

Imperial College London

Some Global Food Industry Developments: Implications for the Canadian Pork Industry

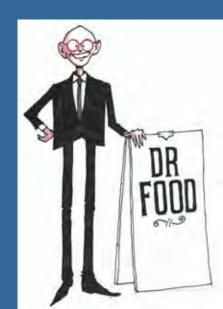
Dr. David Hughes
Emeritus Professor of Food Marketing

Banff Pork Seminar 2019
Fairmont Banff Springs Hotel
Banff, Alberta, Canada
Wednesday, January 9th, 2019





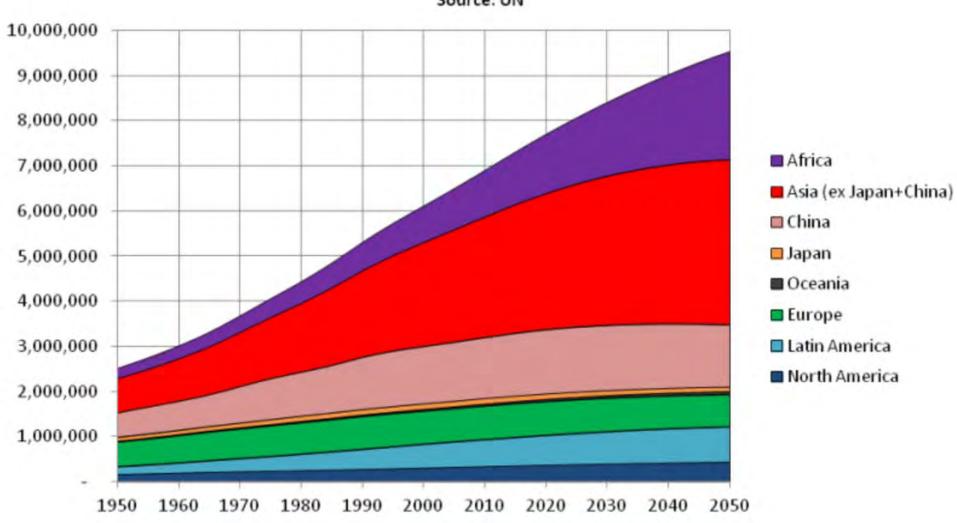
www.supermarketsinyourpocket.com



Heading for 10 Billion by 2050!

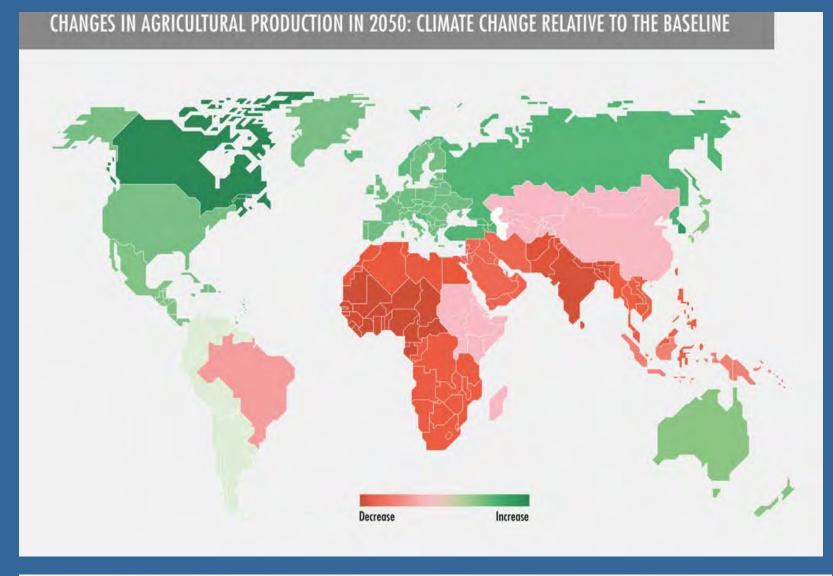
World Population





We're Adding 2 Billion By 2050. Evenly Spread?





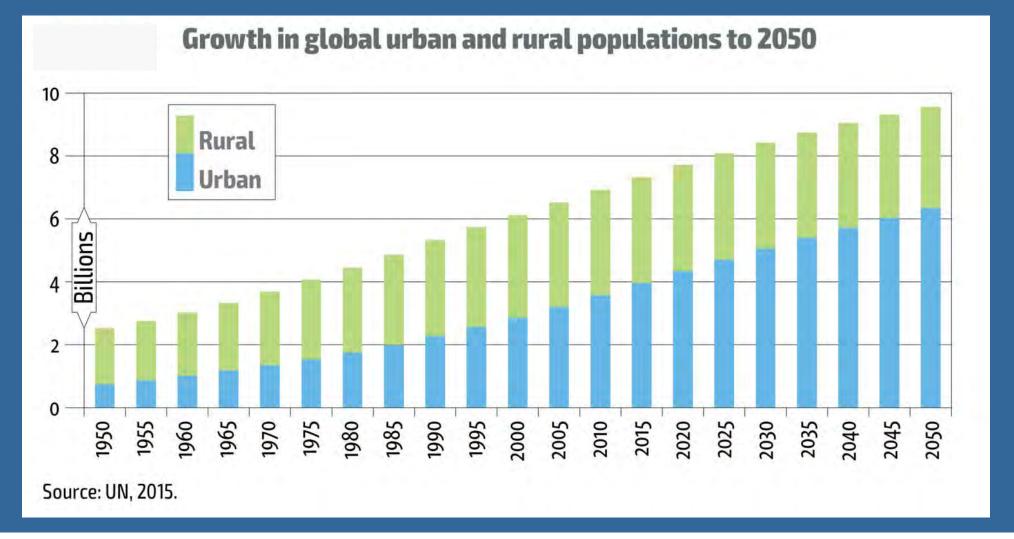


Dr. Food @ProfDavidHughes

Climate change-induced declines in agricultural production forecasted for Africa & much of Asia by 2050 (FAO). Hmmm, those are the same regions which will see the lion's share of the anticipated 2 bn. extra people in our world by then! Good news for some big commodity exporters.



Urban Consumers Increasing from 4 to 6 Billion Over the Next 30 Years: With Smaller Households, Higher Incomes, Changing Diets



Chinese Cities with the Purchasing Powers of Countries!

