Consumer Reports

Food safety and sustainability: making better food choices

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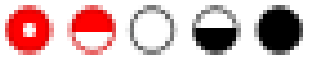
Hunter College
March 2016

Consumer Reports

- Mission: To work for a fair, just, and safe marketplace for all consumers and empower consumers to project themselves.
- Founded in 1936 (nearly **80-years old!) Consumer Reports is a non-profit** that executes its mission to serve consumers through unbiased product testing and ratings, research, journalism, public education, and advocacy.
- We are independent and accept **no ads**, **free samples**, or **corporate contributions** of any kind. We have strict conflict of interest policies and cannot invest in stock of what we test.
- We're an organization of about **600 staff**, including scientists, engineers, reporters, editors, fact checkers, lawyers, survey scientists and advocates

"Uninformed Choice Is Not Free Choice"

Colston Warne
Founder of Consumer Reports, 1936



Makeup of Consumer Reports

- **Testing and product ratings:** engineers, scientists, technicians, market and product analysts
- **Statistics:** sample design, data analysis, database analysis
- **Editorial:** investigative reporters, editors, fact checkers, top level copy editors
- **Communications:** media relations, social media, CR television
- **Survey and market insights:** national polling, consumer focus groups
- **Legal:** copy review, legal troubleshooting and response
- **Advocacy:** influencing international, federal, state and sometimes local policy
- **External Relations:** manage relations with government, industry, and strategic partnerships, help plan events, development

Urvashi's Background

- Environmental Health/Toxicology Ph.D. – Johns Hopkins
- Consumer Reports – 17 years, expert national spokesperson
- Direct Consumer Safety and Sustainability
- Lead Food Center & food safety
- Manage testing groups and scientific reports, advocate
- FDA Food Advisory Committee and ANSI Board of Directors
- Mom, cook, gardener, consumer!

Food Safety and Sustainability Center

-Science and data driven approach
-Conduct tests (some very large), national surveys, data analysis, contextualize safety & sustainability issues
-Compare products, production systems and assess root causes of problems
-Demonstrating healthier production practices that lead to safer food
-Shift market demand &advocate for marketplace change

Animal Welfare APPROVED

American Grassfed

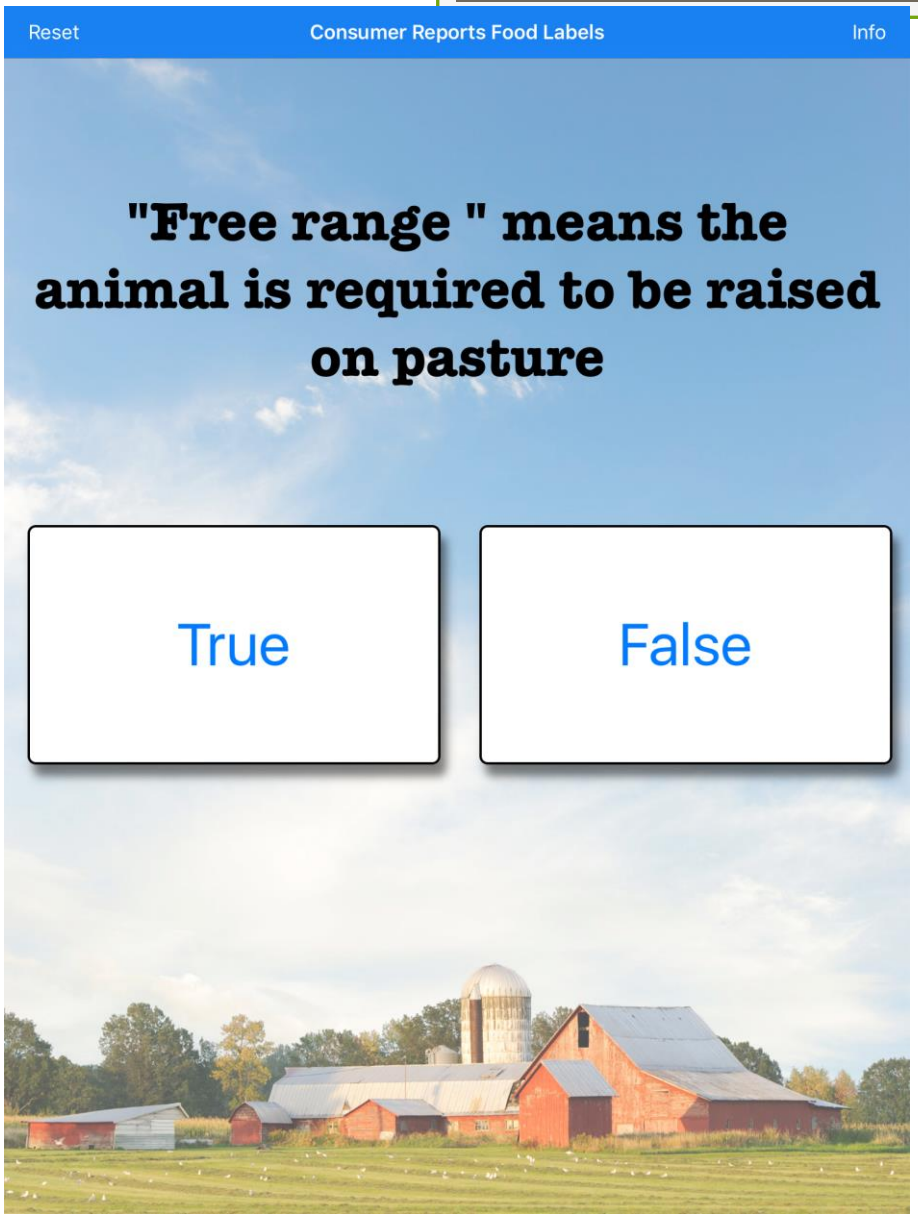
FAIRTRADE INTERNATIONAL

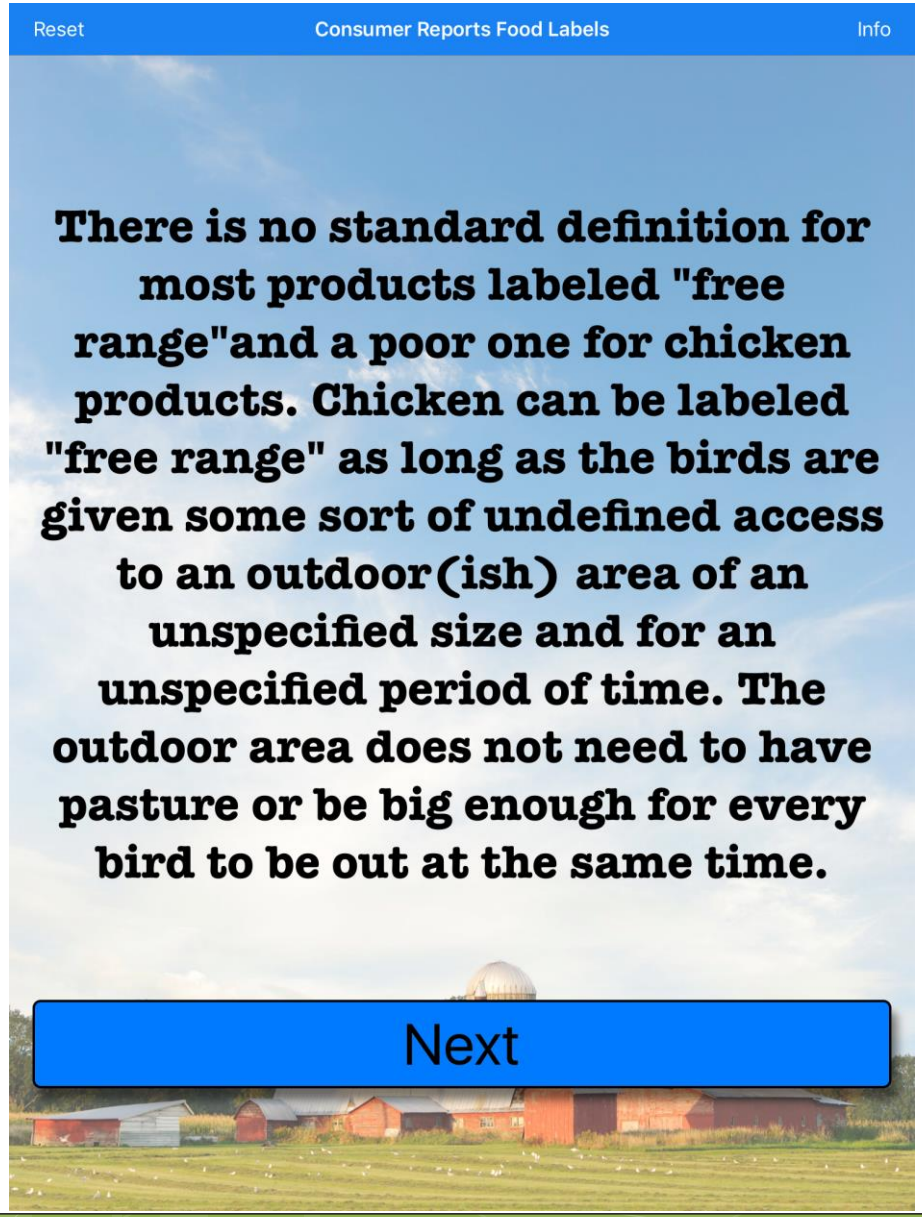
Food System Risks

- **Acute risks from food**
  - pathogen contamination
  - antibiotic resistance
- **Chronic risks from food**
  - heavy metal contamination
  - Food additives with poor safety profiles (e.g. caramel color)
- **Food system risks**
  - indiscriminant antibiotic use
  - poor hygiene
- **Systemic problems**
  - end of line solutions rather than addressing root cause of problems (e.g. hygiene v chlorine)
  - lack of or lax government regulation
    - Farm hygiene, manure management, food additives, truthful labeling, heavy metal standards for food and more
- **Better and more sustainable choices**
  - Labeling
  - Production practices

Food System Benefits

QUIZ TIME!


Reset
Consumer Reports Food Labels
Info
"Free range " means the animal is required to be raised on pasture
True
False


