGIST

Beyond Meat Looks Rich



The company's a pioneer in plant-based meat, but competition is set to intensify.

The Washington Post

Democracy Dies in Darkness

Impossible Burger: Here's what's really in it

By Laura Reiley

Impossible Foods seeks approval to sell its plant-based burgers in Europe



PUBLISHED WED, OCT 23 2019.12:01 PM EDT UPDATED WED, OCT 23 2019.12:26 PM EDT



CURRENT OFFERINGS OVERVIEW / MAIN PRODUCTS-COMPANIES



Retail / Grocery



Restaurant / Food Service

FOOD SERVICE

- Food Service (<https://www.peta.org/living/food/where-to-buy-beyond-burger/>)
 - TGI Fridays, Carls Jr., Epic Burger, Plan Check, BurgerFi, Next Level Burger, Chelo's, Disney Theme Parks, Veggie Grill, Luna Grill, Alamo Drafthouse Cinema, The Topsy Turtle, Modern Times, LEGOLAND, Cody's Original Roadhouse, Hamburger Mary's, iPic Theatres, Bareburger, Karl Strauss, Black Bear Diner, Showmars, Cineplex Cinemas, White Spot, Triple O's, A&W Restaurants Canada, The Works, Quaker Steak & Lube, Clyde's, Zinburger, Carolina Ale House, Grub Burger Bar, Yard House, TA & Petro, Boston Pizza, Courtyard by Marriott, Uno Pizzeria & Grill, Cinemark Theatres (N=36)



How Do the New Plant-Based Burgers Stack Up? We Taste-Tested Them

Product	Company Location	Price (\$/lb)	Rating
Impossible Burger	Redwood City, CA	\$ 11.99	4.5
Beyond Burger	El Segundo, CA	\$ 11.98	4
Lightlife Burger	Toronto, Canada	\$ 11.98	3
Uncut Burger	San Diego, CA	\$ 10.98	3
FieldBurger	Seattle, WA	\$ 7.38	2.5
Sweet Earth Fresh Veggie Burger	Moss Landing, CA	\$ 8.50	2.5

How Do the New Plant-Based Burgers Stack Up? We Taste-Tested Them

Product	Impossible Burger	Beyond Burger	Lightlife Burger	Uncut Burger	FieldBurger	Sweet Earth Fresh Veggie Burger
Company Location	Redwood City, CA	El Segundo, CA	Toronto, Canada	San Diego, CA	Seattle, WA	Moss Landing, CA
Price (\$/lb)	11.99	11.98	11.98	10.98	7.38	8.5
Rating	4.5	4	3	3	2.5	2.5
Slogan	Made from plants for people who love meat	Go Beyond	Food That Shines	Meaty but Meatless	Plant-Based Artisanal Meats	Exotic by Nature, Conscious by Choice
Selling Points	Vegan, Gluten-Free	Vegan, Gluten-Free, Soy-Free, non-GMO	Vegan, Gluten-Free, Soy-Free, non-GMO	Vegan, Gluten-Free, non-GMO	Vegan, Soy-Free, non-GMO	Vegan, Soy-Free, non-GMO
1st 3 Ingredients	Water, Soy Protein Concentrate, Coconut Oil	Water, Pea Protein Isolate, Expeller-Pressed Canola Oil	Water, Pea Protein, Expeller-Pressed Canola Oil	Water, Soy Protein Concentrate, Expeller-Pressed Canola Oil	Vital Wheat Gluten, Filtered Water, Organic Expeller-Pressed Palm Fruit Oil	Garbanzos Beans, Mushroom, Vital Wheat Gluten