Rank \$	Chinese City \$	City GDP (2015, PPP, in billions)	Comparable Country
#1	Shanghai	\$810	Philippines
#2	Beijing	\$664	U.A.E.
#3	Guangzhou	\$524	Switzerland
#4	Shenzhen	\$491	Sweden
#5	Tianjin	\$478	Romania
#6	Suzhou	\$440	Austria
#7	Chongqing	\$425	Chile
#8	Hong Kong	\$414	Peru
#9	Wuhan	\$324	Israel
#10	Chengdu	\$306	Norway









Global Differences In What Shoppers Value in Meat

Thanks to data, Spicy Snickers really satisfies Chinese Consumers October, 2018

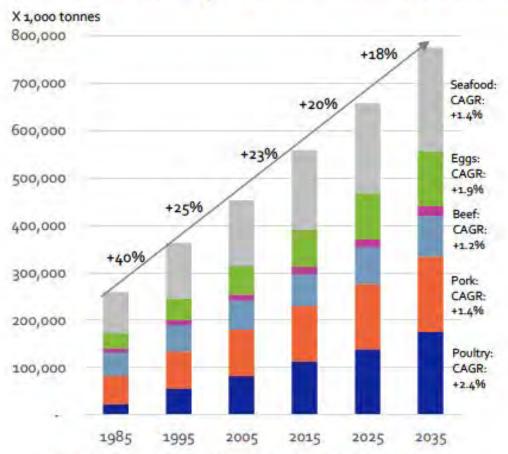
Mars Works with Alibaba Shopper Data Specialists To Launch Quickly & Successfully Spicy Snickers



Global Outlook for Meat and Eggs Looks Encouraging

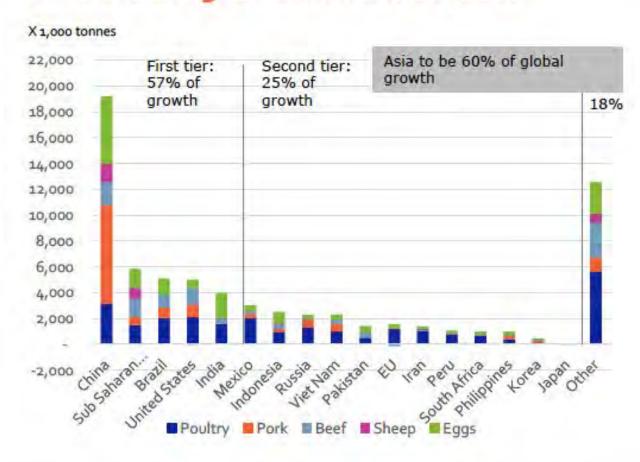


Global animal protein market outlook



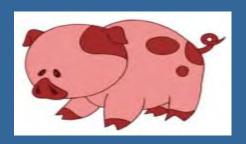
Source: Rabobank projections based on FAO, USDA, OECD and local statistics, 2018

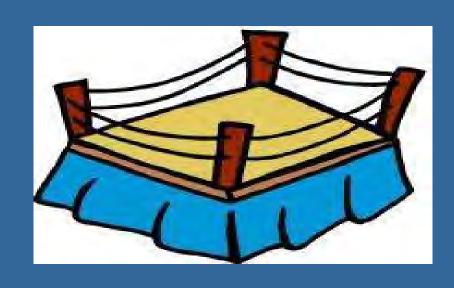
Where is the growth in next decade?





Pork Should Keep Out of the Way in Global Battle Between Industrially Produced Chicken and Fish











White Fish Fillet*
& Chicken Breast
Head-to-Head
Competitors
Worldwide





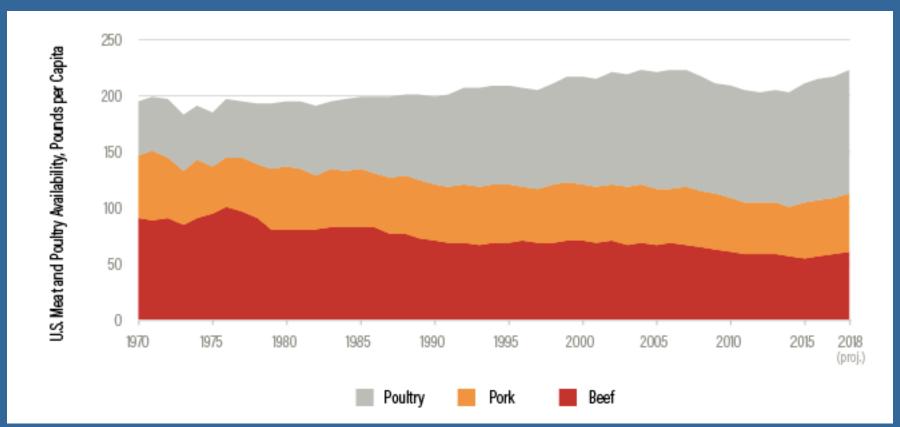
Both Approx. us\$3/kg.

Meat: Making America Great Again?!

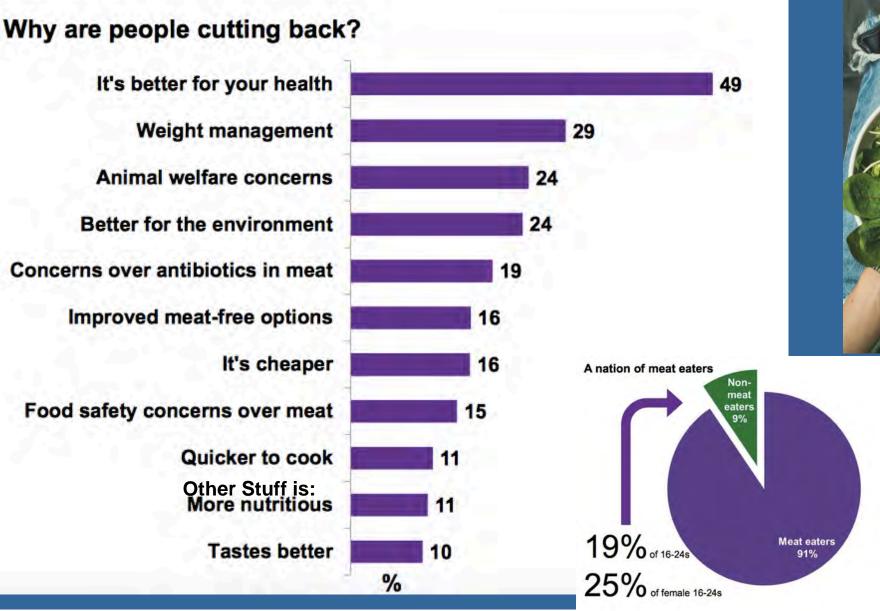


Well done! Americans will eat a record amount of meat and poultry in 2018

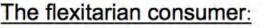




Rise of The Flexitarian in High Income Countries







- Women
- 25-34s
- ABs

MINTEL

- · High-earners
- People living in London
- Consumers most likely to buy into free-from foods (eg gluten-free)

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Mind you, Asian consumers are intrinsically Flexitarian!