Reset
Consumer Reports Food Labels
Info
There is no standard definition for most products labeled "free range"and a poor one for chicken products. Chicken can be labeled "free range" as long as the birds are given some sort of undefined access to an outdoor(ish) area of an unspecified size and for an unspecified period of time. The outdoor area does not need to have pasture or be big enough for every bird to be out at the same time.
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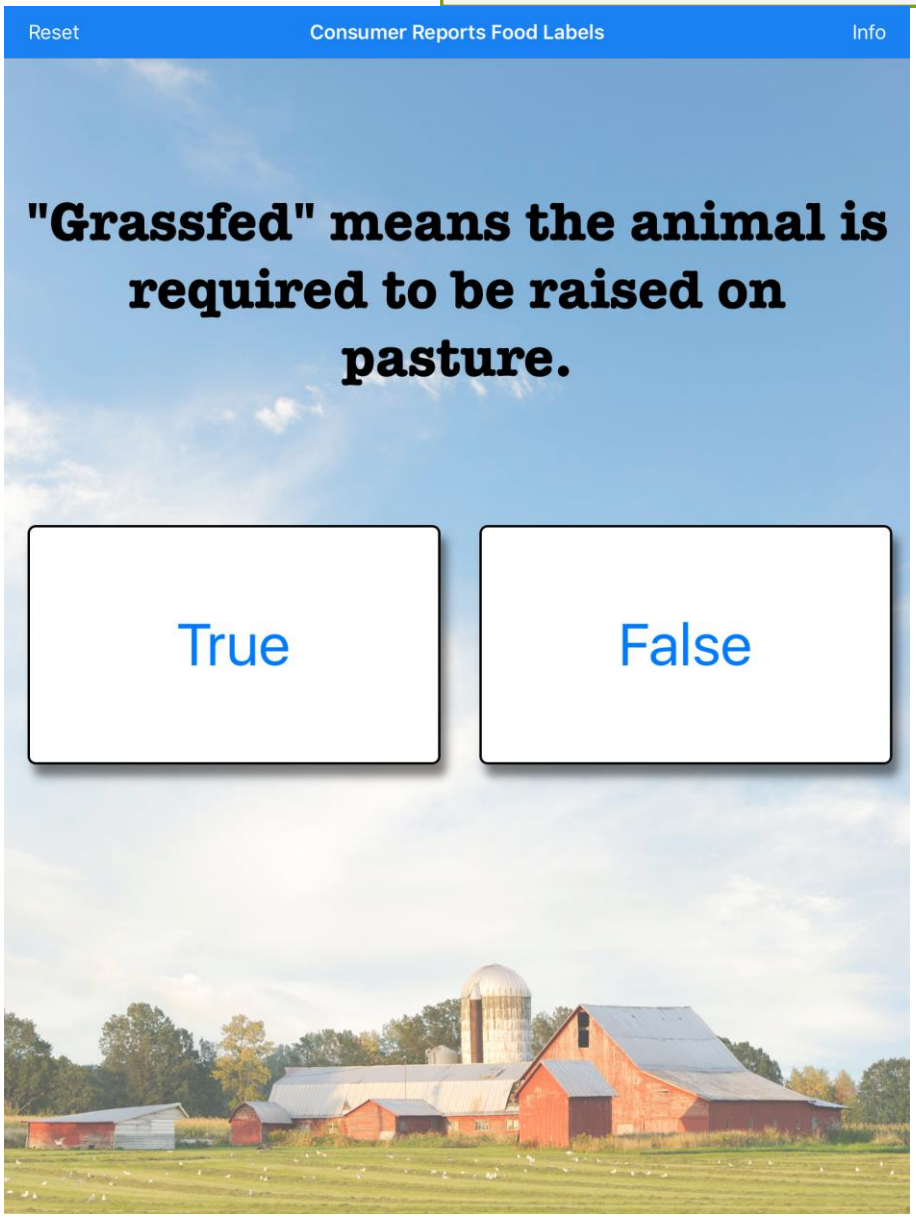
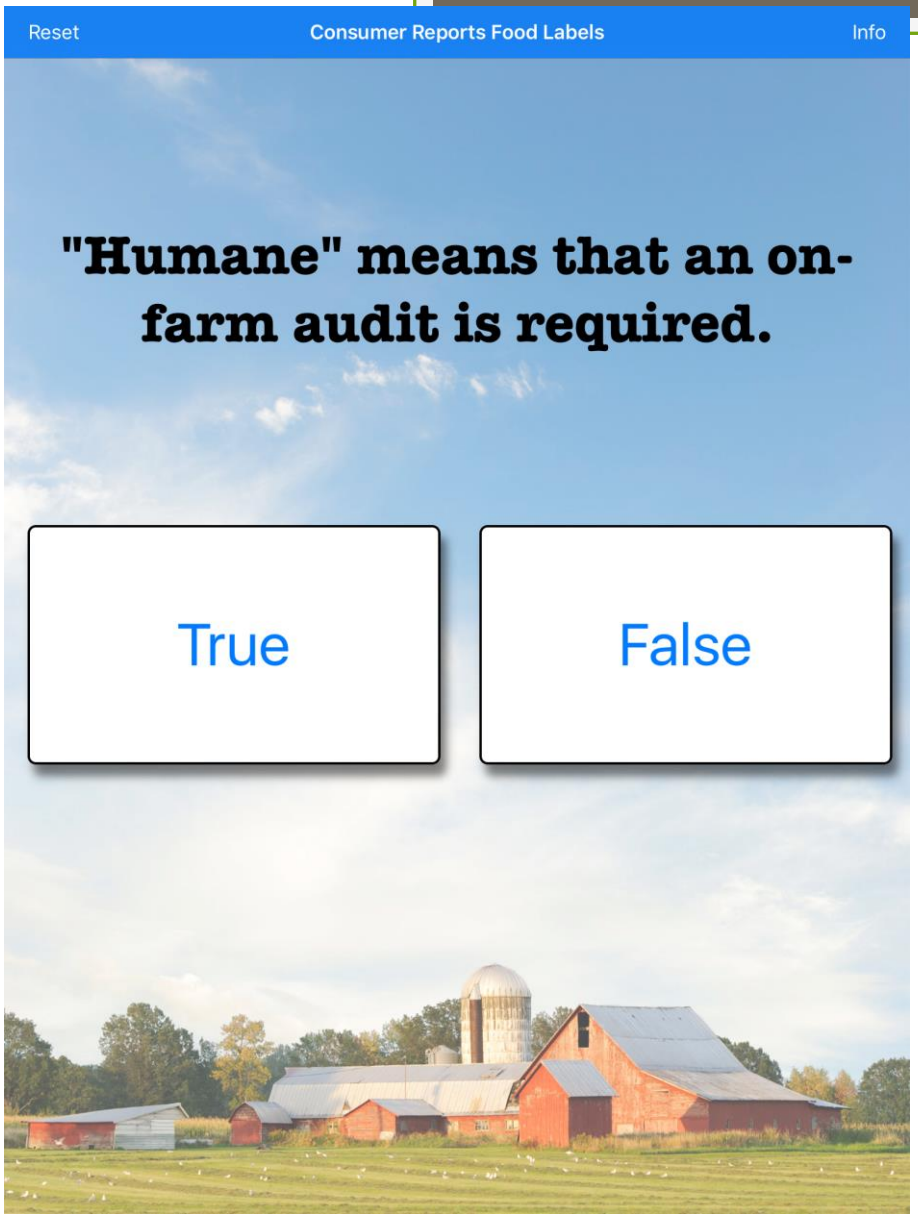
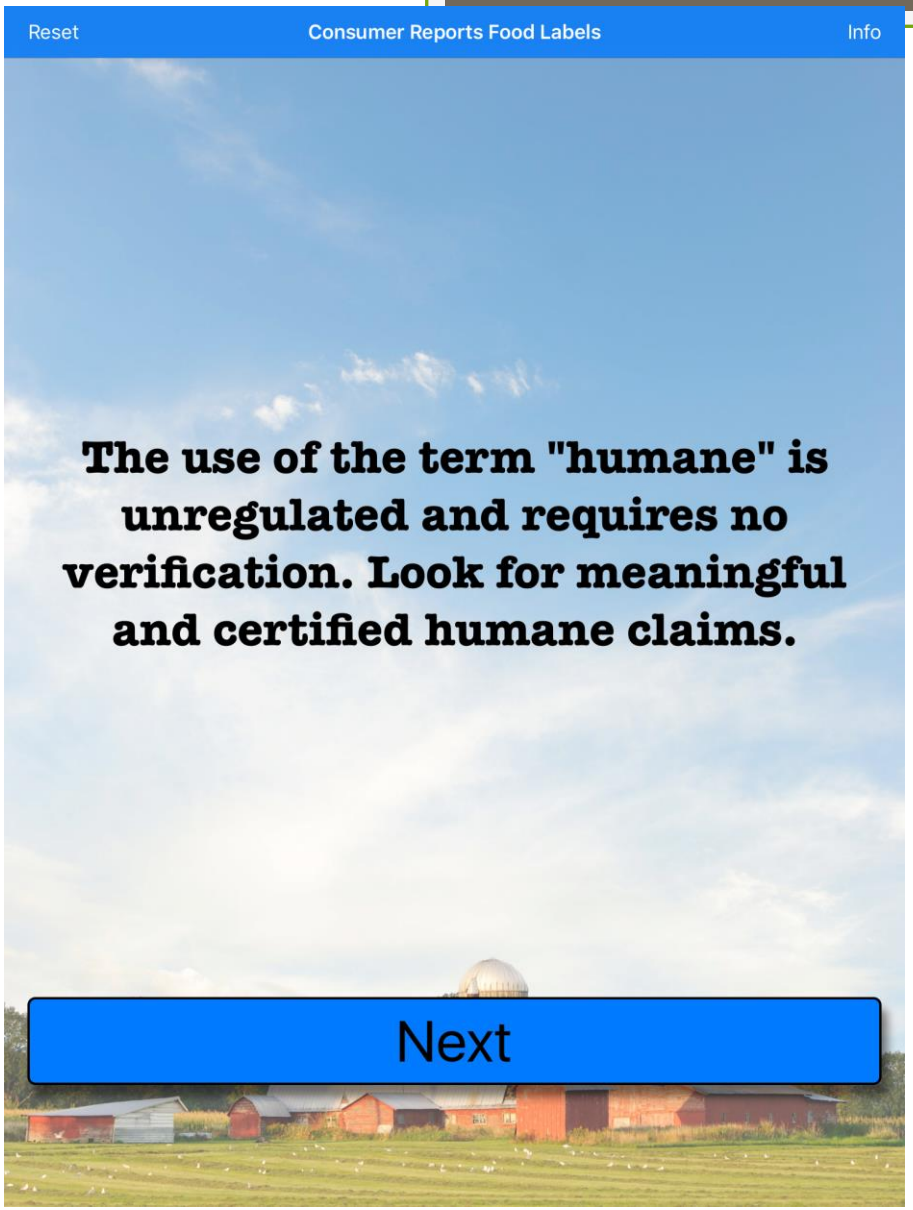

Reset
Consumer Reports Food Labels
Info
"Grassfed" means the animal is required to be raised on pasture.
True
False


Reset
Consumer Reports Food Labels
Info
The USDA only checks "grassfed" claims for beef, not dairy. For beef, products labeled "grassfed" can come from animals who do not receive full pasture and can be fed hay in a feedlot. Look for meaningful grassfed labels like American Grassfed Certified and GAP 5 or 5+ at Whole Foods.
Next


Reset
Consumer Reports Food Labels
Info
"Humane" means that an on-farm audit is required.
True
False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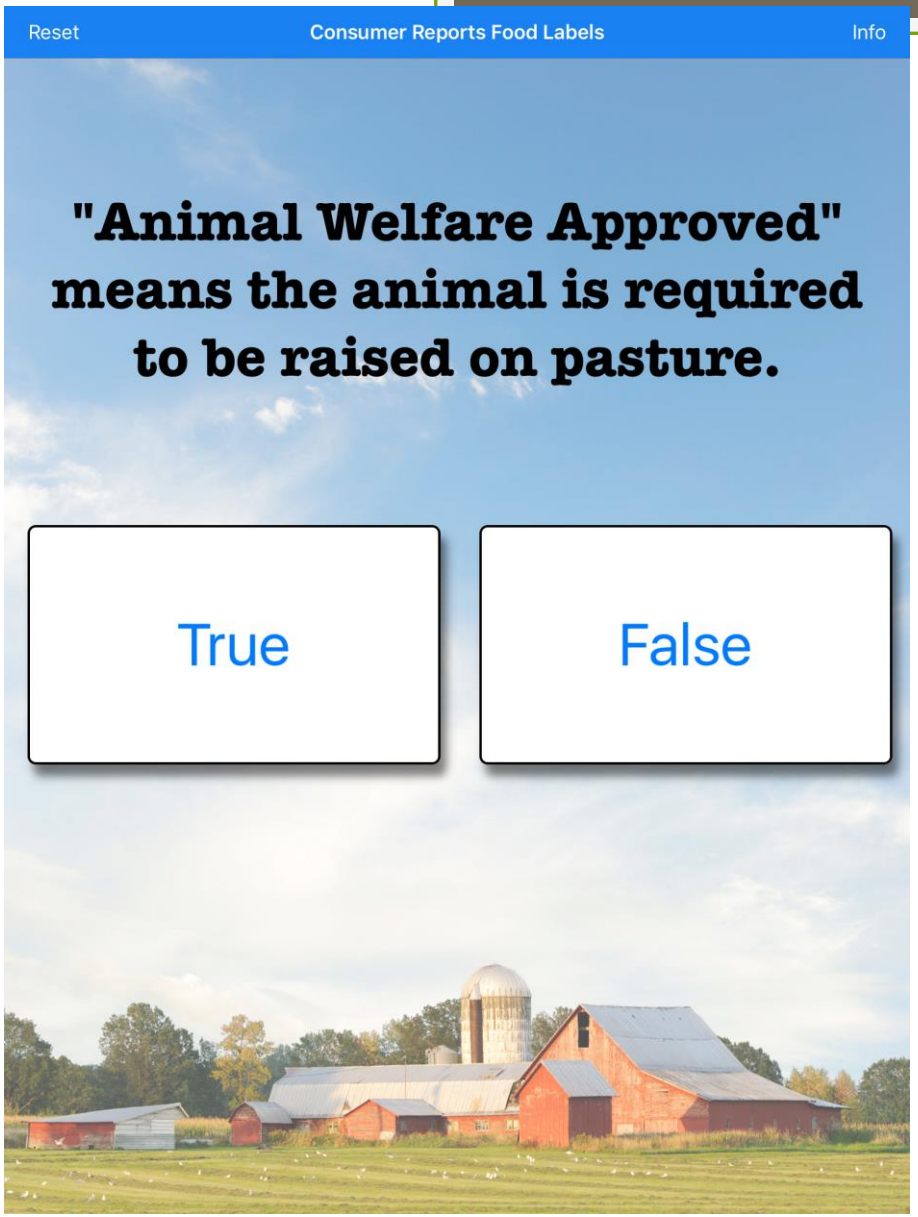
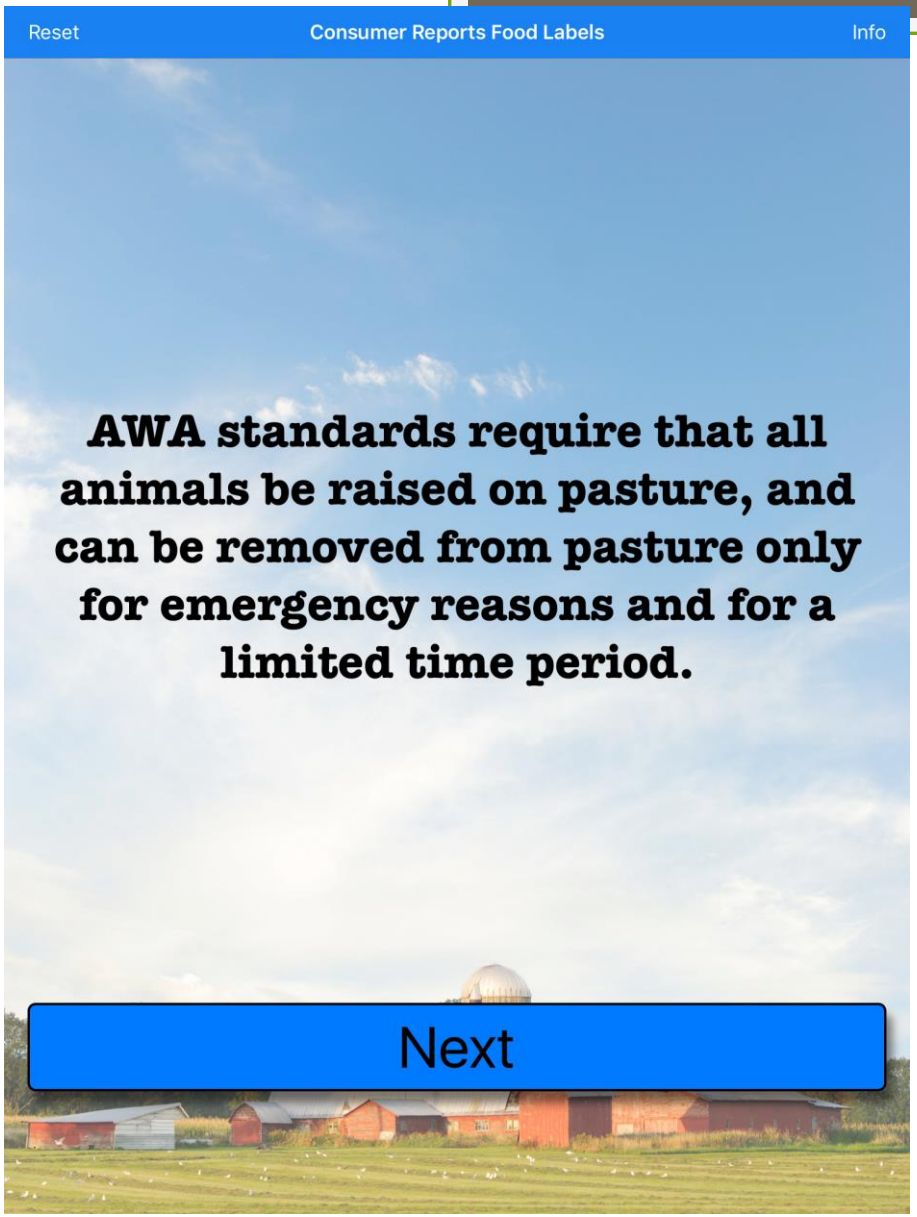
Consumer Reports Food Labels
Info
The use of the term "humane" is unregulated and requires no verification. Look for meaningful and certified humane claims.
Next