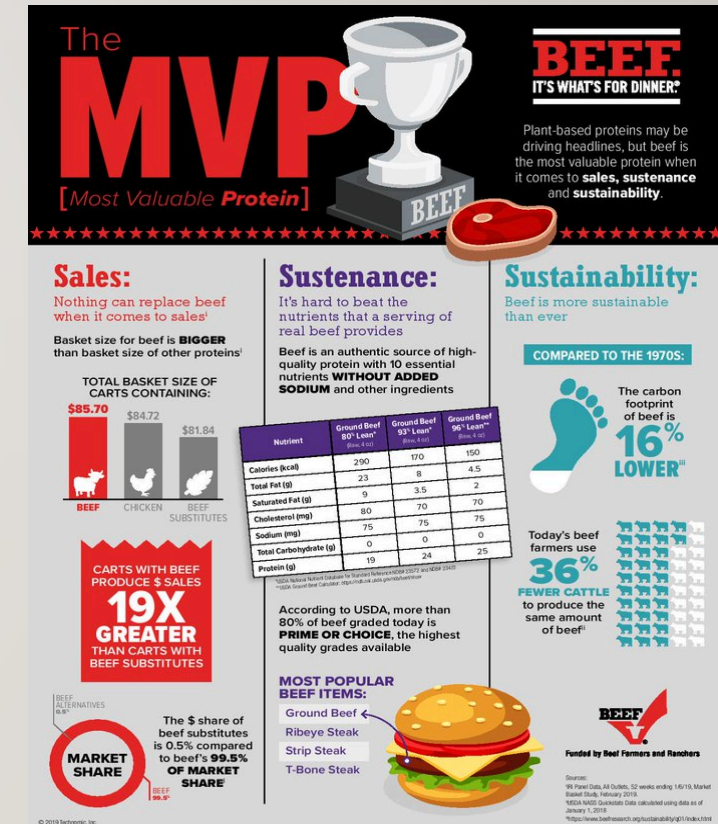
NEAR TERM,
PROBABLE
NEW/EXPANDED
OFFERINGS

VARYING BLENDS OF
GROUND PRODUCT

EXPAND INTO MORE
CHICKEN & PORK
“Like” OFFERINGS

“MARKET SHARE” OF ALTERNATIVE PROTEINS

- GT: Total Revenue More Important
 - “Size of the Protein Pie” is also changing!
- Currently: ~1%
- Future 10%-15% ???
 - Barclays puts global market share @ 10% over next decade
 - Plant-based milk now ~13% in US



<https://p.widencdn.net/5141uq/Beef-Is-the-Most-Valuable-Protein-Infographic>

<https://www.cnbc.com/2019/05/23/alternative-meat-to-become-140-billion-industry-barclays-says.html>

CURRENT ECON KNOWLEDGE IS LIMITED

- Van Loo, Caputo, and Lusk (2019 working paper: <http://jaysonlusk.com/blog/2019/8/8/consumer-preferences-for-labgrown-and-plant-based-meat>)
 - Nationwide US survey & choice experiment in Dec 2018/Jan 2019 (N=1,30)
 - Market share projections
 - All \$5/lb Prices w/o Brands:
 - 63% Farm-raised (i.e. CAB), 14% Plant-based w/ pea protein (i.e. Beyond Meat), 7% Plant-based using animal-like proteins produced by yeast (i.e. Impossible Burger), 4% Lab-grown beef (i.e. Memphis Meats), 12% None
 - Adding Brands: Increases CAB to 72%
 - Even if Plant-Based & Lab-Based Prices fell by 50%, Farm-Raised Beef retains majority market share
 - Those most likely to purchase alternatives:
 - Vegetarians, males, younger, and more highly educated individuals

CURRENT ECON KNOWLEDGE IS LIMITED

- Slade (2018 *Appetite*, 2017 Survey & CE in Canada, N=533)
 - If prices are equal, 65% would buy beef burger, 21% plant-based, 11% cultured meat, & 4% none
 - Those most likely to purchase alternatives: Vegetarians, younger, & more educated

From: Dr. Trey Malone

Michigan State University

POLITICAL PRESSURE TO ENFORCE DEFINITION OF “MEAT”

NATIONAL

What's Meat, Anyway? Missouri Label Law Says It Comes From An Animal; Some Disagree

August 29, 2018 · 2:46 PM ET



EMILY SULLIVAN

HOME > UNCATEGORIZED > MISSOURI AND FRANCE PROHIBIT LABELING PLANT-BASED PRODUCTS AS “MEAT”

Missouri and France Prohibit Labeling Plant-Based Products as “Meat”

Posted on May 24, 2018

Lab-Grown Meat Is Coming to Your Supermarket. Ranchers Are Fighting Back.

The U.S. Cattlemen's Association petitioned the USDA to declare that "meat" and "beef" exclude products not "slaughtered in the traditional manner."