It's Cool NOT Wussy
For Men to be Concerned
About Their Health and
About Their Looks!

Pulses Complement Meat In Flexitarian Products

Not only will
we see more vegan
and vegetarian
options, but products
like pizzas, lasagnes
and pies will replace
a proportion of their
meat with plants







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Flexitarian French!



Bill Gates and Richard Branson Back Startup That Grows 'Clean Meat'



Memphis Meats: Richard Branson predicts the world will no longer need to kill animals in 30 years

Protein innovation: Cargill invests in cultured meats





Invests in January, 2018

The evolution of lab-grown meat: Aleph Farms creates "first" cell-grown steak

"We're shaping the future of the meat industry

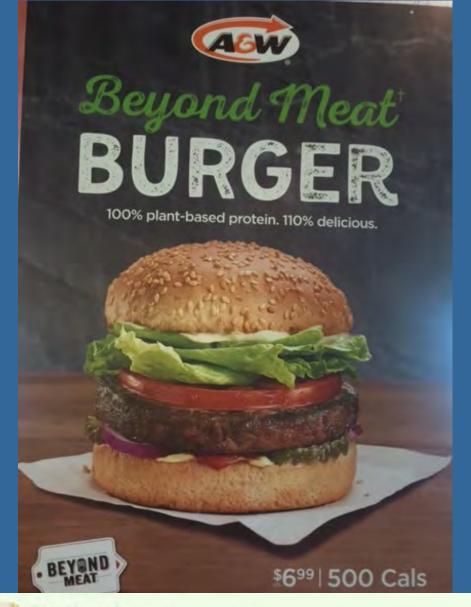
— literally," says Didier Toubia, Co-Founder and
CEO of Aleph Farms.

December 12th, 2018















In Canada, a similar notice has been posted at select A&W locations (Photo: Reddit)



In Alberta, Canada last week. Beyond Meat plant-based burgers sold out in A&W outlets & in Whole Foods supermarkets. Got one in Red Deer: looks/tastes like a decent regular burger although the "meat patty" is a little softer than the real thing. @ £4, 15% price premium over beef.







SMOKED APPLE SAGE SAUSAGE ITALIAN SAUSAGE

MEXICAN CHIPOTLE SAUSAGE









McDonald's joins the Veganuary craze by offering its first ever vegetarian Happy Meal for children January 3rd, 2019

- The new Happy Meal features a breaded red pesto goujon wrap instead of meat
- A similar wrap will also be available on the adult menu as a Spicy Veggie Wrap
- The meals were created with the help of campaign group the Vegetarian Society

















Beloved of Blue Collar Britain

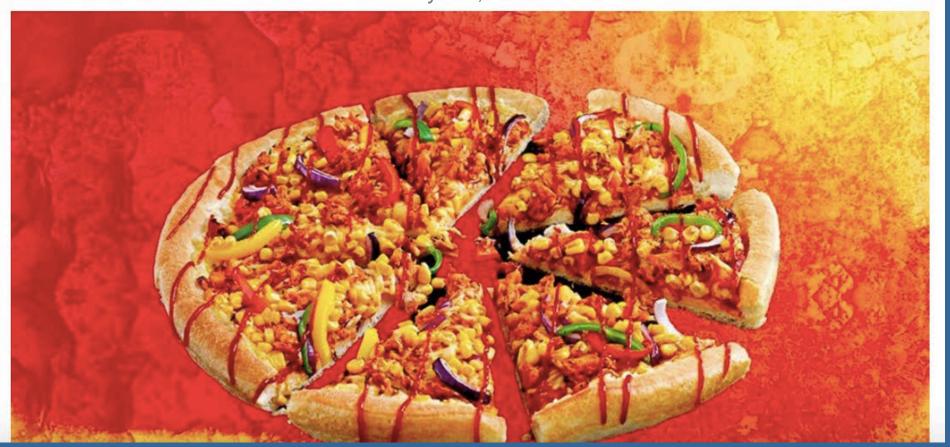
'I'll be sleeping outside Greggs like it's a royal wedding': FEMAIL puts new VEGAN sausage roll to the test as social media erupts in anticipation... but will it outscore its meat rival?

- New vegan sausage roll will launch at 950 stores across the UK from tomorrow
- Five of our writers did blind taste test of vegan option against traditional pastry
- Twitter has been going wild over announcement, with Greggs trending in UK



The sausage's roll's meat-free pastry has a Quorn filling instead of pork and it will cost £1

PIZZA HUT UK LAUNCHES CHEESY VEGAN JACKFRUIT PIZZA IN **ALL 253 LOCATIONS** January 2nd, 2019





A Teaser Veganuary New Product Albeit Priced Eye-Wateringly High (£11.50)





Vegan Beyond Burger Launches in 1,000 Carl's Jr. Restaurants Across The US

The patty is part of a veganizable sandwich featuring cheese, lettuce, tomato, sliced onion, dill pickle, special sauce, and mayonnaise









January 2nd, 2019

Veggieburgers Adorn Italian Supermarket Shelves







Zero meat: Japanese firm Otsuka Foods enters plant-based meat market



December 10th, 2018



Unilever buys meat-free food company The Vegetarian Butcher December 19th, 2018

Acquisition of Dutch brand highlights scramble to tap into meat substitutes market



▲ Tofu turkey is on the table for this Christmas, just one ingredient of a surge in the meat alternatives market. Photograph: Alamy Stock Photo

Unilever is buying the meat-substitute company The Vegetarian Butcher as it looks to cash in on the growing number of consumers turning their backs on meat.



Nestle Plans Vegan Push With No-Meat Burger, Purple Walnut Milk Jan. 1st, 2019

Seeking millennial cred with alternative proteins, the Swiss giant sees its vegan business reaching \$1 billion within 10 years















Gosh! Looking for Financial Suitors
November 2018

Quorn to spend GBP150m to increase production at UK plant





Quorn is a \$1 bn. Global Brand in the Making Quorn owned by Monde Nissin from The Philippines







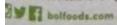


Turns out my Mum was right, we need to eat more veg

Meet the challenger brand helping to take this plant-based movement mainstream

- +135% YoY brand growth
- 65% incremental to category*
- recruiting a younger, more health conscious shopper**
- lots more plant-powered innovation and marketing plans set to land in 2019

ales@bolfoods.com if you're interested in stocking ello@bolfoods.com to talk plans and plants with Paul









UK: "Wicked" chef creates plant-based dishes for new Tesco meal range













January 2nd, 2019

M&S becomes the latest retailer to launch a vegan range featuring 'dirty' comfort food such as Mac 'n' Cheese -



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Tsunami of Vegetarian Products
Hit the Shelves Early-January