Reset
Consumer Reports Food Labels
Info
"Animal Welfare Approved" means the animal is required to be raised on pasture.
True
False


Reset
Consumer Reports Food Labels
Info
AWA standards require that all animals be raised on pasture, and can be removed from pasture only for emergency reasons and for a limited time period.
Next

Rating food labels – market choices

- Create sample groups for our test projects based on credible labels
- Comparatively rate food labels for environmental, animal and worker welfare
- Survey consumer sentiment, attitudes, behaviors
- Watchdog label programs like organic
- Advocate for more truthful, transparent and meaningful labeling

Key Questions

- How are consumers being misled?
  - What do consumers think food labels mean?
  - What are the standards?
- What are consumer expectations?
  - What standards do consumers want for food labels?
  - Is there a trend over time? (Survey from 2014 and 2015)

AMERICA'S *most* WANTED *food* LABELS

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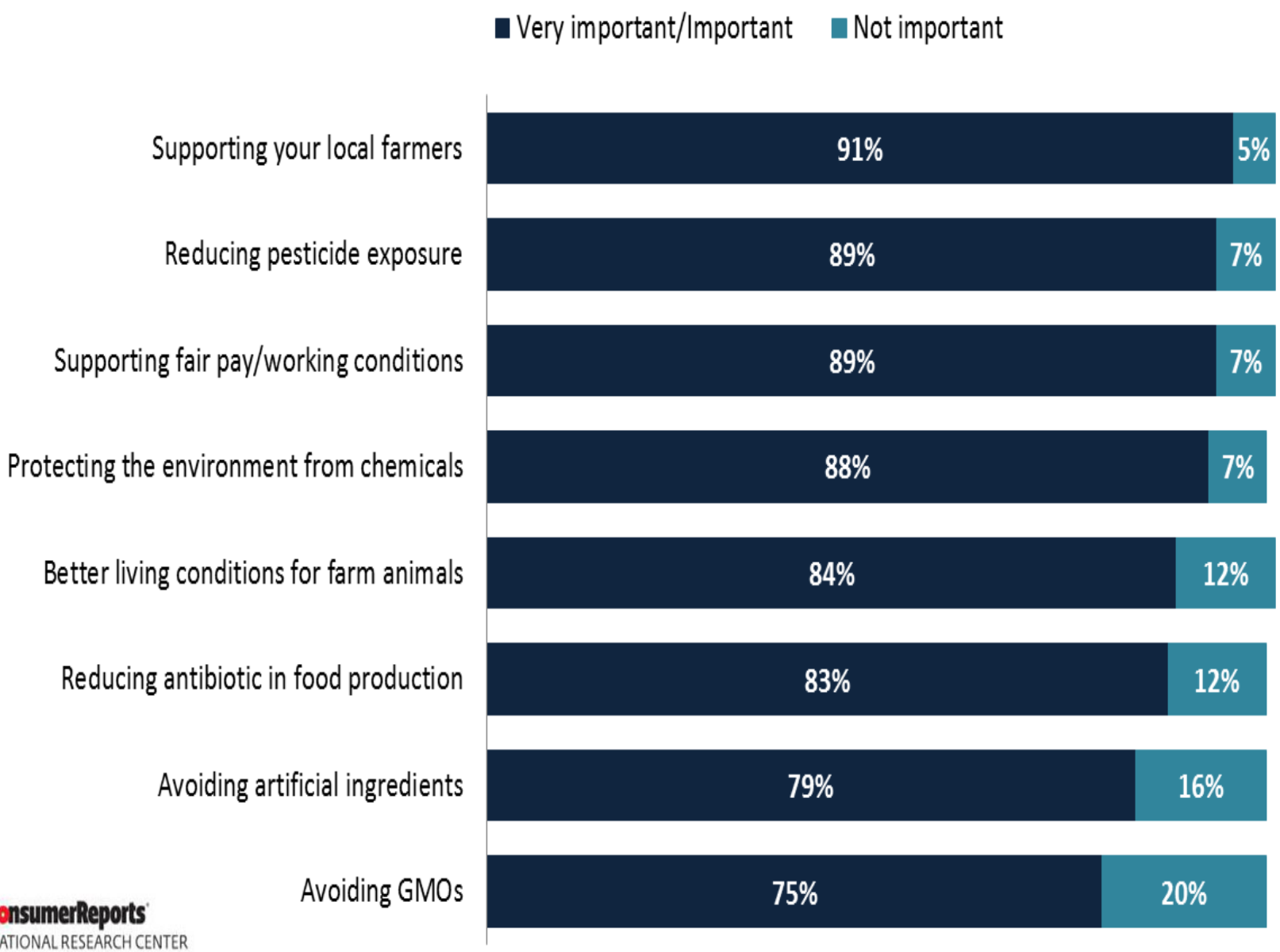
NATIONAL RESEARCH CENTER

What Consumers Want from Their Food



ConsumerReports
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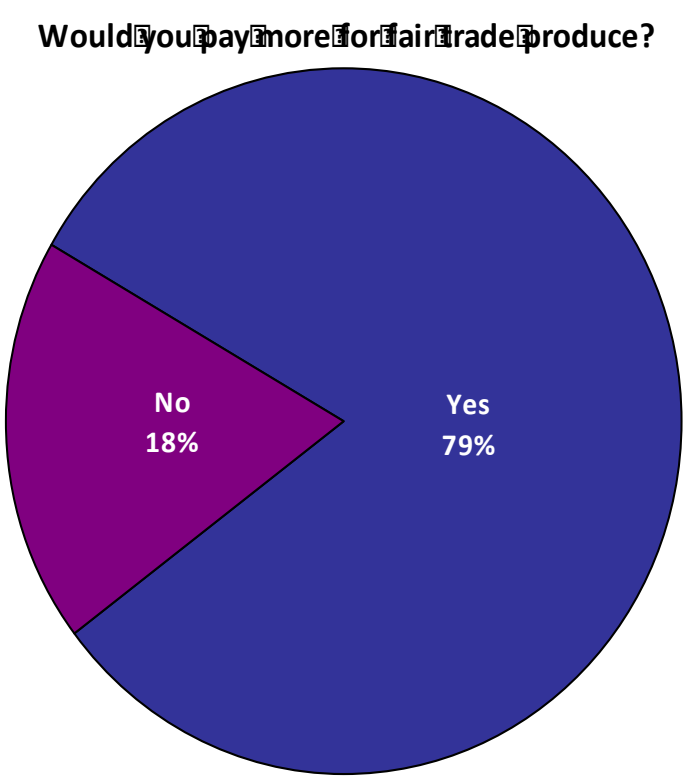
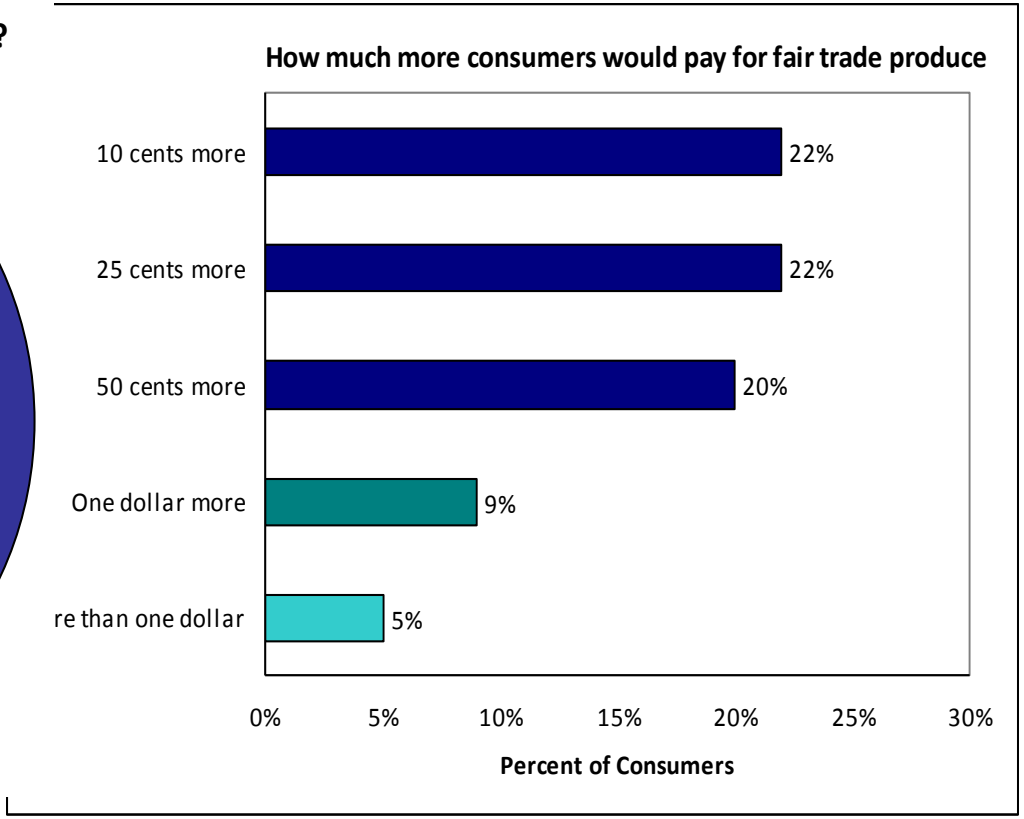
December 2015

