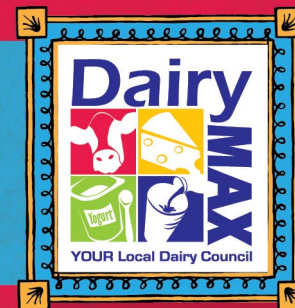




Welcome – Nutrition Starts at the Farm:
Healthy Meals from the Ground up



Jenna Allen, M.S., RDN



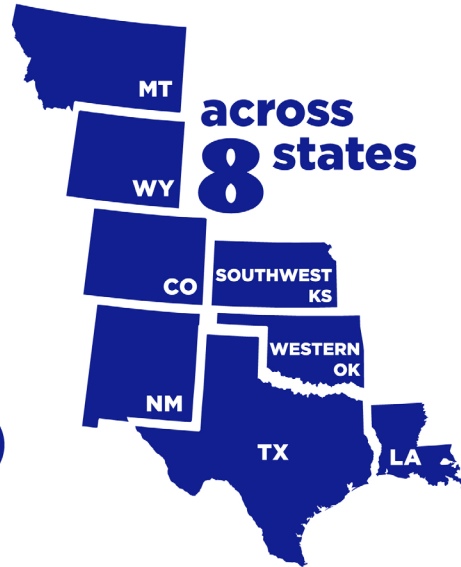
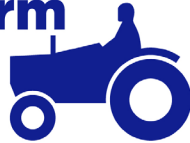
- Manager, Health & Wellness Communications
- Bachelor of Science in dietetics from Colorado State University
- Master of Science in nutrition from Colorado State University
- Joined dairy council in 2008
- Reside in Colorado



About Dairy MAX – Your Local Dairy Council



Representing
900+
dairy farm
families



On Social Media:



DairyMAXinc



DairyMAX



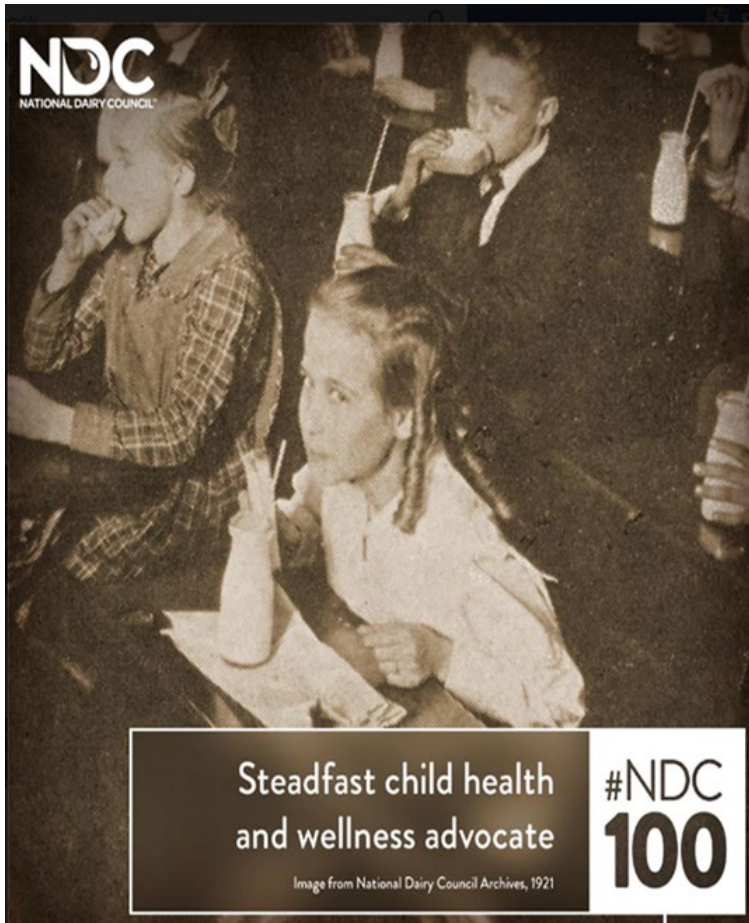
DairyMAX

#DairyAmazing

National Dairy Council



Over 100 Year History



Housekeeping Items



- This webinar has been approved for one CPE through the Commission on Dietetic Registration and 1 CME through the American Academy of Family Physicians. Your CPE certificate will be sent via email as a follow up to this webinar. We will also send today's slide deck.
- We will have time for Q&A at the end of our webinar. You're welcome to submit your questions at any time via the Q&A or chat portal functions.
- If you're tweeting during the webinar, we'd love for you to use our hashtag #DairyAmazing

Nutrition Starts at the Farm: Healthy Meals from the Ground Up

Neva Cochran, MS, RDN, LD, FAND

Dairy MAX Webinar

January 15, 2020

Disclosure



Nutrition Communications Consultant:

- ▶ Bayer U.S. - Crop Science
- ▶ Leafy Greens Marketing Agreement
- ▶ Speakers Bureau - National Cattlemen's Beef Association
- ▶ Volunteer Expert - GMO Answers
- ▶ Volunteer Fruit & Vegetable Ambassador - Produce for Better Health Foundation