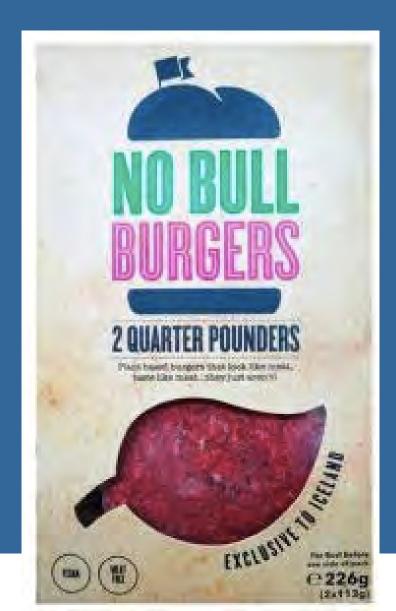




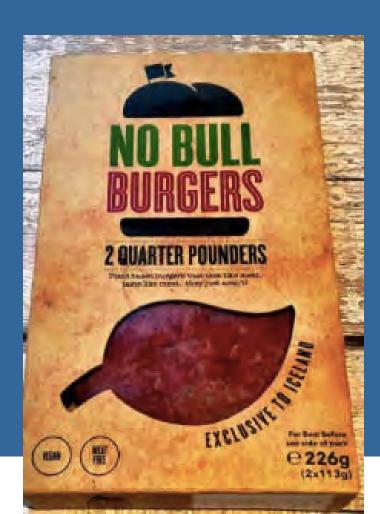








Iceland adds to plant-based range after No Bull burger becomes a cult success



August 8th, 2018



Dr. Food @ProfDavidHughes

The red meat industry has to substantially up its marketing game in 2019 or it'll haemorrhage. Here's quirky startup White Rabbit Pizza Co. with a smokin' vegan pizza endorsed by Sainsbury's and linked to JS's "money off" coupons. It's never been easier to be an occasional vegan!



From The Consumer's Perspective, "The World of Protein" Expands

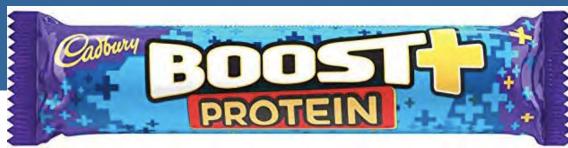
Increasing Demand for Protein Goes Mainstream and It's Much More than Meat: Dairy, Plant-Based, Algae, Insects and More!

Mars Launches Protein Bars Under Snickers and Mars Brands, Answering to the Growing Demand for High Protein Snacks October 1st, 2018





Me, Too!





Ticking the Trend Boxes: Protein, Ancient Grains, Almonds, "Natural" Honey

Protein from Algae



ENERGYbits® are tiny tablets of algae, a sustainable eco-friendly crop so nutritionally dense, it eliminates fatigue and hunger instantly. Want a healthy, natural way to fuel your game or fire up your brain? ENERGYbits® are for you! NO caffeine, sugar, chemicals, gluten or soy, just pure, plant based nutrition. ONE INGREDIENT, ONE CALORIE and ZERO NET CARBS. Perfect for Keto, Paleo, Vegan, Low-Carb or Low-Calorie diets. Improve your energy, wellness and waistline all at the same time with Bits®!







Bugs in the grocery aisle; Loblaw adds cricket powder to its PC line

Company says crickets are more sustainable than other forms of animal protein









Germany's PHW Gruppe makes investment in insect burger start-up Bugfoundation





McDonald's championing research into insect feed for chickens

September 27th, 2018

Is insect protein on the march?
AgriProtein acquires Belgian insect feed
company Millibeter December 3rd, 2018



Look, There's a Lot of This about and it's NOT from





Three HUGE Pressure Points on Global Meat Industry: Environment, Health, Welfare

Avoiding climate chaos: "Reduce meat consumption and go flexitarian," urges new research October 11th, 2018

11 Oct 2018 --- Dietary changes are needed to slow the impact of climate change, warns new analysis that says meat consumption should be dramatically reduced in favor of plant-based diets. Considerable differences in farming are needed to avoid the dangers of a warming planet and the challenges of feeding a growing population in a world with more drought, floods, and extreme heat. The in-depth analysis involving the University of Oxford and the Potsdam Institute for Climate Impact Research in Germany (among other researchers) assessed the food systems' environmental impact,









How do your food choices impact on the environment?

Which food would you like?

Pork V

How often do you have it?

1-2 times a week V



75g, equivalent to three bacon rashers, per serving

Over an entire year your consumption of pork is contributing 140kg to your annual greenhouse gas emissions.



That's the equivalent of driving a regular petrol car 359 miles (577km).



OR

the same as heating the average UK home for 22 days.

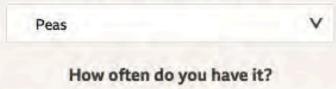
Your consumption of pork also uses



20,519 litres of water, equal to 315 showers lasting eight minutes.

How do your food choices impact on the environment?

Which food would you like?



1-2 times a week



80g per serving

Over an entire year your consumption of peas is contributing 1.4kg to your annual greenhouse gas emissions.



V

That's the equivalent of driving a regular petrol car 4 miles (6km).



OR

the same as heating the average UK home for 0.2 days.

Fun Environmental Tool that'll Irritate You All!



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FOOD TRIANGLE GEZOND gezondleven be DRINK MOSTLY WATER MORE





HEALTH

ALL Departments of Health
In OECD Countries are Calling
For Reduced Meat Consumption,
Particularly Processed Meat

Belgium's new food pyramid puts processed meat in the same section as candy, fries and pizza. Flemish Institute of Healthy Living







The Anti-Meat Lobby are:

- Relentless
- Zealous
- Well-Financed

A German Grocery Chain Is Selling First-Of-Its-Kind "No-Kill" Eggs

Every year, billions of male chicks are euthanized by the egg and poultry industry, but new tech could end the chick culling



Don't Tell Consumers that
Male Chicks are Routinely
Destroyed at Birth. They
Might Consider This Practice
To Be Barbaric Behaviour!



ale chicks are pretty much useless to the egg and broiler industry; they don't produce eggs and their bodies don't grow as large or as fast as female chickens. Consequently, hatcheries kill off their male chicks within hours of their birth, either suffocating them with gas or running them through a shredder to become animal feed.



The next generation: 'influencer shoppers'



25%

of the British grocery shopper population



- YOUNGER
- HIGHER AFFLUENCE
- 1000+ SOCIAL MEDIA FOLLOWERS
- ONLINE REVIEWERS
- EARLY TECH ADOPTERS
- ENGAGE IN FUTURE TRENDS





Social Media Accelerates the Exchange of Information Around the World Not Least on Food Trends and Between Gen. Z and Millennial Consumers

























Consumers continue to evolve













































"Eating Out In" with The £10 Meal Deal C\$17 Dinner for Two. Food Retail Converges With Food Service

Snackified Eating



Traditional eating patterns built around three "square," structured meals a day has given way to modern eating styles. 50% of all eating occasions are now snacks.