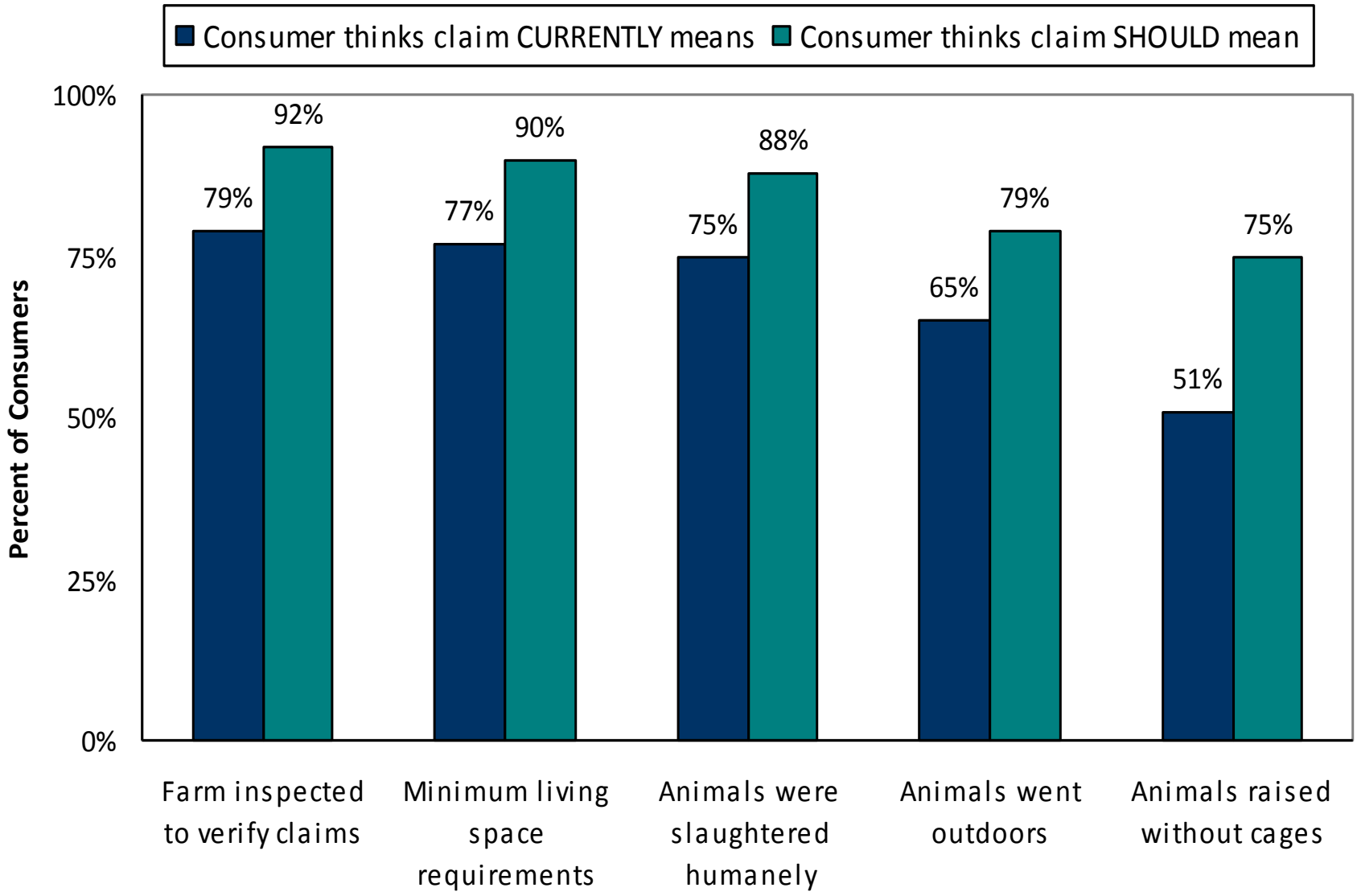
Consumer interest in worker welfare





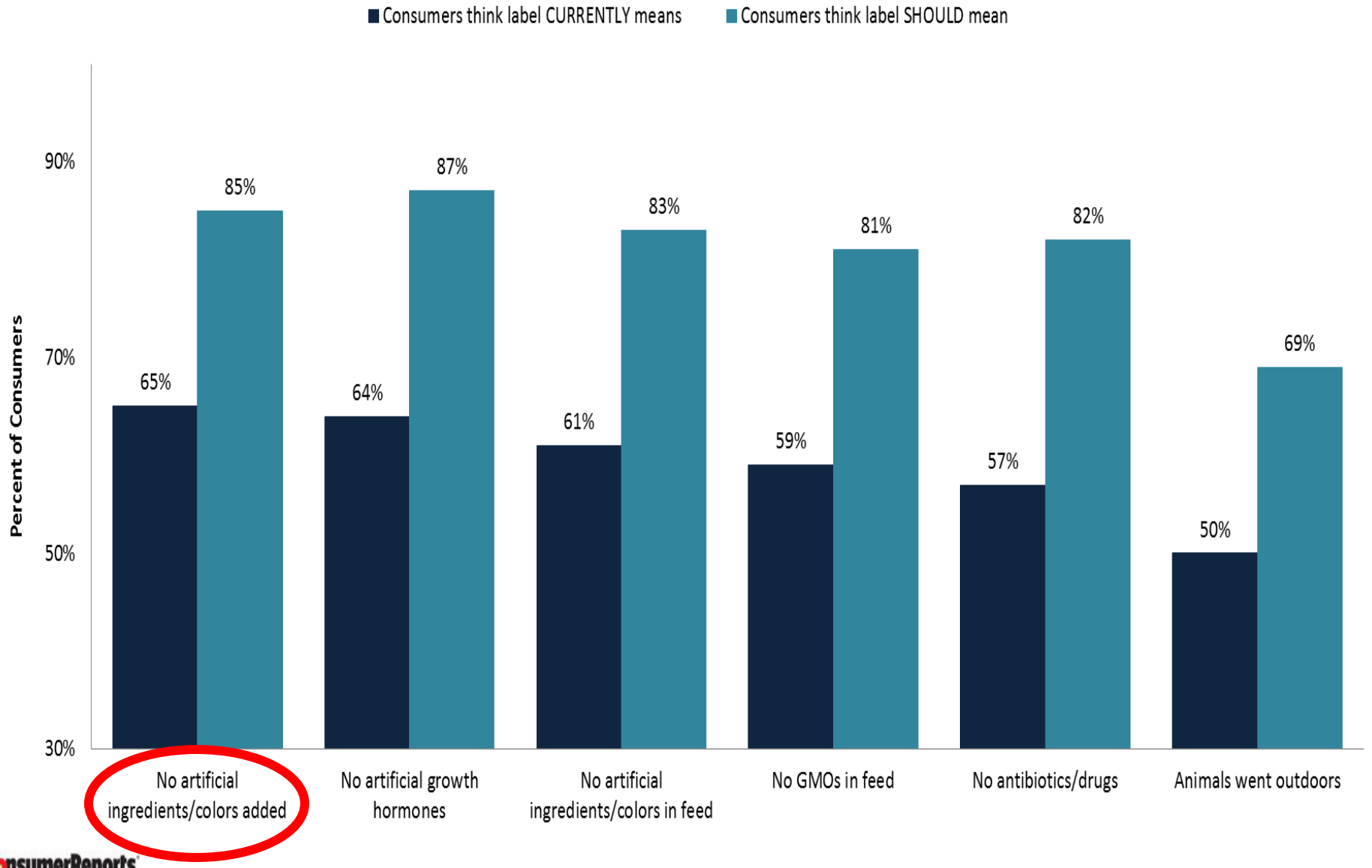
Consumer Reports National Research Center 2014

Consumer Perception of HUMANELY RAISED Claim on Eggs, Dairy and Meat



Source: **CONSUMER REPORTS® NATIONAL RESEARCH CENTER 2014**

Consumer perceptions and expectations of "natural" on *meat* (USDA)



ConsumerReports
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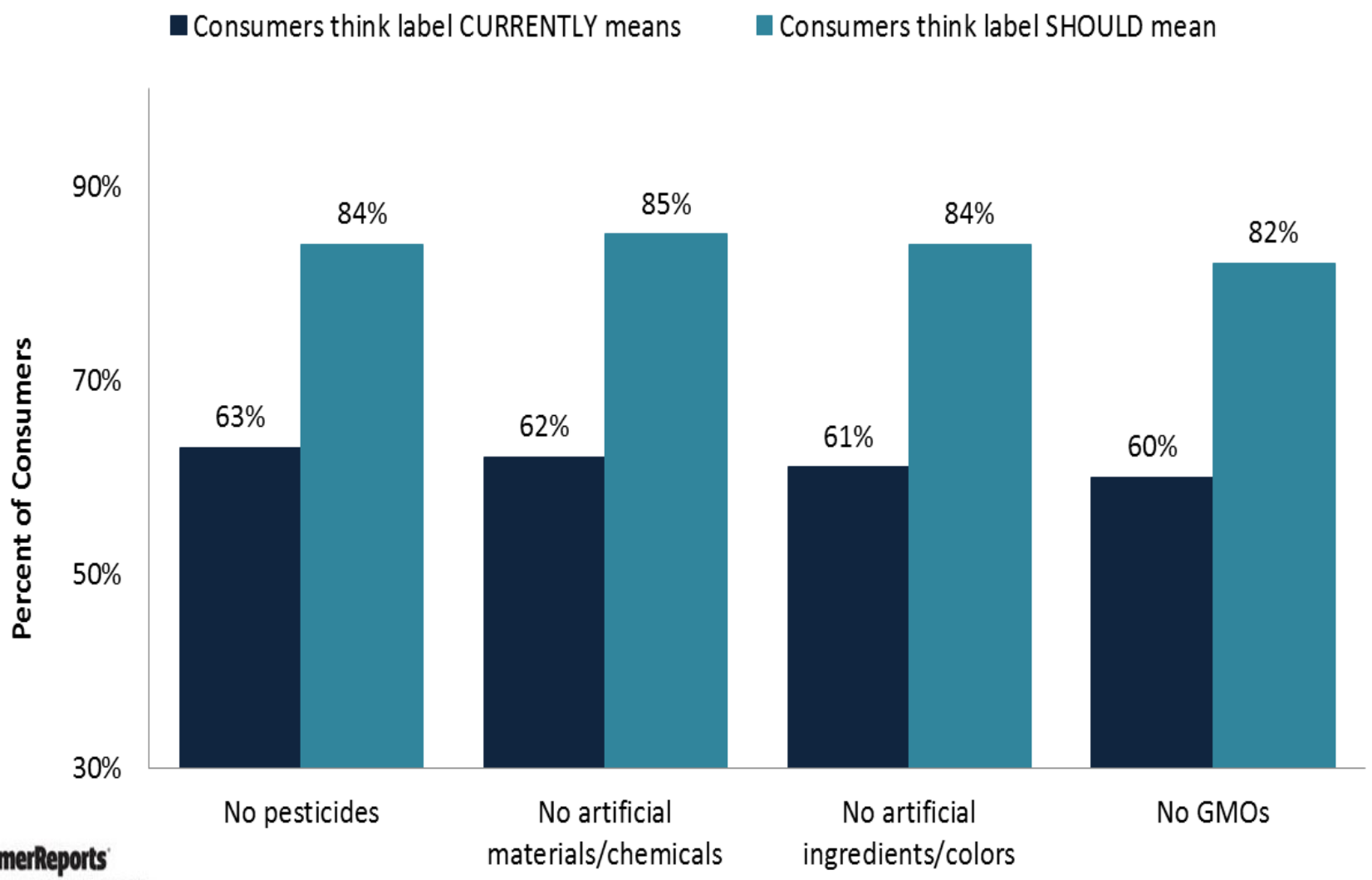
December 2015

Consumer perceptions and expectations of "natural" on *processed food* (FDA)