If you are tweeting

@NevaRDLD

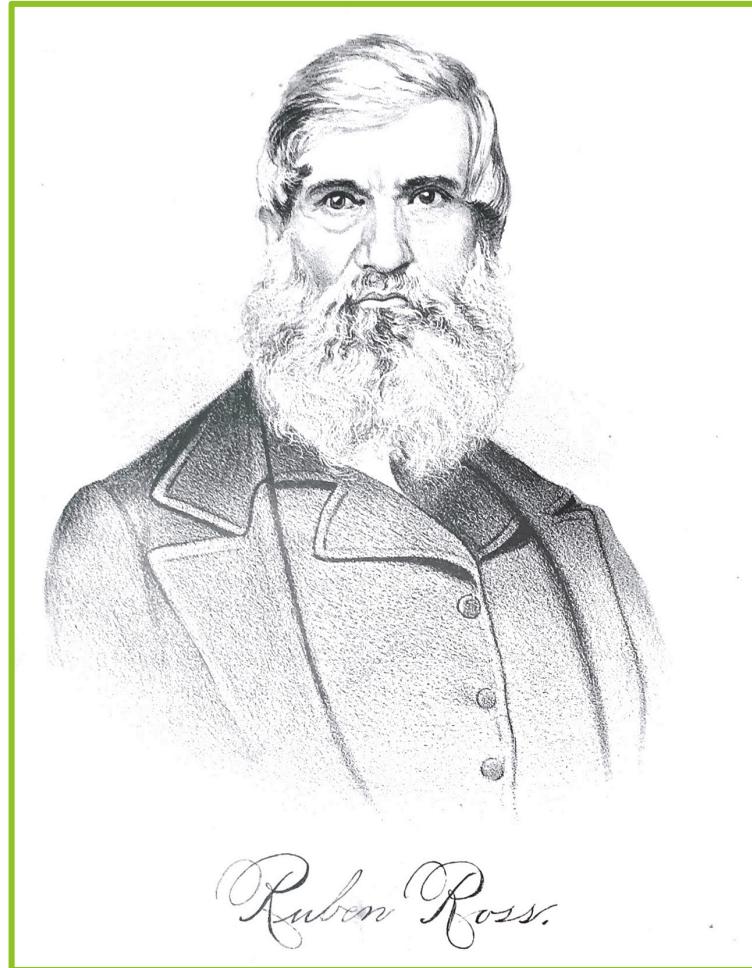
@DairyMAX

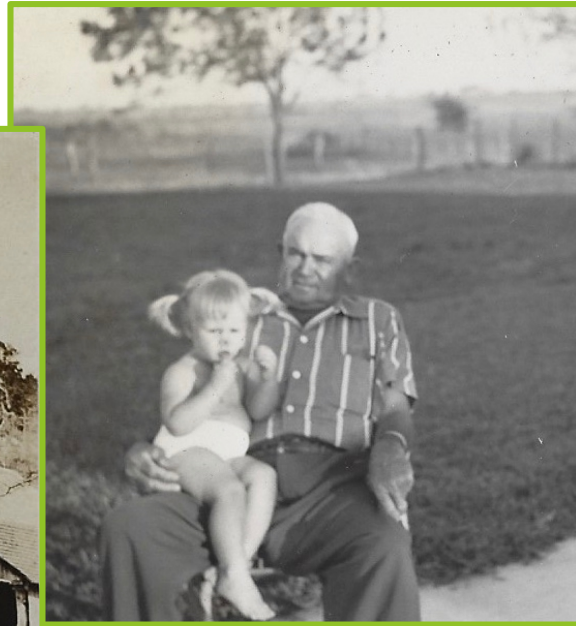
#DairyAmazing

Objectives

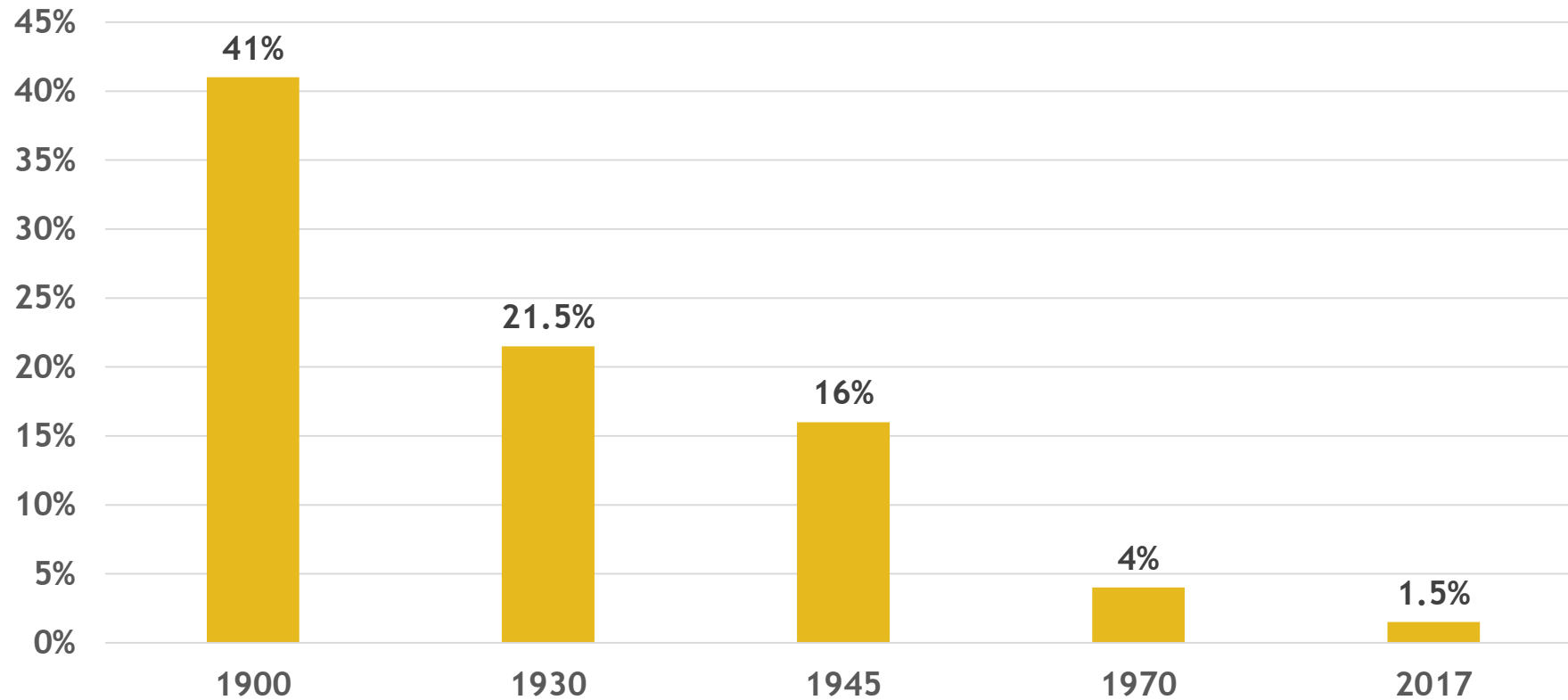
- ▶ Discuss the role of modern agriculture in producing a safe and adequate food supply for people in the U.S. and around the world
- ▶ Describe how farmers use new innovations and technology to conserve natural resources and produce more food for a growing population
- ▶ Analyze ways health professionals can support agriculture and farmers in their community