Zach Weissmueller | April 26, 2018



EMAIL | PRINT

HEALTH

Why are meat companies fighting over labels on plant-based foods?

POPULAR SCIENCE

Their efforts to limit use of the “m-word” could ultimately hurt their own sales.

By Trey Malone & Brandon McFadden/The Conversation | October 14, 2019



CURRENT ECON KNOWLEDGE IS LIMITED

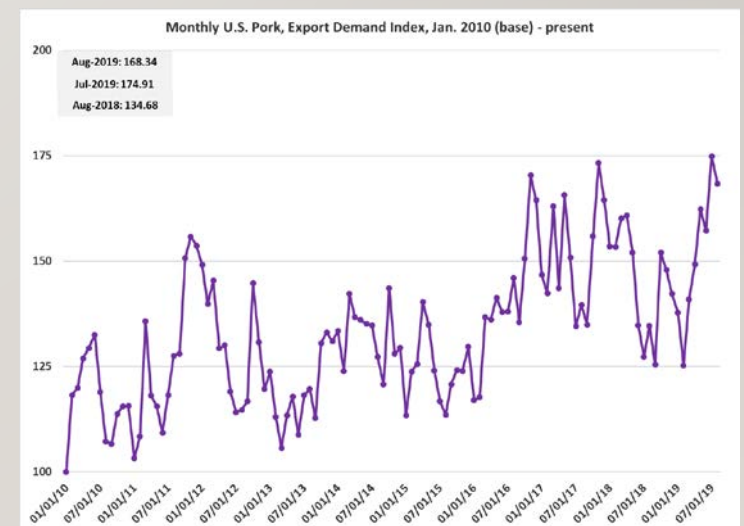
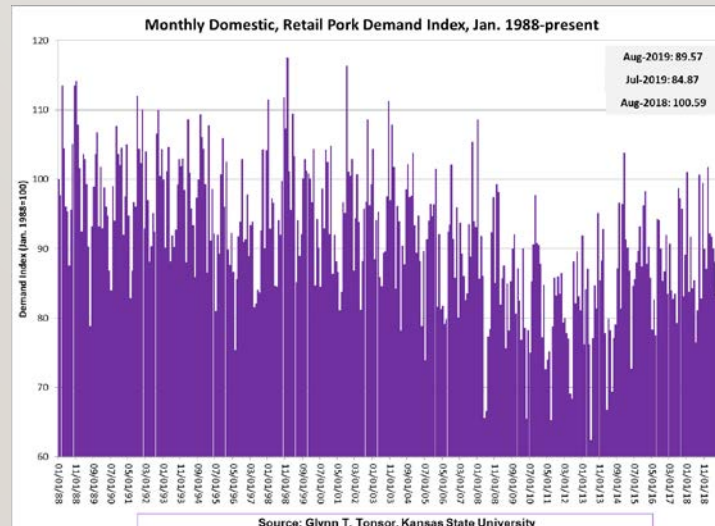
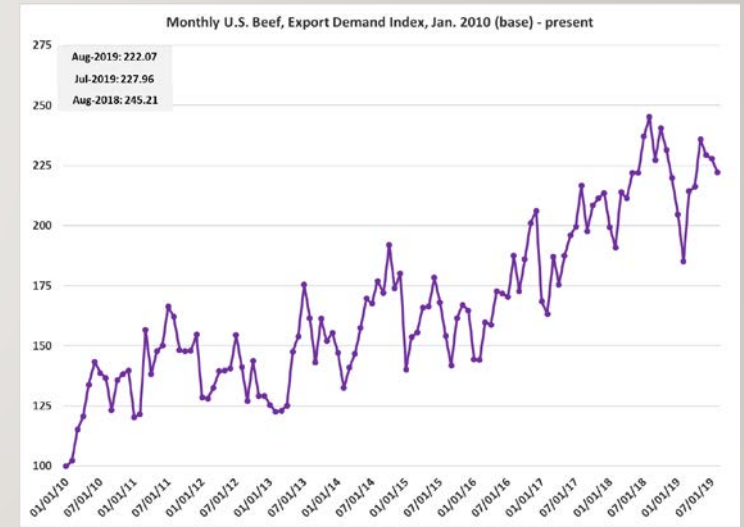
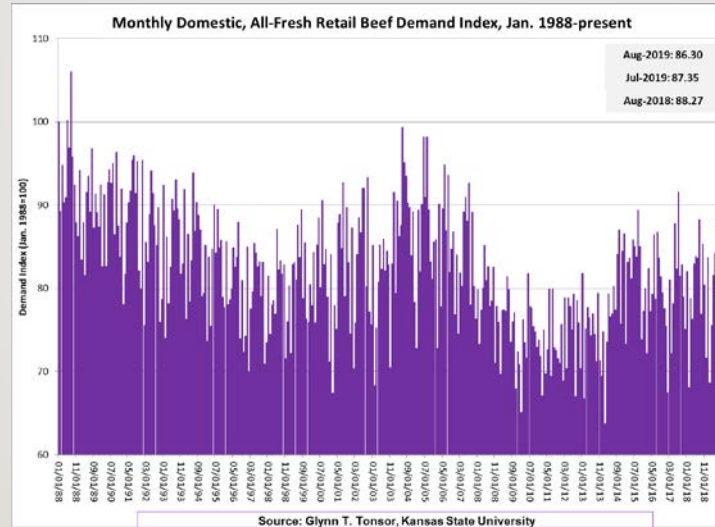
- DeMuth, Malone, McFadden, & Wolf (2019 working paper; US N=1,502)
 - Notes proposed legislation preventing lab-grown & plant-based products from using the term “meat” on labels
 - Whether products carried the “meat” label or not, US consumer knew little about what animal-based & plant-based items contained or whether it was good for them
 - Eliminating the word “meat” from alternative products did NOT impact the % selecting traditional meat products