Increasing Protein in the Diet is On-Trend and Meat Protein Snacks are Fashionable



Chicken Snack from Moy park

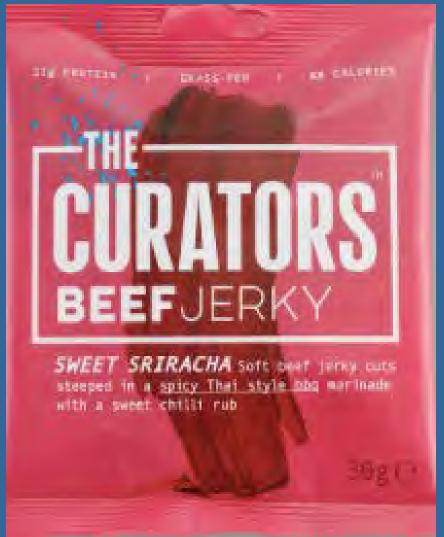






Upmarket Jerky











FOSTER FARMS INTRODUCES BOLD BITES: ON-THE-GO, HIGH-PROTEIN, FLAVOR-RICH CHICKEN SNACKS



On-Trend with the Adventurous Consumer





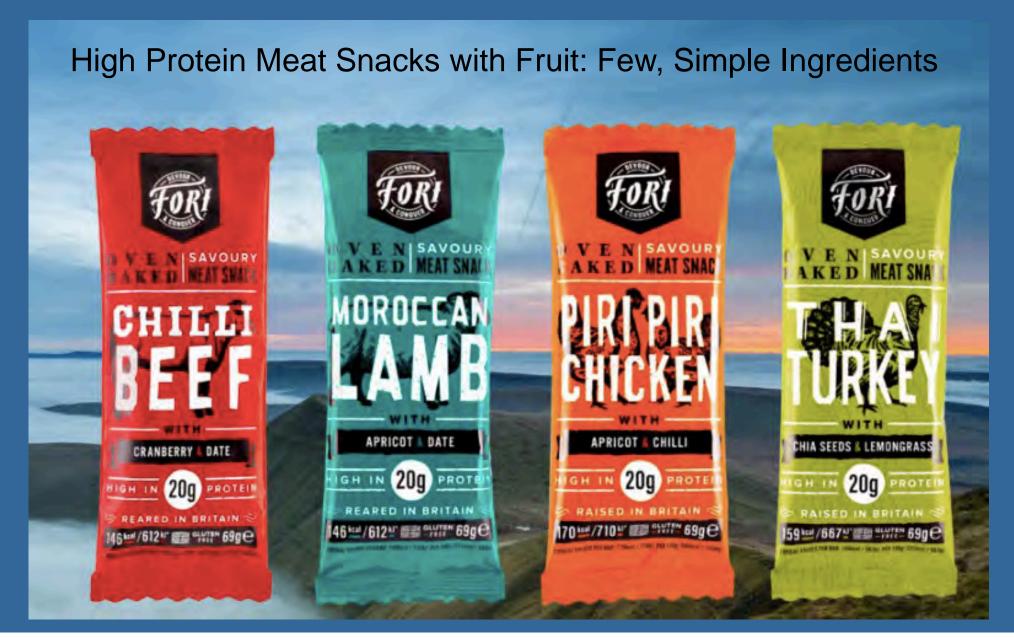


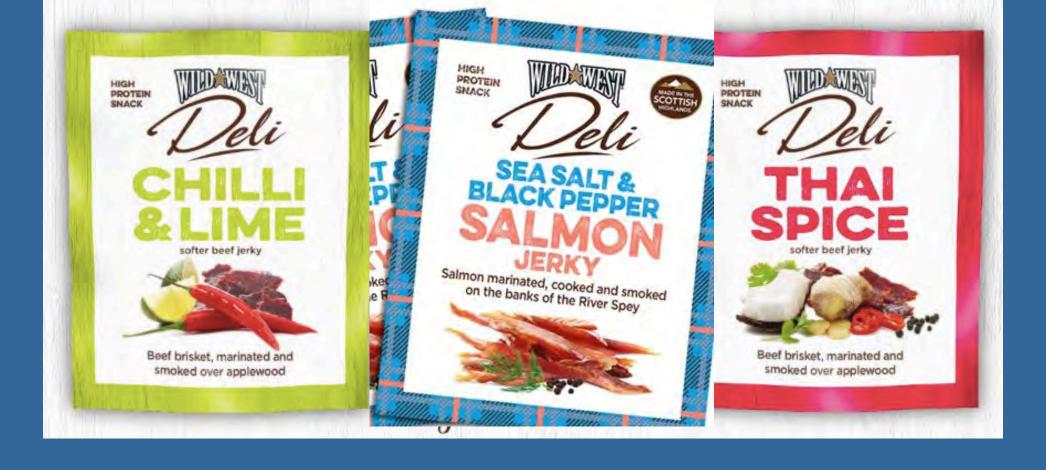


Those Pesky Quorn Guys Again!









We've just taken on a factory in the Scottish Highlands to launch our new Wild West Deli Salmon Jerky.



Competitor for Pork Crackling!





Sushi: Popular Throughout The World Brilliant Snack/Mini-Meal But Not Without Supply Chain Challenges.

Where are the Pork Meat Challengers?*



^{*} Ham and Bacon are Doing Pretty Well!

The Number 1 Global Mega Consumer Trend is the Increasing Concern About The Health of the Family and The Health of the Planet. When Food Shopping, Drives Shoppers Towards "Mindful Choices"*





And a Widespread View that Big Food, Big Business, Big Government are Part of the Problem NOT Part of the Solution

"I WANT TO EAT FOOD THAT'S GOOD FOR ME & MY FAMILY AND THAT I FEEL GOOD ABOUT EATING"



OECD
Obesity League
2016



"It's Big Food and Big Soda to Blame"!

What About "Big Meat"?



Mexico's sugar tax leads to fall in consumption for second year running

Health experts are watching the progress of the tax to see if it will lower the rates of obesity-related diseases and type 2 diabetes





Watch Out for Increasing Government Regulation/Legislation to address the Global Obesity Crisis.

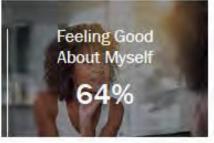
Pork Issues? High Fat Perception, Fried Meat Products, High Salt

Sugar Taxes In The Americas: Brazil And Canada Most Likely To Follow Mexico's Lead

Food products will be tailored to personal priorities

Different lifestyle approaches to health and wellness...