Ruben Ross



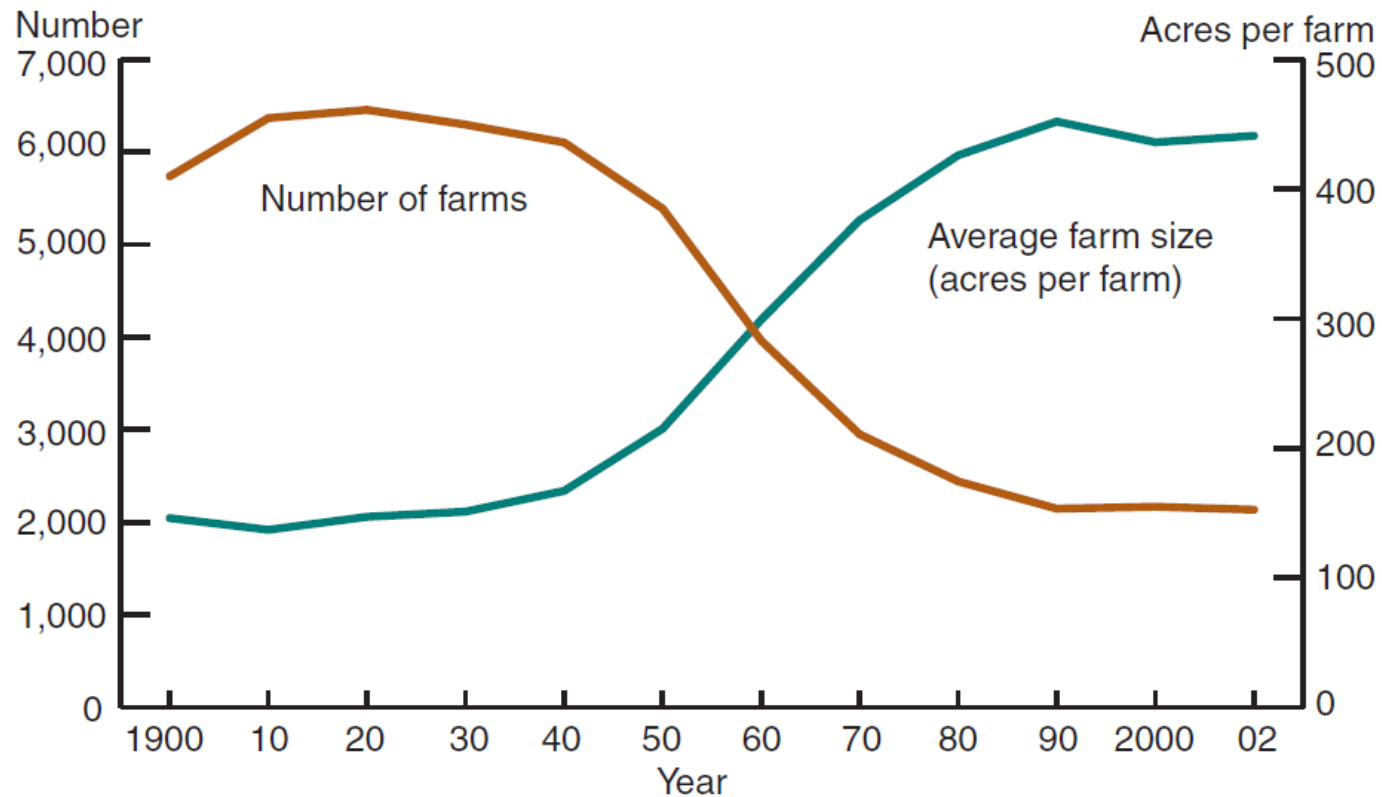


Farming's Changing Role



Source: Compiled by Economic Research Service, USDA. Share of workforce employed in agriculture, for 1900-1970, Historical Statistics of the United States; for 2017, The World Bank Group website from International Labour Organization, ILOSTAT database: <https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=US>

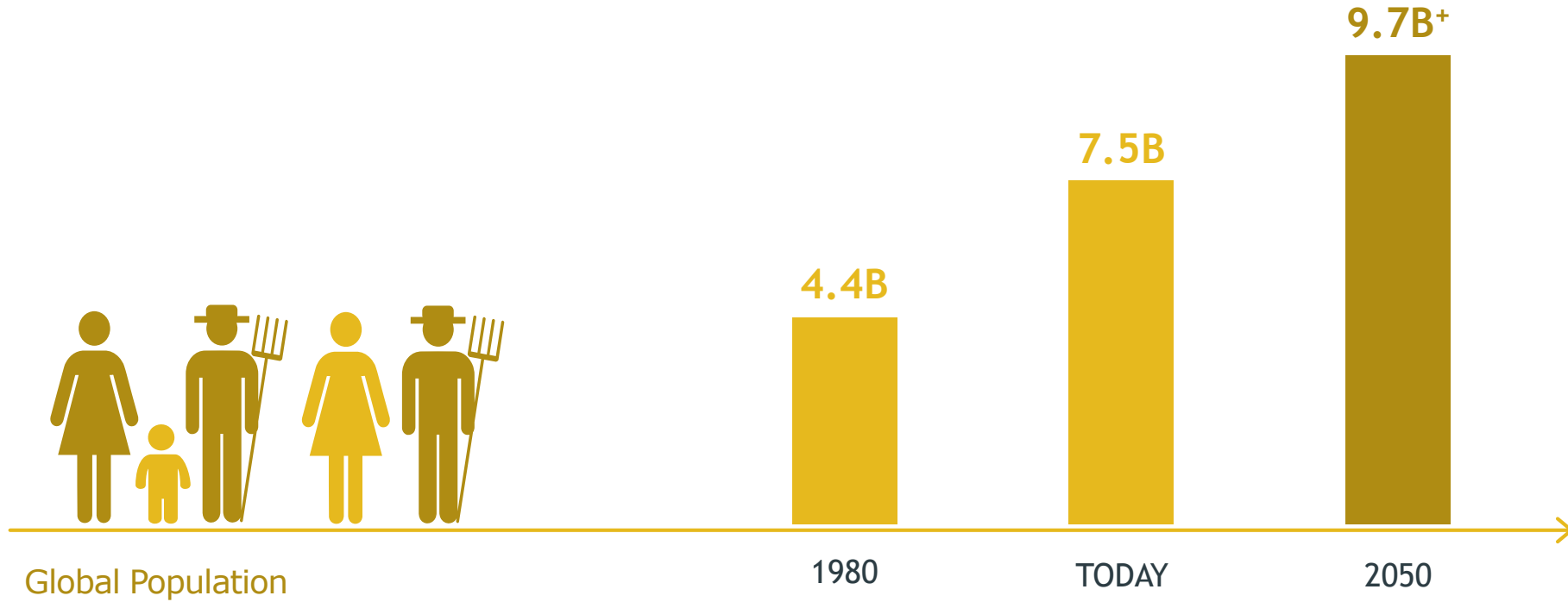
As the number of farms declined, their average size increased



Source: Compiled by Economic Research Service, USDA, using data from Census of Agriculture, Census of Population, and Census of the United States.