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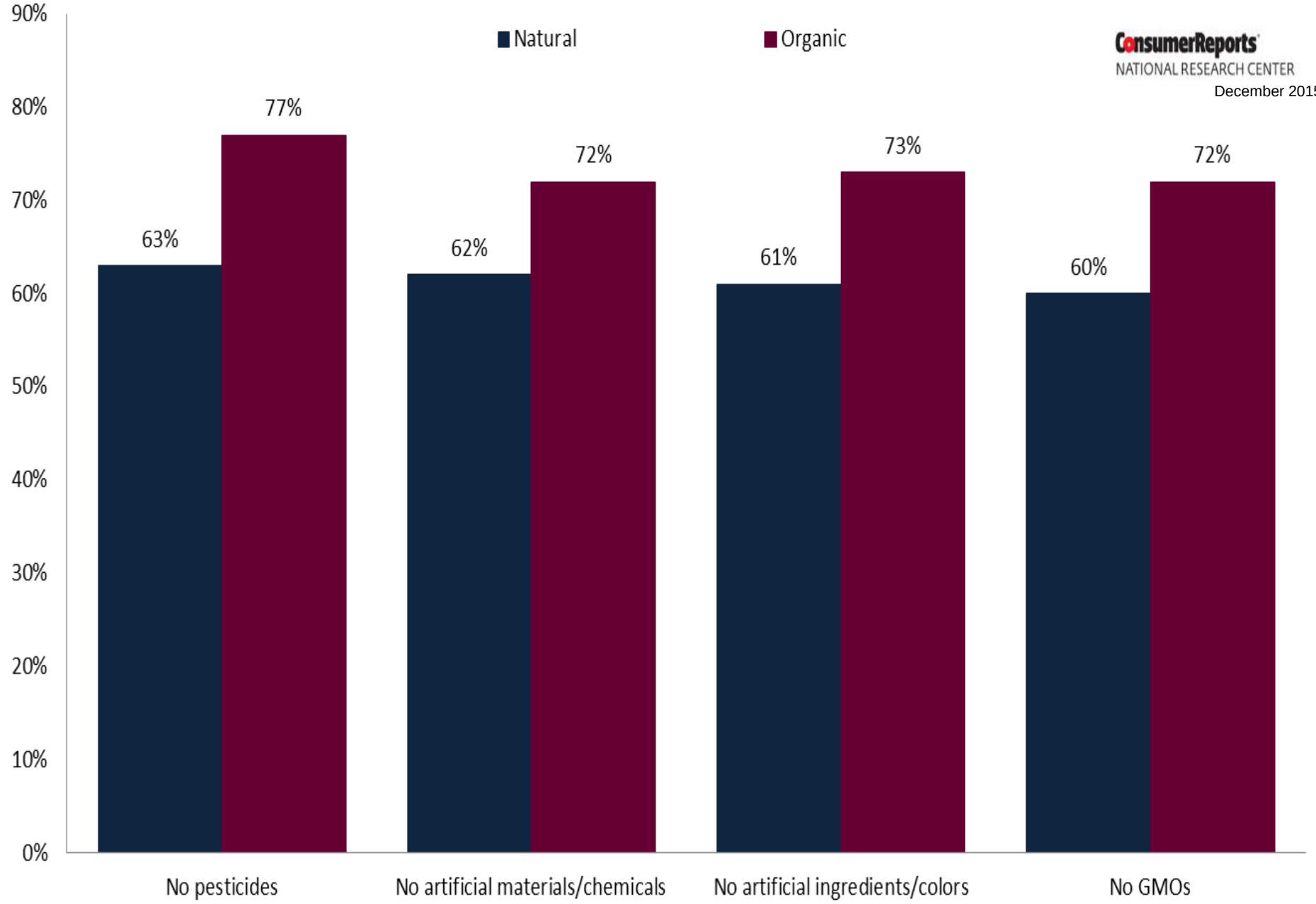
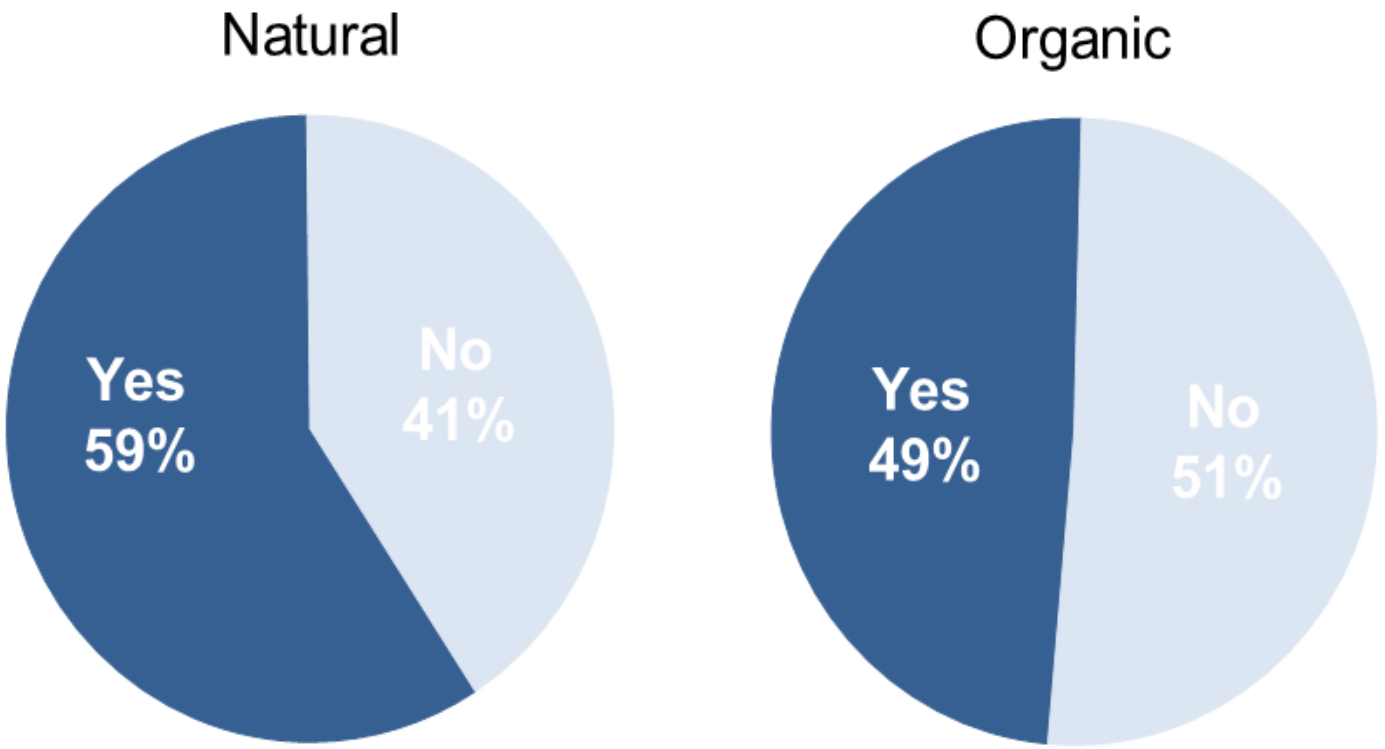
What Consumers Think Natural and Organic Mean on Processed Foods



More Consumers Look for Natural Label Than Organic Label



Source: **Consumer Reports® National Research Center 2014**

Natural label campaign

- 2014 survey shows majority of consumers misled by "natural" label
- Petitions to ban claim filed with FDA and USDA
- 200,000+ signatures
- Alternatively, advocate for setting high bar: organic + no artificial ingredients for processed foods
- Nov 2015 – FDA announces open comment period. CR petition cited.
- May 10, 2016 – FDA closes comment period on "natural label" –CR sign on petition @ greenerchoices.org

NOVEMBER 10, 2014

Should the F.D.A. Regulate the Use of 'Natural' on Food Products?

INTRODUCTION

General Mills has been sued for calling Nature Valley products "natural" though they contain processed ingredients.

Hiroko Masuike for The New York Times

Though the "organic" label has been strictly defined and regulated since 2002, the Food and Drug Administration has declined to define the frequently used term "natural."

The F.D.A.'s nonbinding advisory opinion states that "natural" means "nothing artificial or synthetic (including colors regardless of source)" or anything in the product that

DEBATERS


A Term to Define and Enforce

ROBERT LUSTIG, PRESIDENT, INSTITUTE FOR RESPONSIBLE NUTRITION AND MARSHA COHEN, LAWYERS FOR AMERICA

The rules of commercial speech allow companies to say things that are meaningless and misleading.

A Waste of F.D.A. Resources

RICHARD WILLIAMS, ECONOMIST AND FORMER FDA OFFICIAL

Since most of what people want to avoid by eating "natural" food has no basis in science, the F.D.A. should not get involved.

Ban 'Natural' as a Marketing Label

URVASHI RANGAN, CONSUMER REPORTS

"Organic" foods don't meet every consumer expectation, but the term is a verified label and the U.S.D.A. is accountable for its integrity.

Calling G.M.O.'s 'Unnatural' Suggests They Are Unhealthy

DOUG VAN HOEWYK, BOTANY PROFESSOR

All crop varieties are genetically altered compared to the wild plants from which they have been bred.

The Word, Like Our Food, Has Become Polluted

VANI HARI, THE FOOD BABE

Consumers Must Pay More Attention to Agriculture

BENJAMIN COHEN, AUTHOR,

Labels can create meaningful demand

HighlyMeaningful

100% Organic

Meaningful

Visit greenerchoices.org for more info

Somewhat Meaningful

Misleading labels that undermine true demand

“Natural”
“Free Range”
“Grass-fed”
“No nitrates”

“No antibiotics used for growth promotion”

“Humanely Raised”

“Pesticide Free”

Visit greenerchoices.org for more info

USDA verify for hire

AMERICA'S *most* WANTED *food* LABELS

Courtesy of Animal Welfare Approved

Consumer Reports food stories 2015-2016

- Arsenic in rice and alternative grains Jan 2015 *
- GMOs in corn and soy processed foods Feb 2015
- Caramel color in soda Feb 2015 *
- Pesticides in produce March 2015
- Shrimp April 2015
- Ground beef October 2015
- Antibiotics in meat production January 2016
- Misleading natural labels March 2016

Other past / ongoing food issues:

- Mercury in fish and seafood
- Arsenic in apple (pear, grape) juice
- Chicken
- Turkey
- Pork
- Food additives
- Label ratings and watchdogging

Consumer Reports' Coverage on Meat 2012-2015

- Chicken
- Ground turkey
- Pork
- Ground beef
- Shrimp

Talking turkey

Our new tests show reasons for concern

IN OUR FIRST-EVER lab analysis of ground turkey bought at retail stores nationwide, more than half of the packages of raw ground meat and patties tested positive for fecal bacteria. Some samples harbored other germs, including salmonella and staphylococcus aureus, two of the leading causes of foodborne illness in the U.S. Overall, 90 percent of the samples had one or more of the five bacteria for which we tested.

Adding to the concern, almost all of the disease-causing organisms in our 257 samples proved resistant to one or more of the antibiotics commonly used to fight them. Turkeys (and other food animals, including chickens and pigs) are given antibiotics to treat acute illness; but healthy animals may also get drugs daily in their food and water to boost their rate of weight gain and to prevent disease. Many of the drugs are similar to antibiotics important in human medicine.

That practice, especially prevalent at large feedlots and mass-production facilities, is speeding the growth of drug-resistant superbugs, a serious health concern. People sickened by those bacteria might need to try several antibiotics before one succeeds.

Among our findings:

- Sixty-nine percent of ground turkey samples harbored enterococcus, and 60 percent harbored Escherichia coli. Those bugs are associated with fecal contamination. About 30 percent of the enterococcus bacteria were resistant to three or more groups of closely related antibiotics (or classes), as were more than half of the E. coli.
- Three samples were contaminated with methicillin resistant staphylococcus aureus (MRSA), which can cause fatal infections.
- Ground turkey labeled "no antibiotics," "organic," or "raised without antibiotics" was as likely to harbor bacteria as products without those claims. (After all, even meat from organic birds can pick up bacteria during slaughter or processing.) The good news is that bacteria on those products were much less likely to be antibiotic-resistant superbugs. For details on our results, go to ConsumerReports.org/turkey0612.

The Food and Drug Administration, which regulates approval of human and animal antibiotics, analyzes bacteria levels in ground turkey and other retail meats, as we've done. In 2011 the agency found even higher rates of contamination than ours.

From barn to burger

Conventionally raised turkeys are fed mostly corn and soybean meal plus a vitamin and mineral supplement. They usually get FDA-approved antibiotics that may be given in low doses without a prescription. Before the birds are killed, antibiotics must be withdrawn to ensure that residues clear from the birds' systems.

But harm may already have been done. Although the antibiotics eventually kill off vulnerable barnyard bugs, bacteria that are immune to their effects can flourish and spread. They can exchange genetic material with other bugs, further accelerating antibiotic resistance. And bacteria on turkeys can develop resistance to similar drugs that aren't even given to turkeys.

Some bacteria that end up on ground turkey, including E. coli and staph aureus, can cause not only food poisoning but also urinary, bloodstream, and other infections.

Antibiotics aren't allowed in turkeys labeled "organic," "no antibiotics," or "raised without antibiotics." (Sick birds may be treated, but they're then sold to nonorganic markets.) Organic birds must eat only certified organic feed and pasture, which means no genetically modified organisms; and production of those birds must not

Germ count

We found many samples of turkey that harbored germs, especially the fecal bacteria enterococcus and E. coli. (Some forms of E. coli can cause severe illness. But our tests didn't differentiate among the forms. In any case, you don't want E. coli in your food.)

Levels of contamination

Bacterium	Positive samples
Enterococcus	69%
Escherichia coli	60
Staphylococcus aureus	15
Salmonella	5
Campylobacter	0

What's in that pork?

We found antibiotic-resistant bacteria—and traces of a veterinary drug

OUR ANALYSIS of pork chop and ground pork samples from around the U.S. found that Yersinia enterocolitica, a bacterium that can cause fever, diarrhea, and abdominal pain, was widespread. Some samples harbored other potentially harmful bacteria, including salmonella. And there are more reasons to be concerned about "the other white meat."

Some of the bacteria we found in 198 samples proved to be resistant to antibiotics commonly used to treat people. The frequent use of low-dose antibiotics in pork farming may be accelerating the growth of drug-resistant "superbugs" that threaten human health.