... may lead to different personal nutrition needs and wants ... Digestive Health
Energy / Fuel
Muscle Building
Performance

Weight Control Hunger Control Skin / Beauty Anti-Aging Purity

Digestive Health

Stress Reduction

Sleep Enhancement

Heart Health
Disease Prevention
Allergen Free
Immunity Building

... and different solutions





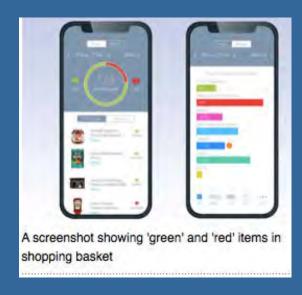








Professor Chris Tomazou's DNA Nudge device uses Smartphone technology to advise consumers whether particular food products are healthy for them or not.



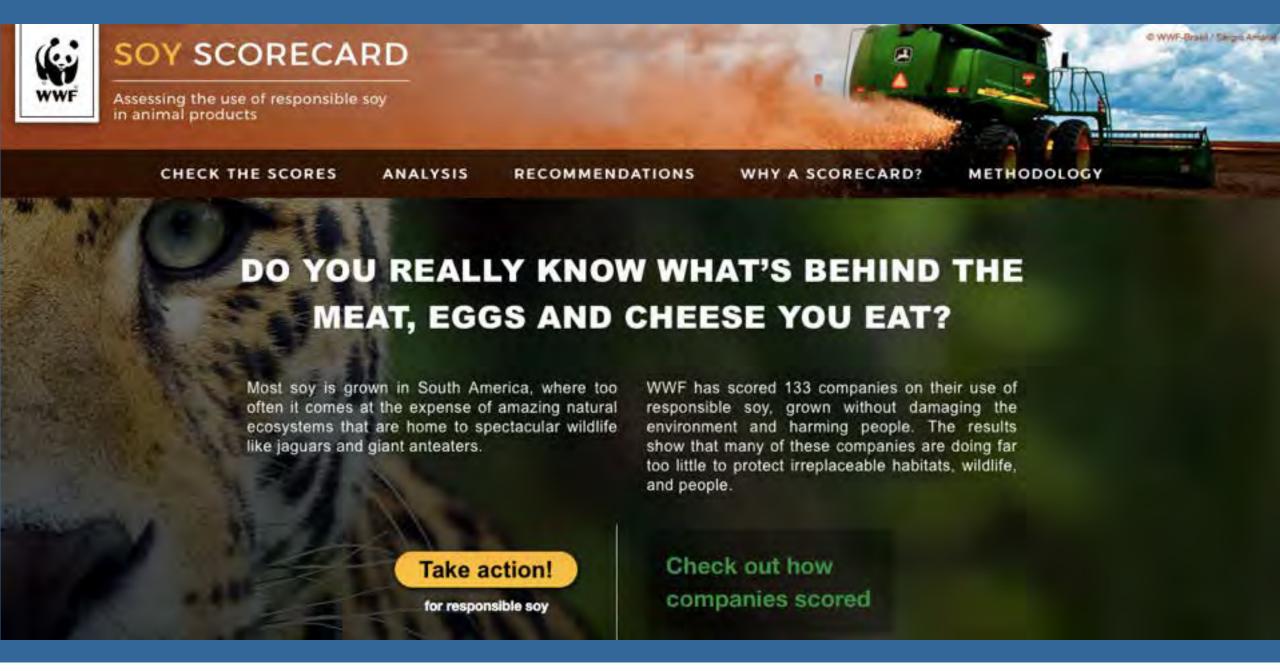
Chipotle adds 'Lifestyle Bowls' for paleo, keto, Whole30 dieters

January 2nd, 2019

Four new menu items tap popularity of trendy diet plans









Social Pressures Dictating Choice Remind Me Again What We **Can't** Eat?:

- Anything with palm oil as an ingredient
- Livestock that's been fed soy from Brazil
- Shrimps caught by slave labour in Asia
- Beef that has destroyed the Amazon
- Anything with GMOs
- Anything in a non-recyclable pack
- etc.

The Australian pig farm benefitting from employing people with autism







PHOTO: Centaine Kaesler-Smith is one of many Australians on the autism spectrum who was unable to find work Autism and Agriculture program. (Supplied: SunPork Farms)

It is not easy for people on the autism spectrum to find work, but an Australian piggery is trying to change that.

SunPork Farms is part of an initiative called Autism and Agriculture which is aiming to develop career paths for people on the autism spectrum in animal care roles.

The "Blue Planet II Factor"

Suppliers, Retailers & Consumers Will Change Radically Their Use of Plastic Packaging





Dr. Food @ProfDavidHughes

The Domino Theory: Implications for Plastic Packaging

supermarketsinyourpocket.com/2018/02/27/the...

Milkmen are returning to London as millennials order glass milk bottles in a bid to slash plastic waste

The satalyst for the surge in millernials using glass bettles is Cavid Attenborough's Blue Planet II, according to one millerare





Men Can be Concerned About:

- Their Looks
- and the State of the Environment!

Royal Mail: Stop posting crisp packets without envelopes



Royal Mail has stepped into a row between campaigners and crisp makers Walkers - by urging people posting empty packets to put them in envelopes.

Campaigners asked people to post the non-recyclable plastic bags and "flood Walkers social media with pictures of us popping them in the post".

Royal Mail is obliged by law to deliver the bags to Walkers' freepost address.

But without envelopes they cannot go through machines and must be sorted by hand, causing delays.

PepsiCo UK Will be FORCED To Change Chip Packaging.

Initial Response, Within Days, Was to Establish Chip Package "Drop Off Points"



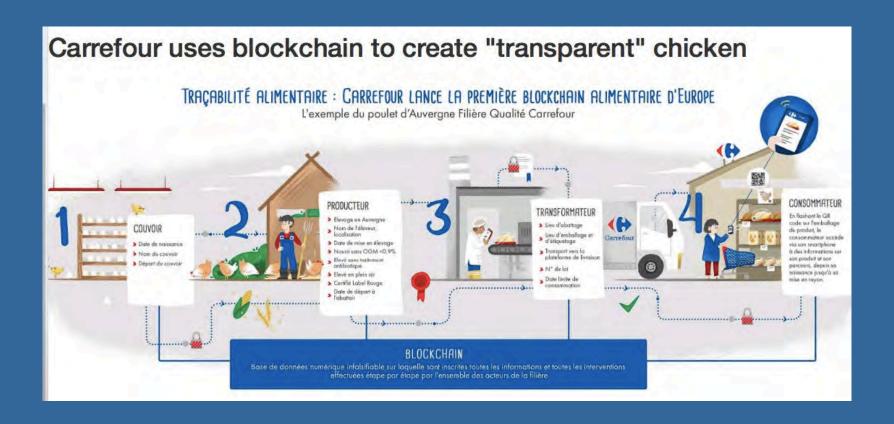
There's a New Marketing Mantra: Start Doubling Up on the Five Ps

- Purpose: Customers feel the company shares and advances their values.
- 2. Pride: Customers feel proud and inspired to use the company's products and services.
- 3. Partnership: Customers feel the company relates to and works well with them.
- 4. Protection: Customers feel secure when doing business with the company.
- Personalization: Customers feel their experiences with the company are continuously tailored to their needs and priorities.