Rising Population

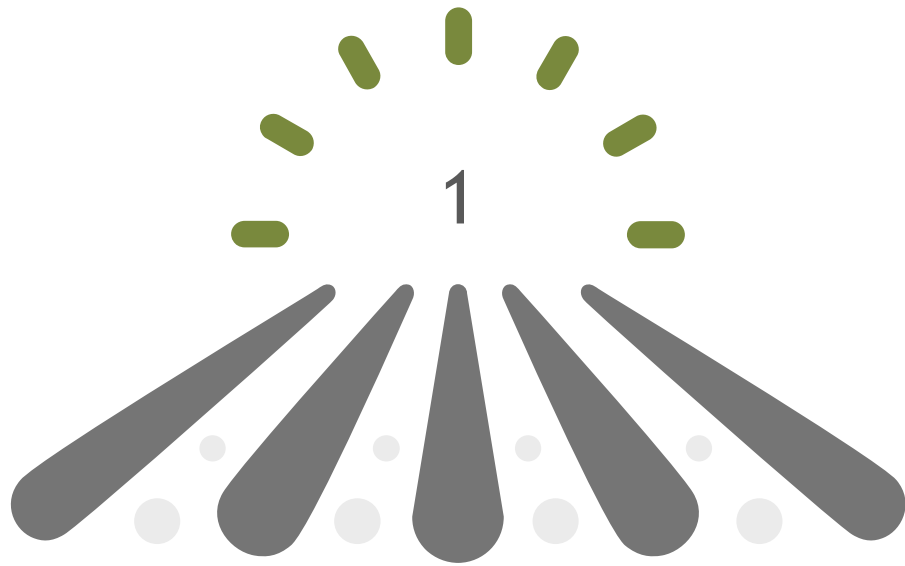


Source: <http://www.fao.org/3/a-l6881e.pdf>

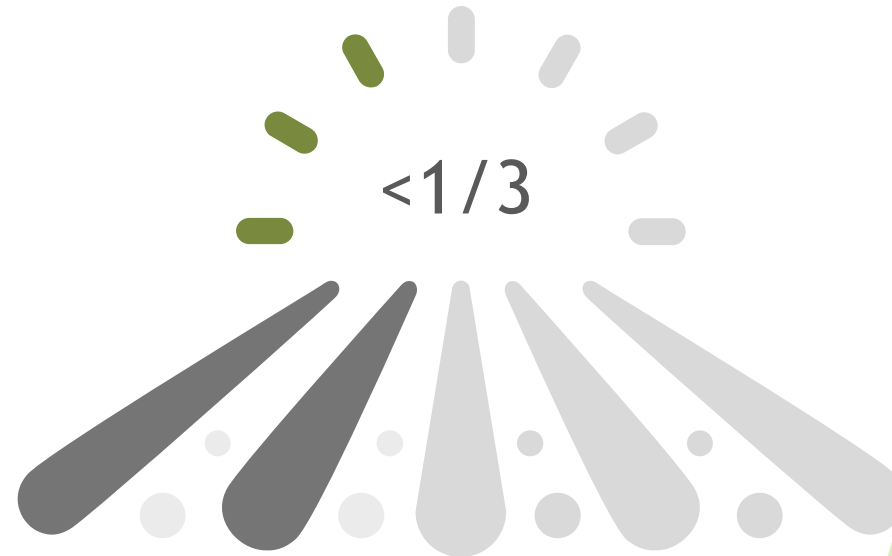


Limited Farmland

Acres per Person



1960



2050



Changing Climate



Farmers are affected by climate change in many ways:

WATER AVAILABILITY ISSUES



INCREASINGLY

UNPREDICTABLE WEATHER



INSECT RANGE EXPANSION



WEED PRESSURE CHANGES



CROP DISEASE INCREASES



PLANTING ZONE SHIFTS

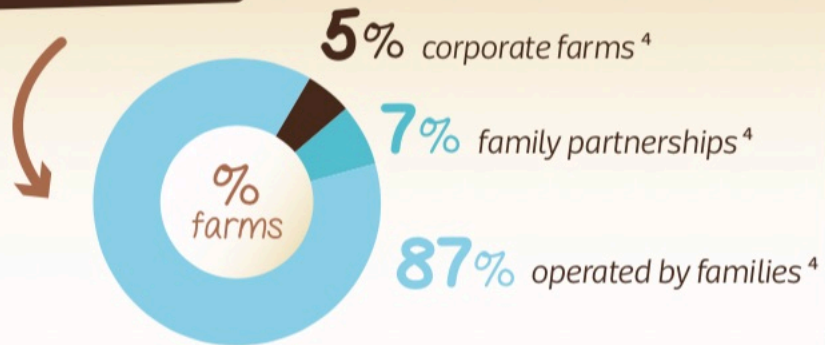
Facts about Farming



Fast Facts

About U.S. Farms

Most Farms
are Family Farms⁴



2.1 million farms in U.S.⁴

915 million farm acres in the U.S.⁵

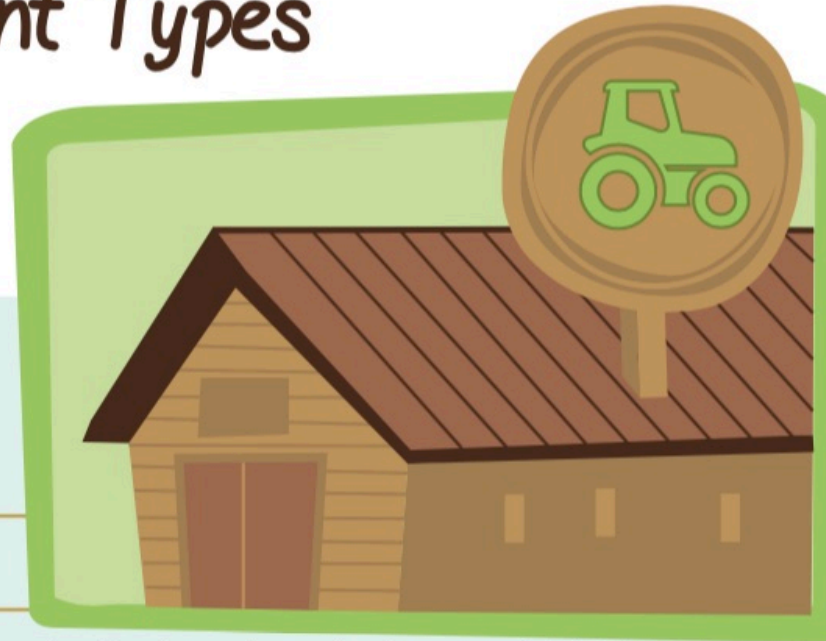
Understanding Different Types of Farming Systems