About one-fifth of the 240 pork products we analyzed in a separate test harbored low levels of the drug ractopamine, which the U.S. approved in 1999 to promote growth and leanness in pigs. It's commonly used in pigs raised for food in the U.S., but is banned in the European Union, China, and Taiwan. Our food-safety experts say that no drugs should be used routinely in healthy animals to promote growth. Here are details from our tests:

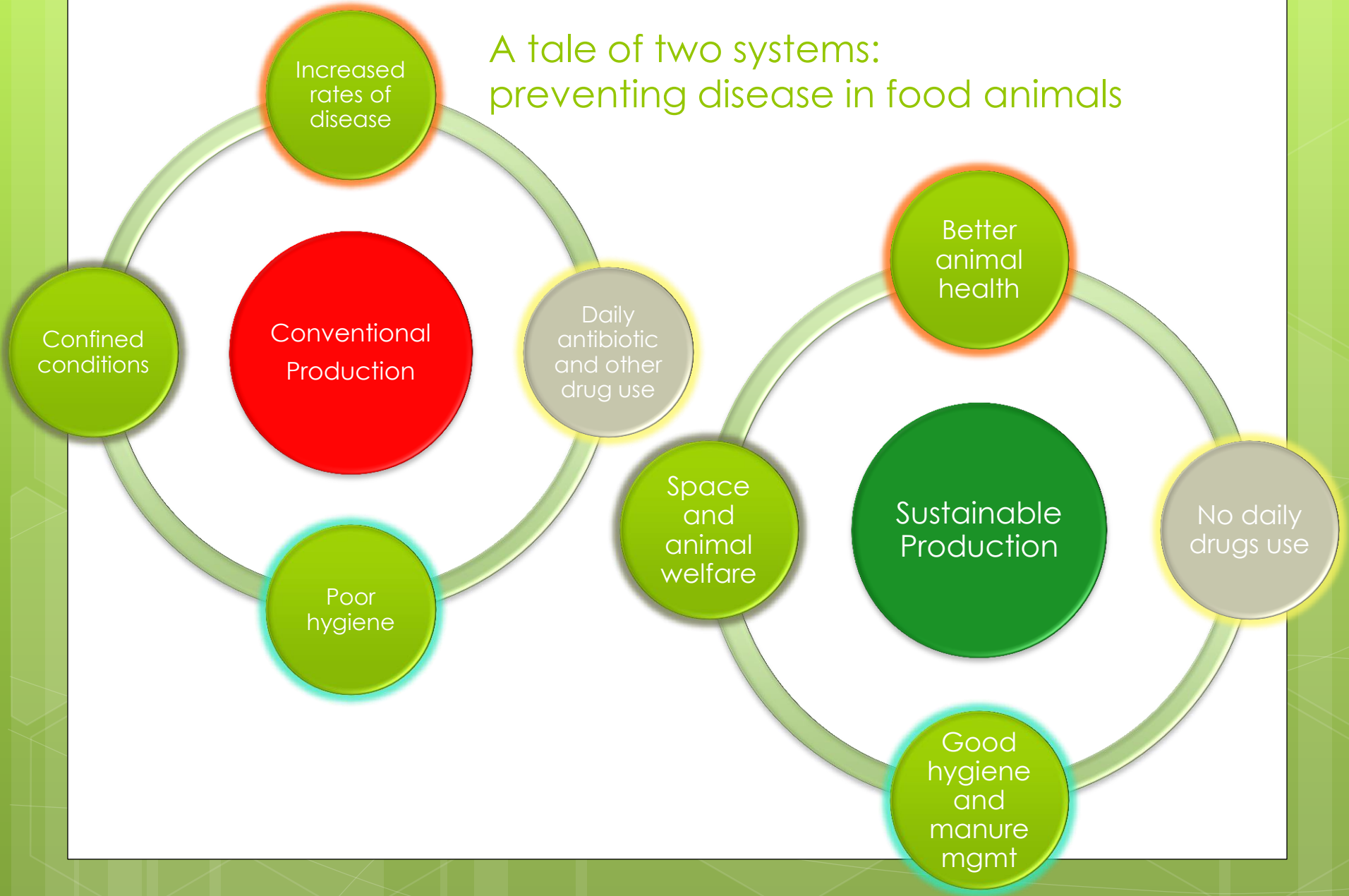
- Yersinia enterocolitica was in 69 percent of the tested pork samples. It infects about 100,000 Americans a year, especially children. We found salmonella, staphylococcus aureus, or listeria monocytogenes, more common causes of foodborne illness, in 1 to 7 percent of samples.
- And 11 percent harbored enterococcus, which can indicate fecal contamination and can cause problems such as urinary tract infections.
- Some of the bacteria we found were re-

DID YOU KNOW?

Years ago, trichinosis was the main fear about eating pork. But the risk from that parasite was largely eradicated by changes in industry practices (legislation banned the feeding of certain raw foods to hogs) and public awareness of the risks of eating undercooked meat.

TESTING
CONSUMER SURVEYS
BETTER CHOICES
UNNECESSARY RISKS
GAPS IN REGULATION

A tale of two systems: preventing disease in food animals



Investigating meat

- Pathogens and other potentially harmful bacteria
- Antibiotic resistant organisms and rates
- Virulence genes (s. aureus, c. perfringens, e.coli)
- Correlate to product type, plant #, brands, production practice (wild, organic, no antibiotics)
- Contextualize findings to larger perspective of food systems and identify gaps in policies that impact environment and public health
- Identify and rate better choices in the market
- Advocate for better production practices and labeling
- Campaign against misleading labeling
- Promote meaningful labeling

2014 Chicken Study Results (4th test)

- Enterococcus (79.8%), e.coli (65.2%), campylobacter (43%), klebsiella pneumonia (13.6%), salmonella (10.8%), and staphylococcus aureus (9.2%)
- Since 1998, Consumer Reports' tests of chicken have shown salmonella rates have not changed much, ranging between 10 and 16 percent.
- 13% of samples from conventional samples contained multidrug resistant bacteria vs. 3% of no-antibiotic +/- organic raised chicken
- 17.5% of the e.coli had ExPEC virulence genes
- During our tests, we discovered one sample was a Foster Farms chicken breast associated with the 2013-14 outbreaks. Confirmed match to one of the outbreak strains (Salmonella Heidelberg) .

THE MOST MISLEADING LABEL

A Consumer Reports survey on chicken safety found that more than half of the 1,005 U.S. residents polled thought that "natural" chickens didn't receive antibiotics or genetically modified feed. Forty-two percent thought the word meant that the birds were raised outdoors. More than one-third thought "natural" was equal to "organic." But it doesn't mean any of those things. You should simply ignore "natural" claims.

Consumer Reports National Research Center, Survey, 2013

Change…

- FSMA passage and implementation
- *Salmonella* performance standard has decreased over time from 20% to 7.5% prevalence rate on broilers
- *Campylobacter* now included in HACCP
- 2016 – standards established for poultry parts but many other meat parts without standards
- Limiting antibiotic use – FDA acknowledgement (213), bills to push harder (Slaughter), California
- 4/4 arsenical drugs in poultry feed off market by end of 2015
- Empirically demonstrate benefit from sustainable practices like not using antibiotics to influence policy
- Stop routine feeding of antibiotics and other drugs to healthy animals (450 drugs approved in animal ag)

Shrimp

- 342 samples of frozen shrimp – 284 raw and 58 cooked
- Salmonella, vibrio, staphylococcus aureus, E. coli, and listeria
- 60% of the raw samples had 1+ bacteria type
- 28% raw shrimp samples had vibrio
- 7 raw shrimp samples had MRSA
- 11imported raw shrimp samples (5% of imported) had illegal antibiotic residues including tetracyclines including those with GAA-BAP labels
- No residues in wild samples and lower rates of antibiotic resistant bacteria

- Recommendations:
  - Eat sustainably raised wild shrimp.
  - Choose meaningful labels (greenerhoices.org) and avoid those that aren't

  - Establish credible organic standards for farmed shrimp sold in US (expecting proposal in 2016)
  - Increase inspections and testing: About 94 percent of America's shrimp is imported. In 2014, FDA examined only 3.7 percent of foreign shrimp shipments, and tested only 0.7 percent
  - Add Vibrio to bacteria that should be controlled (Vibrio infections uniquely on the rise in the US, controls for other shellfish but not shrimp)

Full Scientific Report on conventional and sustainable production systems, comparative labeling ratings, and full test results at
http://www.greenerchoices.org/products.cfm?product=0415shrimp

Country of origin

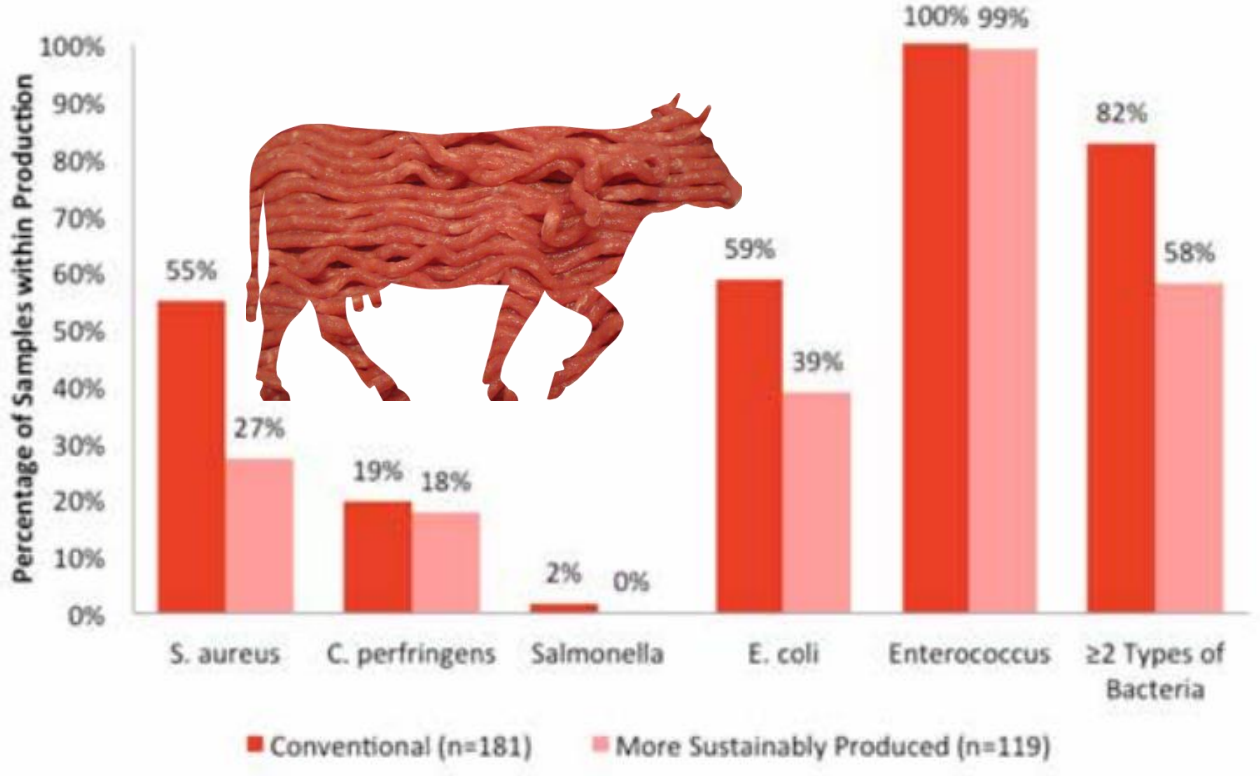
Table 7. Proportions of uncooked shrimp samples with bacterial resistance to antibiotic classes.