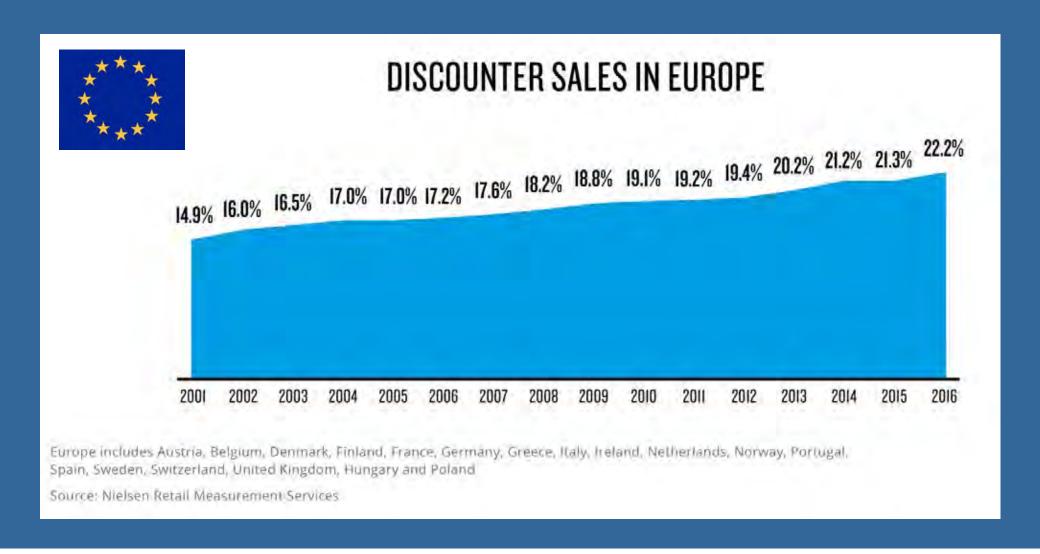


Walmart Is Getting Suppliers to Put Food on the Blockchain



Blockchain technology: eHarvestHub plans to make traceability more lucrative for farmers

Is There a "Natural" Ceiling for Hard Discounters in ANY Market?



More food in the mix at Dollar General December 5th, 2018





More Competition for Traditional Supermarkets in USA



Who's Leading the Way in On-Line Grocery? Why? (and don't go to the USA for on-line leadership!)

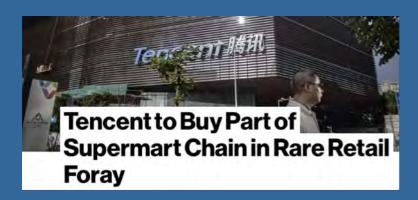




BREAKING: Amazon to buy Whole Foods in \$13.7B deal

China's E-Commerce Giants Buy Into Bricks & Mortar Supermarket Chains





ALIBABA GROUP'S HEMA SUPERMARKETS: THE REAL DEAL WITH CHINA'S 'NEW RETAIL'



October 9, 2017 & Inside Retail Asia

Alibaba buys stake in Chinese hypermarket chain Sun Art





Kroger's recent deals highlight the growing importance of technology in food retail May, 2018



Kroger Counters Amazon's Grocery Offensive With Ocado Deal

Kroger's driverless delivery test underscores a focus on the future







Kroger Buys Home Chef As The Meal Kit Industry Rapidly Consolidates

Tesco, Carrefour waste no time in trying to leverage power of partnership August 7th, 2018



Fresh Meat Suppliers Are on Their List!

It's official. **Tesco** and **Carrefour** have joined forces, entering into a formal long-term, strategic alliance that is slated to become operational in October.

In an official release from Tesco, the alliance is said to cover the strategic relationship with global suppliers, the joint purchasing of own brand products and goods not for resale.



amazon go goes smaller



December 13th, 2018



Dr. Food @ProfDavidHughes

Amazon Go mini convenience store being trialled in USA (42 sq.m. 1/4 size of Tesco Express). Pop stuff into basket & pay automatically on exit with Amazon App. Products? NO ingredients just breakfast/lunch/dinner/snacks. This format will fit nicely into any apartment/office block.



CONT. BRILLIAN BRILLI

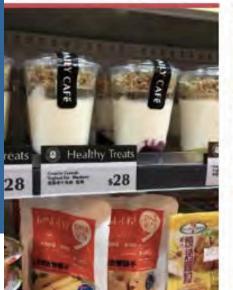




The Other Day, I was in an Outlet with a Huge Hot & Cold Beverage + Snack Offering



Healthy Food Offer









Asian and Western Food & Beverages









Noodle Bar















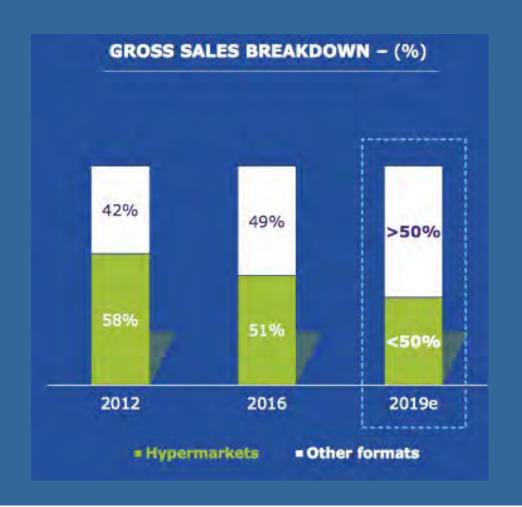




Hong Kong

For Major Supermarket Companies around the World: The Future is Omni-Channel. One Product Does Not Fit All Channels!