Conventional

Uses modern technology and mechanization to advance agriculture productivity and efficiency ⁶

Provides abundant and inexpensive food ⁶

Between **70-90%** of the recent increase in food production is attributed to increased yield due to advances in science-based agriculture ⁷



Organic

Uses methods to preserve the environment, and avoids most synthetic materials, including pesticides and antibiotics ¹⁰

USDA has specific organic standards in the Organic Foods Production Act that farms must meet to be USDA Organic Certified ¹⁰


5.4 million organic farm acres in the U.S. (0.5% of all farm acres) ⁵

A look at Organic Foods in 2012:

Organic food sales increased by over **7%** ¹¹

Organic food sales account for **3.5 %** of total food sales in U.S. ¹¹

























Biotechnology

Used to increase agricultural productivity and improve plants, animals and microorganisms ⁸

Organizations such as the USDA support advances in agriculture, including biotechnology, and help to ensure a safe food supply ⁹



Farming Systems Can Co-exist and Share Many Practices

Practice	Conventional	Biotech	Organic
No-Till			
Crop Rotation			
Cover Crop			
Green Manure			
Integrated Pest Management			
Fertilizers			Manure 
Pesticides			Organic Materials Review Institute 

Organic vs. Conventional

- ▶ Organic farmers generally use less toxic chemicals and pay closer attention to soil health-organic matter, nutrients and microbial activity
- ▶ Conventional farmers now focus more on best practices. Multiple studies show that non-organic farming yields considerably more food with lower costs and in some cases lower inputs per acre. It often uses less water
- ▶ Some GM crops, such as insect resistant Bt corn, soybean, cotton and eggplant, require less chemical pesticides than their organic counterparts

Are Organic Foods More Nutritious or Healthier?

- ▶ Systematic review of 17 studies in humans and 223 studies of nutrient and contaminant levels in foods concluded that there is a lack of strong evidence that organic foods are significantly more nutritious than conventional foods
- ▶ Systematic review of 55 studies with fruit, vegetables, grains, pork, chicken, eggs, milk and wine found no evidence of a difference in nutrient quality between organically and conventionally produced foods
- ▶ Systematic review of 12 studies concluded that evidence is lacking for nutrition-related health effects that result from consumption of organically produced foods

Is Organic More Sustainable?

- ▶ Perception: organic food is safer, healthier, grown “without pesticides” and avoids “harmful” intensive farming practices commonly associated with conventional agriculture
- ▶ Fact: both organic and conventional farmers use pesticides; organic farmers use natural pesticides and some approved synthetics

Certified Organic Labeling

- ▶ When the final National Organic Standards were issued in 2000, Secretary of Agriculture Dan Glickman said, "Let me be clear about one thing: the organic label is a marketing tool. It is not a statement about food safety, nor is "organic" a value judgment about nutrition or quality."
- ▶ In 2014 former Secretary of Agriculture, John Block said, "USDA's own research shows consumers buy higher priced organic products because they mistakenly believe them safer and more nutritious."

GENETIC TRAITS EXPRESSED IN GMOs IN THE U.S.

APPLE

Genetic Traits
Non-browning
Uses: Food



POTATO

Genetic Traits
Reduced Bruising and Black Spot
Non-browning
Low Acrylamide
Blight Resistance
Uses: Food



FIELD CORN

Genetic Traits
Insect Resistance
Herbicide Tolerance
Drought Tolerance

Uses:
- Livestock and poultry feed
- Fuel ethanol
- High-fructose corn syrup and other sweeteners
- Corn oil
- Starch
- Cereal and other food ingredients
- Alcohol
- Industrial uses



CANOLA

Genetic Traits
Herbicide Tolerance
Uses: Cooking oil,
Animal feed



ALFALFA

Genetic Traits
Herbicide Tolerance
Uses: Animal feed



SOYBEAN

Genetic Traits
Insect Resistance
Herbicide Tolerance
Uses:

- Livestock and poultry feed
- Aquaculture
- Soybean oil (vegetable oil)
- High oleic acid (monounsaturated fatty acid)
- Biodiesel fuel
- Soymilk, soy sauce, tofu, other food uses
- Lecithin
- Pet food
- Adhesives and building materials
- Printing ink
- Other industrial uses



RAINBOW PAPAYA

Genetic Traits
Disease Resistance
Uses: Table fruit



COTTON

Genetic Traits
Insect Resistance
Herbicide Tolerance
Uses: Fiber, Animal feed,
Cottonseed oil



SUGAR BEET

Genetic Traits
Herbicide Tolerance
Uses: Sugar, Animal feed



SWEET CORN

Genetic Traits
Insect Resistance
Herbicide Tolerance
Uses: Food



SUMMER SQUASH

Genetic Traits
Disease Resistance
Uses: Food



Are GMOs **SAFE?** **YES.** The National Academies of Sciences, Engineering, and Medicine 2016 report reaffirms

Over **900** studies and publications were examined



20+ scientists, researchers and agricultural and industry experts over a 2 year period reviewed animal studies, allergenicity testing, North American and European health data, and more



Based on **20+** years of data since GMO crops were introduced

SAFE.