WHERE IS GROWTH IN ALT-PROTEIN DEMAND MOST EXPECTED?

- Domestically (currently)
 - Higher income, flexitarians
 - Subsets of population viewing environmental, AW, and/or nutritional claims most favorably
- Domestically (if/when prices notably decline)
 - Lower income, those most indifferent to protein source in ground products
- Abroad
 - Potentially those most price sensitive if/when prices notably decline

DOMESTIC & EXPORT U.S. BEEF & PORK DEMAND REMAINS ROBUST!

[HTTPS://WWW.AGMANAGE.COM/INFO/LIVESTOCK-MEAT/MEAT-DEMAND](https://www.agmanage.com/info/livestock-meat/meat-demand)



GLOBAL DILEMMA FOR LIVESTOCK SECTOR

- Global demand for protein will continue to grow
 - Directly benefits existing protein sources
 - Yet also drives innovation and new competition
- GT: There is room for “coexistence”
 - More economic research is needed on net substitution patterns, effects of labeling, etc.

POSSIBLE PATHWAYS FOR US MEAT EXPORTS

- No substantial impact on US exports
 - Fad is realized (Former McDonald's USA CEO Ed Rensi),
 - Labeling/Regulatory burdens develop, &/or
 - Export gains simply offset domestic substitution developments
- **Increase in US exports**
 - **US comparative advantage in animal-based protein continues to be realized**
- Decrease in US exports
 - Large growth in alt-proteins leads to notable decline in U.S. livestock inventories & foreign meat demand

PARTIALLY-INFORMED GT FORECASTING...

- US imports of lean beef (from cattle) will be reduced by growth in alternatives
 - Plant-based proteins may soon be viable & more available for “new optimal” blending
 - If true, this changes US net export situation and broader industry politics around trade
- US exports of beef & pork (from animals) will increase
 - GT views global pull for traditional meat & US comparative advantage as key
 - Very possible that alt-proteins grow in US & YET US exports of animal-based proteins grow

CHANGE IS ALWAYS ONGOING

- Scientific ability changes
- Public acceptance changes
- Producer views & practices change

➤ Retaining focus on comparative advantage is CRITICAL

CONSIDER HOW MUCH PHONES HAVE CHANGED...



Sources: <http://imgkid.com/old-rotary-phone.shtml> <http://www.gizmag.com/mobile-phone-40-year-anniversary-photos/25677/> <http://www.cellphonereviews.com/who-invented-the-cell-phone/> <http://science.howstuffworks.com/innovation/inventions/who-invented-the-cell-phone.htm>

CONSIDER HOW MUCH MORE PHONES WILL CHANGE...



More information available at:



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