Country of Origin (Production Type, Number of Samples With at Least One Isolate)	No Resistance	Resistance to 1 Class	Resistance to 2 Classes	Resistance to 3 Classes	Resistance to More than 3 Classes
Ecuador (Farmed, n=11)	18%	9%	46%	9%	18%
Vietnam (Farmed, n=25)	20%	24%	28%	16%	12%
Bangladesh (Farmed, n=10)	20%	20%	20%	30%	10%
Mexico (Farmed, n=3)	33%	33%	0%	33%	0%
India (Farmed, n=35)	40%	34%	17%	9%	0%
Indonesia (Farmed, n=26)	46%	15%	31%	4%	4%
Thailand (Farmed, n=18)	50%	17%	33%	0%	0%
Argentina (Wild, n=8)	50%	37%	13%	0%	0%
Mexico (Wild, n=4)	50%	25%	25%	0%	0%
U.S. (Farmed, n=3)	67%	0%	33%	0%	0%
U.S. (Wild, n=21)	67%	14%	14%	5%	0%
China (Farmed, n=4)	75%	0%	25%	0%	0%

n is the number of samples with at least one bacterial isolate

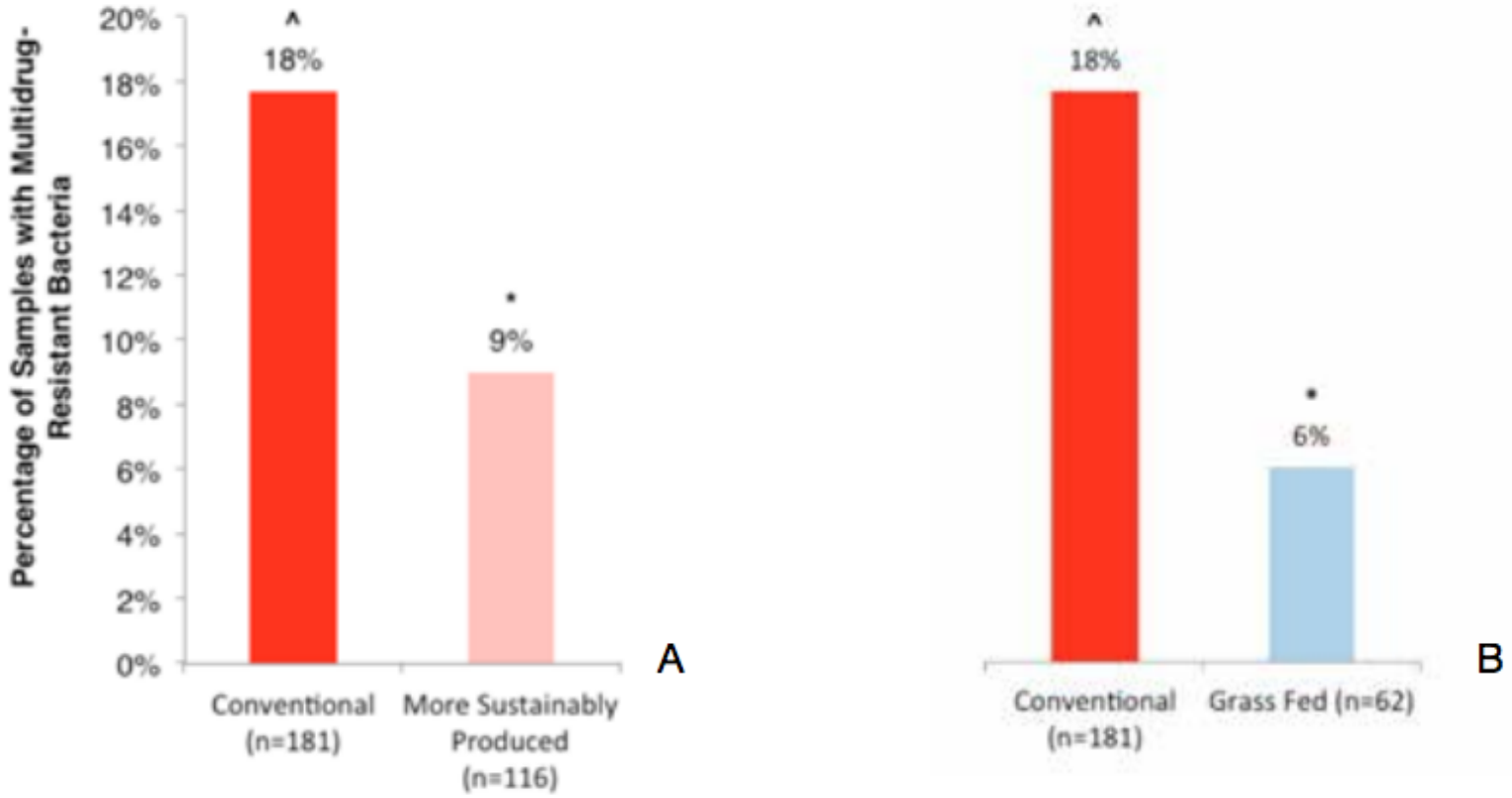
Ground beef bacteria prevalence

- 300 samples raw, ground beef, 181 conventional samples, 119 more sustainable (all no abs +/- organic +/- grassfed)



- Not enough samples to detect toxic e.coli (<0.5% prevalence)
- C. perfringens – 1million illnesses annually (40% beef related)
- Staph (food) tox gene - 12.5% conventional v. 6% more sustainable

Multiple Drug Resistance



Consumer Reports®

FOOD SAFETY & SUSTAINABILITY CENTER

LABEL	VERIFICATION	FEED			PRUDENT DRUG USE		SUSTAINABLE AGRICULTURE				ANIMAL WELFARE							
● NO ● YES ● PARTIAL	Is It Verified?*	Do standards require 100% grass-based feed?	Do standards prohibit animal waste in feed?	Do standards prohibit pesticides as feed additives?	Do standards prohibit antibiotics or require that antibiotics be used only to treat individual sick animals?	Do standards prohibit artificial growth hormones and other drugs to promote growth?	Do standards prohibit synthetic fertilizers and synthetic pesticides on pasture and in feed?	Do standards prohibit GMOs in pasture and in feed?	Do standards address responsible manure management?	Do standards require responsible pasture management?	Do standards prohibit feedlots?	Do standards require protection from extreme weather?	Do standards require access to dry bedding?	Do standards require pain relief during castration?	Do standards prohibit dehorning and disbudding or require pain relief?	Do standards address animal welfare during transit to the slaugh-terhouse?	Do standards prohibit the use of electric prods?	Slaughterhouse design for improved welfare - independently verified
Environmental Sustainability Labels																		
Demeter Biodynamic	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
USDA Organic	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Certified Naturally Grown	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Food Alliance (also see FA Grassfed)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Non-GMO Project Verified	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Humane Labels																		
Animal Welfare Approved (also see AWA Grassfed)	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GAP Step 5	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GAP Step 5+	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Certified Humane	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GAP Step 4	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
American Humane Certified	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GAP Step 2	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
GAP Step 1	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Humanely Raised and Handled	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

The New York Times | http://nyti.ms/1KOobKv

The Opinion Pages | EDITORIAL

Cheeseburger, Hold the Salmonella

By THE EDITORIAL BOARD SEPT. 4, 2015

Americans eat more than 50 pounds of beef per person each year. That's a lot of beef. It's also a lot of risk, because about half — or more than two billion pounds — is ground beef, which can too easily harbor dangerous bacteria. There is always an uproar after serious outbreaks of illness like the Jack in the Box case in 1993, when 700 people were sickened and four children died after eating tainted hamburgers. But as a new report points out, there is more the Department of Agriculture and the Food and Drug Administration can do to keep Americans safe and some simple things consumers could do themselves.

The report, issued by Consumer Reports with the Pew Charitable Trusts, said that between 2003 and 2012, 1,144 people grew sick from beef contaminated with E. coli O157; 316 people were hospitalized and five people died.

Consumer Reports staff members went to 103 stores in 26 cities to buy and test 458 pounds of ground beef. "All 458 pounds of beef we examined contained bacteria that signified fecal contamination," they reported. Salmonella, which can be very dangerous, was in 1 percent of the samples. About 20 percent of the meat contained Clostridium perfringens, a bacteria that causes one million cases of food poisoning a year, and the group found that meat from conventionally raised cows had more of some kinds of bacteria than samples from cows that mostly spent their lives in a pasture.

WHAT CONSUMERS CAN DO TO TAKE ACTION AGAINST MISLEADING LABELS

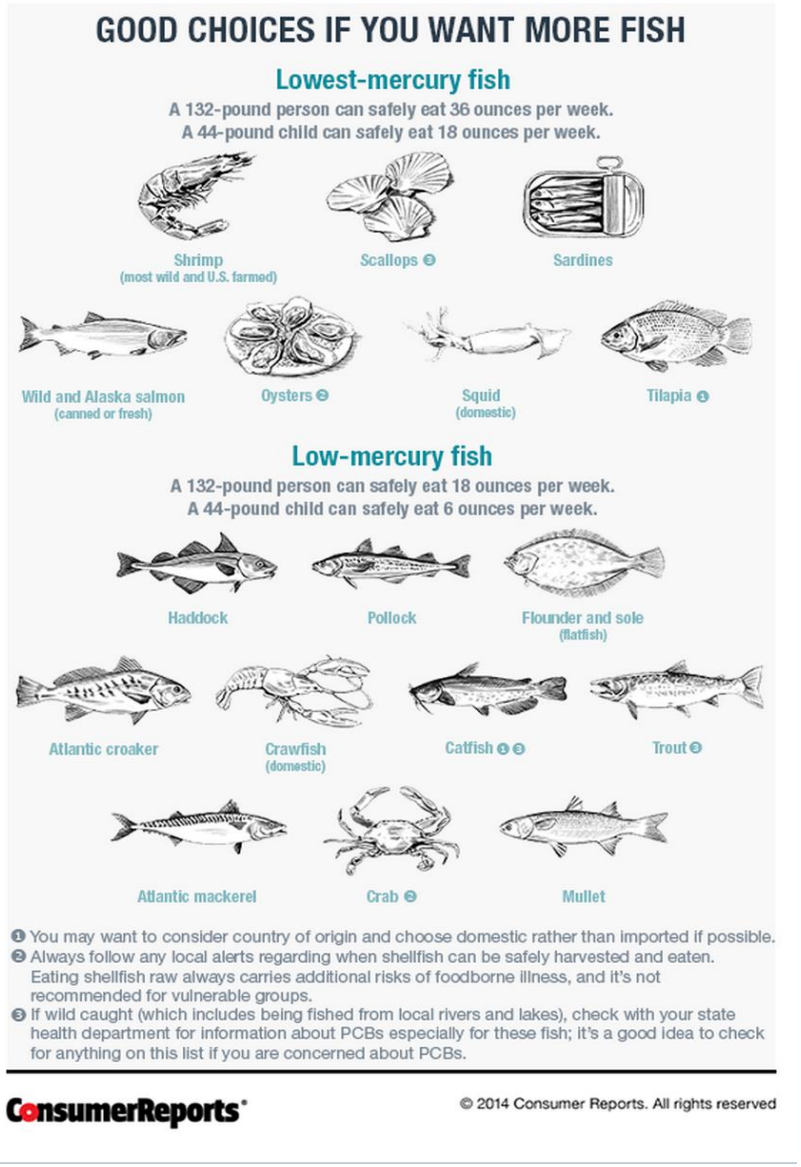
- Food and Drug Administration: www.fda.gov/Safety/ReportaProblem/ConsumerComplaintCoordinators/default.htm
- Federal Trade Commission: www.ftc.gov/complaint
- US Department of Agriculture (for mislabeled meat, poultry or eggs): ccms.fsis.usda.gov
- USDA National Organic Program (for mislabeled organic foods): NOPCompliance@ams.usda.gov

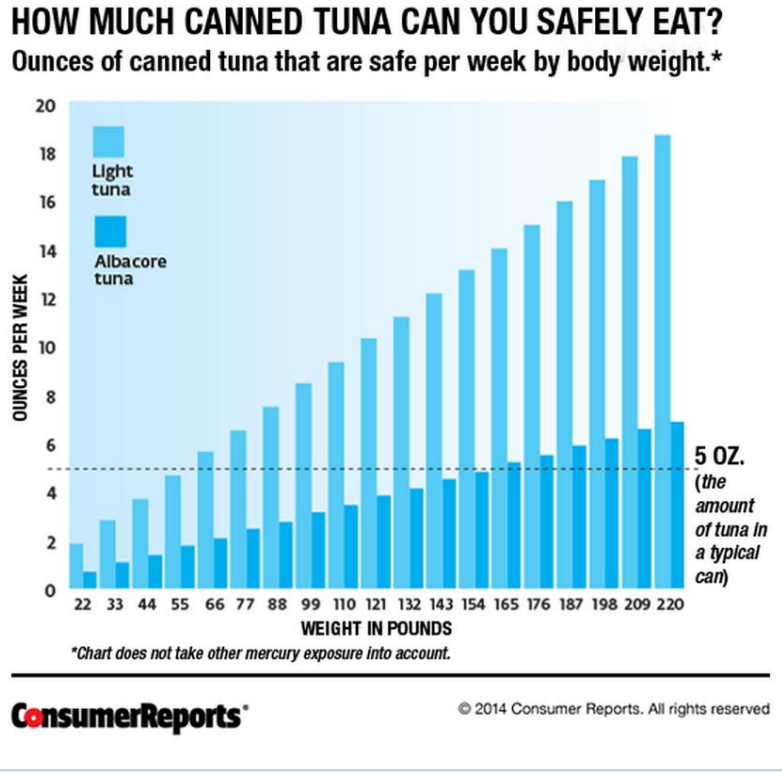
Consumers should report the mislabeled food to all relevant agencies.