No substantiated evidence of a difference in risks to human health between current commercially available genetically engineered [GMO] crops and conventionally bred crops.

The National Academies of
SCIENCES • ENGINEERING • MEDICINE

Full report available at <http://nas-sites.org/ge-crops/>



2015 Evidence Analysis Library Systematic Review on Advanced Technology in Food Production

Conclusions

- ▶ EAL systematic review focused on the influence of consumption of GE foods in human beings
- ▶ No clear adverse health effects as they relate to allergenicity and nutrient adequacy associated with consumption of GE foods
- ▶ No human disease or condition was linked to consumption of GE foods
- ▶ Findings are in agreement with the NAS report that reviewed a much larger body of evidence
- ▶ Within the context of a varied, healthful diet, nutrition and dietetics practitioners can be confident that the allergenicity and the nutrient adequacy of GE foods is not different than that of conventional foods.



98% of farmers believe

GMOs are the **most important** factor in their ability to lessen **environmental** impact on their farm.

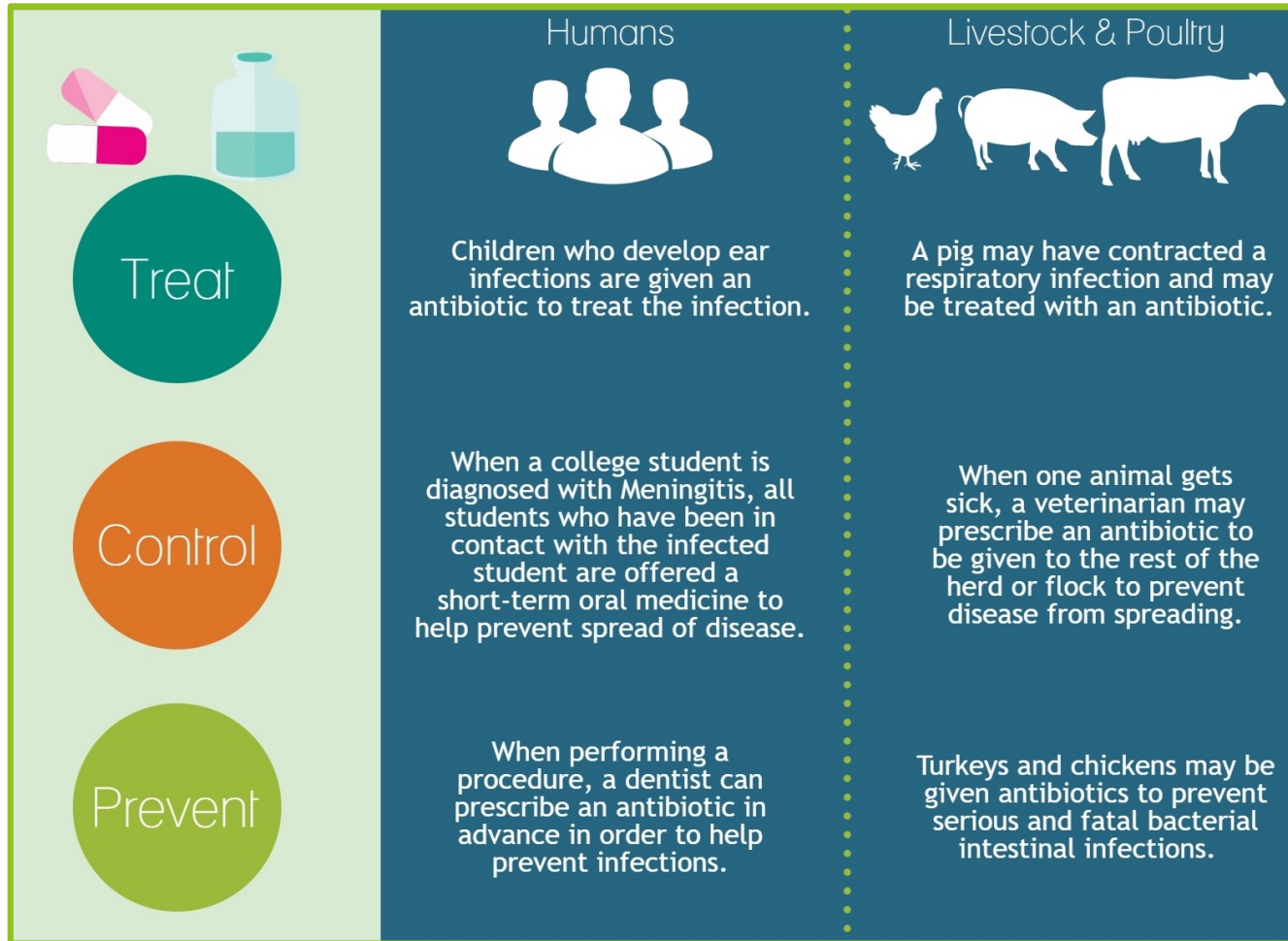


U.S. Farmers
&
Ranchers
+Alliance*



GMO Survey of Corn Growers* ©2016 USFRA

Antibiotics: Human vs. Animal



Antibiotics Used in Humans and Animals

The vast majority of antibiotics are used either in people or in animals – not both.