Restaurant delivery services are a growing challenge for supermarkets

Ordering Platforms and Meal Deliverers for the Global Restaurant Trade





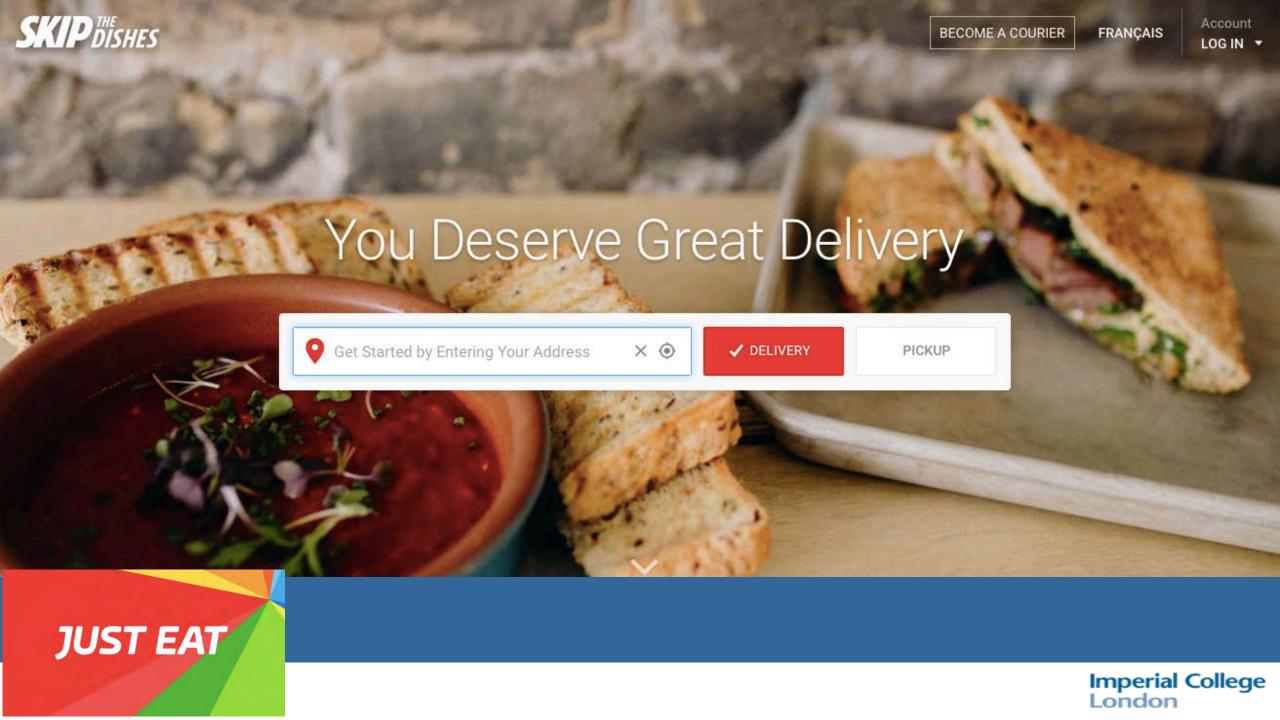






It's a Dynamic Sector!









Food-to-Go is a Huge Market in the UK (£25+ Bn.) Supermarkets are Important but Tertiary Players



Starbucks to Double Food Sales Globally by 2020





"I'll See You at Starbucks for Breakfast/Lunch/Snack"

Starbucks launches Uber Eats delivery in 100 Florida stores



Ham & Cheddar

Black Forest-style ham, Cheddar cheese, lettuce, tomato and ranch dressing served on a rustic bun.



Savoury bacon, tomato, lettuce and mayo served on a rustic bun.



Turkey Bacon Club

Carved seasoned turkey, savoury bacon, lettuce, and tomato, topped with mayo on a rustic bun.





Meat Artisans and the Notion of Craft Meat







Danone VC Arm Buys into Farmer's Fridge Franchise Vending Business in USA











Hillshire Farm expands vending options

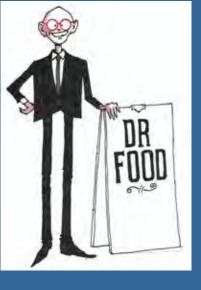






Some Takeaway Points for The Canadian Pork Industry

- Global demand expanding for meat, particularly for chicken and fish and in emerging markets. Religious proclivities constrain pork consumption in some countries in Asia and Africa. Outlook in N&S America strong
- Per capita meat consumption static or declining in many ageing, higher income markets BUT some consumers willing to pay more for less meat
- Environmental, health and animal welfare concerns of consumers need addressing by the global meat industry. Traceability & Transparency is key
- Flexitarian diets have market traction in many countries
- The wave of vegetarian products being introduced are consumer-friendly.
 Meat industry needs to respond by being more consumer-facing
- More competitors in the world of protein but also more opportunities!



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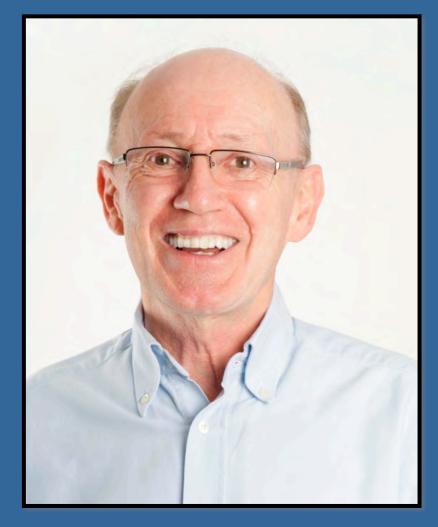
Telephone contact:

Mobile/Cell +44(0)7798 558276



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Retail Blog: www.supermarketsinyourpocket.com









MEAT DETOX RISE More young Brits are giving up bacon than booze this month as record numbers turn vegan, poll shows

Daily Mail January 2nd, 2019

Eight per cent of 16-24 year olds plan to follow a no meat or dairy diet for the month



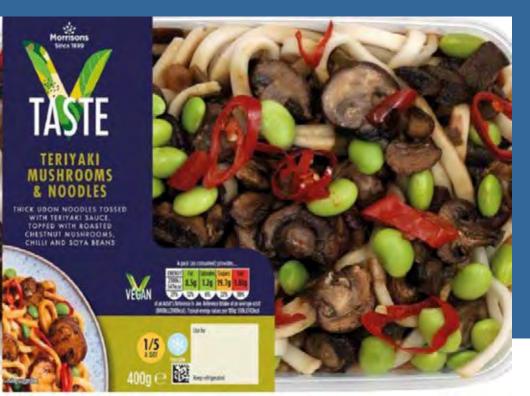
Imperial College London





New Vegan Range In "Blue Collar" Chain

November 20th, 2018









Palm Oil High on Hit List of Environmentalists (and Nutritionists)

ICELAND TO BE THE UK'S FIRST MAJOR SUPERMARKET TO REMOVE PALM OIL FROM OWN LABEL FOOD

Collapse in orangutan population provides urgent need for action

Iceland

April 10th, 2018

including the already critically endangered orangutan.