Also let us know: labels@cr.consumer.org

MERCURY AND FISH:

Sustainable and safer fish choices especially for pregnant women and children

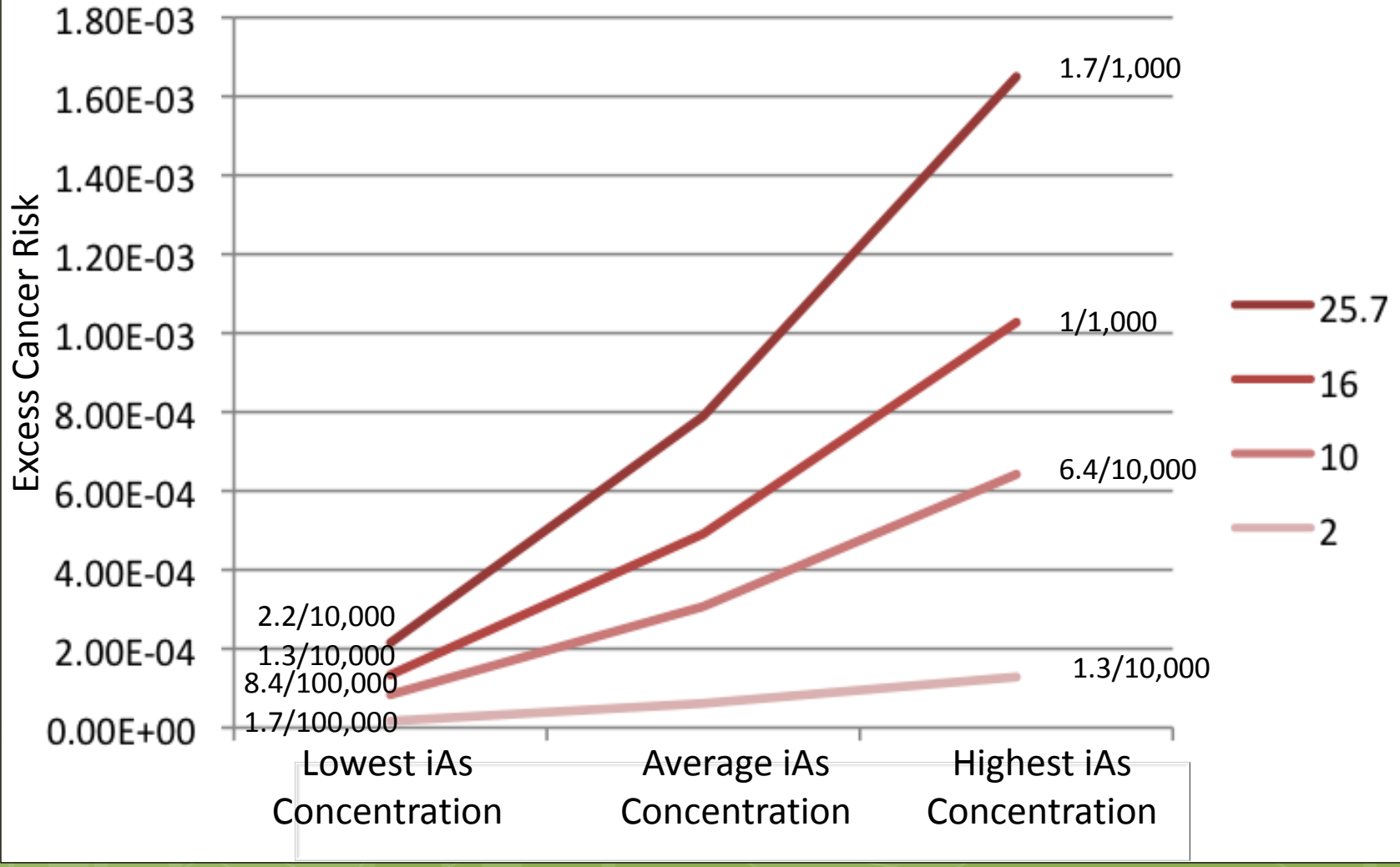




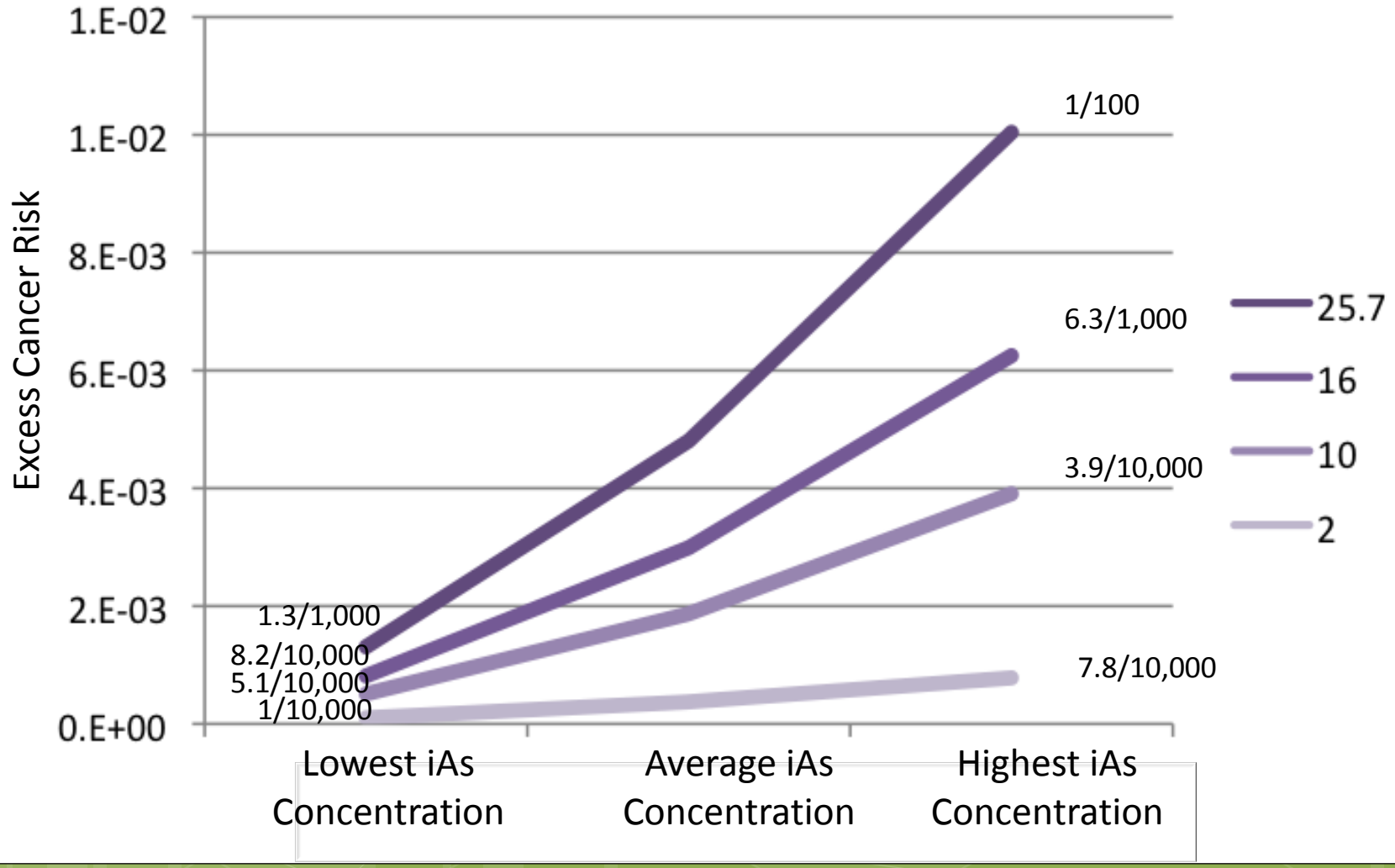
Arsenic in our Food and Production Systems

- LEVELS: Determined levels of arsenic in various food
- Included analysis from other sets of data (EU, FDA, literature)
- EXPOSURE: Analyzed NHANES data for juice consumption and urinary biomarkers
- RISK: Conducted cancer risk assessments for adults and children
- POLICY RECS: Calculate and advocate for standard limits of As in food
- Advocate for banning practices that compound arsenic into the food supply (pesticides and poultry drugs)
- ADVISE…

Excess Cancer Risk (CSF x LADD) for Average Rice Consumption for Whole Population



Excess Cancer Risk for Average Rice Consumption for Asian Population

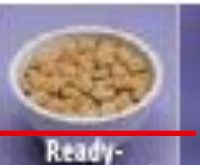


Consumer Advice

serving size recommendations for arsenic in rice and rice products for adults and children

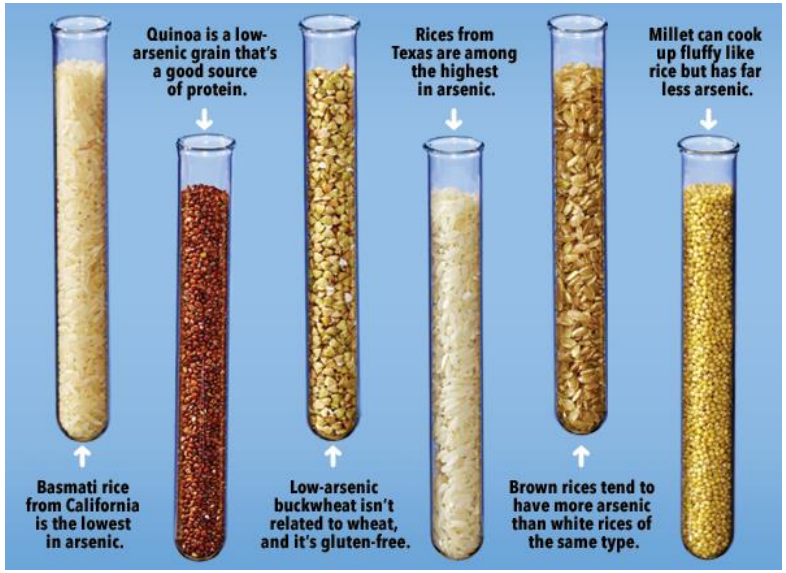
Limit your exposure

To reduce arsenic exposure, consider limiting rice in your family's diet to the quantities noted here. Our scientists based these recommendations on a person eating just one product per day or per week over a lifetime. If you eat more than one type, your risk would increase. Vary your diet to include non-rice products. If you exceed these limits one week, you can cut back the next.

Rice product	 Infant cereal	 Hot cereal	 Ready-to-eat cereal	 Rice drink	 Rice	 Rice pasta	 Rice crackers	 Rice cakes
Approximate serving size uncooked	¼ cup	¼ cup	1 cup	1 cup	¾ cup	2 oz	16-18 crackers	1-3 cakes
Children	1 serving/day	1¾ servings/week	1½ servings/week	–	1¼ servings/week	1½ servings/week	½ serving/day	1 serving/week
Adult	NA	2½ servings/week	3 servings/week	½ serving/day	2 servings/week	3 servings/week	1 serving/day	2½ servings/week

Arsenic in Food II

- Integrated 1700 rice product test results from FDA
- Basmati (CA, India, Pakistan) and Sushi rice (US) *lower* (50%)
- Non-rice grains (quinoa, amaranth, buckwheat, millet) lower in As compared to all rice
- Infant and children rice foods of high concern



Products	Serving Size	Child Points [1]	Adult Points [1]
Infant Rice Cereal	¼ cup uncooked	1¼	NA
Rice Cereal, Hot	¼ cup uncooked	8¼	3½
Rice Cereal, Ready to Eat	1 cup	4½	2¼
Rice Drinks	1 cup	4	2
White Basmati [2] or Sushi Rice	¼ cup uncooked	2½	1½
All Other Rice	¼ cup uncooked	5½	3½
Rice Pasta	2 ounces uncooked	7¼	3
Rice Cakes	1 to 3 rice cakes	6¼	2½
Rice Crackers	16 to 18 crackers	2¾	1¼
Cake or Muffin Mix	2 to 3 ounces	3¾	1½
Brownie Mix	1 to 2 ounces	1¼	½
Cookies	1 to 3 cookies	1¾	¾
Rice Pudding	about ⅓ cup	1¾	¾
Pie- or Pizza-Crust Mix	2 ounces	2	1
Snack Bars (Cereal, Granola, or Energy)	1- to 2-ounce bar	2¾	1¼

[1] To afford the most protection, we used the arsenic levels at the highest end of the range in our analysis for each food.
[2] From California, India, or Pakistan.

Developments…

- Withdrawl of all arsenical drugs in poultry (feed)
- AAP issued advice on baby's first food not having to be rice
- FDA
  - some advice regarding alternatives to rice as first solid food for infants.
  - risk assessment on rice and rice products pending
  - action limit of 10ppb for apple juice proposed but not final
- Congressional legislation proposals to set standards
- CODEX and EU set As limit for rice at 200ppb iAs on white rice and set US is backing a 350ppb proposal for brown rice – won't effect most of market ~4% (CR rec 120 ppb iAs for white rice)
- EPA Iris re-Risk re-re-assessment
- EPA has taken no additional action on arsenical pesticides. Allowances for cotton, sod farms & rites of ways (everywhere)

Thank You!

Greenerchoices.org
@UrvashiRangan
ConsumerReports.org

Cross Cutting Public Health Messages: Science of Resistance

- Pesticide resistance (produce, lice treatment, garden care)
- Antibiotic resistance (hospitals, animal agriculture, antibacterials in personal care products)
- Educate how antibiotic use can lead to bacterial resistance
- Loss of antibiotic effectiveness compounded by use in food production
- Science tells us that organisms evolve to resist efforts to try to kill them with drugs or pesticides
- Toxicity lessons learned over time