Use By Volume	Humans	Animals
Penicillins	44%	6%
Cephalosporins	15%	Less than 1%
Sulfa	14%	2%
Quinolones	9%	Less than 1%
Macrolides	5%	4%
Tetracyclines	4%	44%
Ionophores*	0%	30%

Sources: 2015 Summary Report on Antibiotics Sold or Distributed for Use in Food Producing Animals, downloaded at <http://www.fda.gov/downloads/ForIndustry/UserFees/AnimalDrugUserFeeActADUFA/UCM534243.pdf> and Drug Use Review, Food and Drug Administration, Center for Drug Evaluation and Research, Office of Surveillance and Epidemiology, April 5, 2012, downloaded at <http://www.fda.gov/downloads/Drugs/DrugSafety/InformationbyDrugClass/UCM319435.pdf>

*Ionophores are never used in human medicine

Antibiotics in Agriculture

- ▶ The U.S. government strictly tracks antibiotic resistance, monitors and reviews products and interventions
- ▶ No meat sold in the United States is allowed to contain antibiotic residue that violate FDA standards.
- ▶ Whenever an antibiotic is given to a food animal, a strict waiting or “withdrawal” period is required before that animal can be processed into meat or poultry
- ▶ USDA’s Food Safety & Inspection Service conducts tests to ensure beef products entering the food supply do not contain antibiotic levels that violate FDA standards

How the dairy industry keeps antibiotics out of milk



DAIRY FARMERS AND COMPANIES

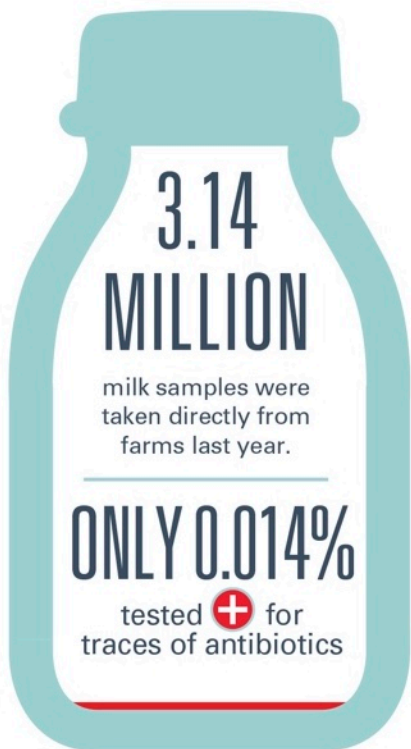
make sure that when it is necessary for a farmer to treat a sick cow, traces of antibiotics do not enter our food supply.



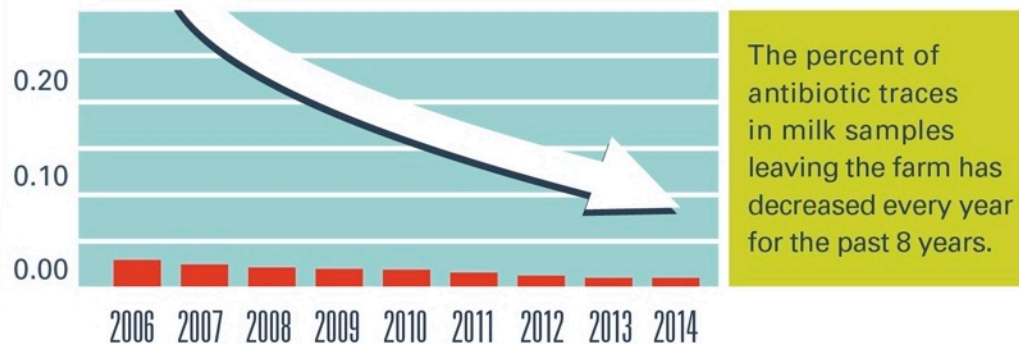
All farm milk is tested for traces of antibiotics. FDA collects the data from these tests and compiles a report every year.

Testing is one of several steps used to ensure that only the highest quality milk is used to produce dairy products for your family.

2014 FDA Findings



All farm milk is tested. In the rare instance that milk in a tanker tests positive for minute traces of antibiotics, none of the milk from that tanker is used to make dairy products.



Results show that the current safety system is effective in preventing drug residues in your milk.

Hormone Use in Agriculture



Milk Production and Hormones

Bovine somatotropin (bST)

- ▶ a naturally occurring hormone produced by all cows
- ▶ helps young cattle grow and adult cows to produce milk
- ▶ a protein hormone, not a steroid
- ▶ naturally present in small amount in all milk, including organic
- ▶ digested like any other protein when consumed in milk

Externally administered bST

- ▶ increases milk production,
- ▶ very few U.S. dairy farmers use bST



Perspectives in Practice

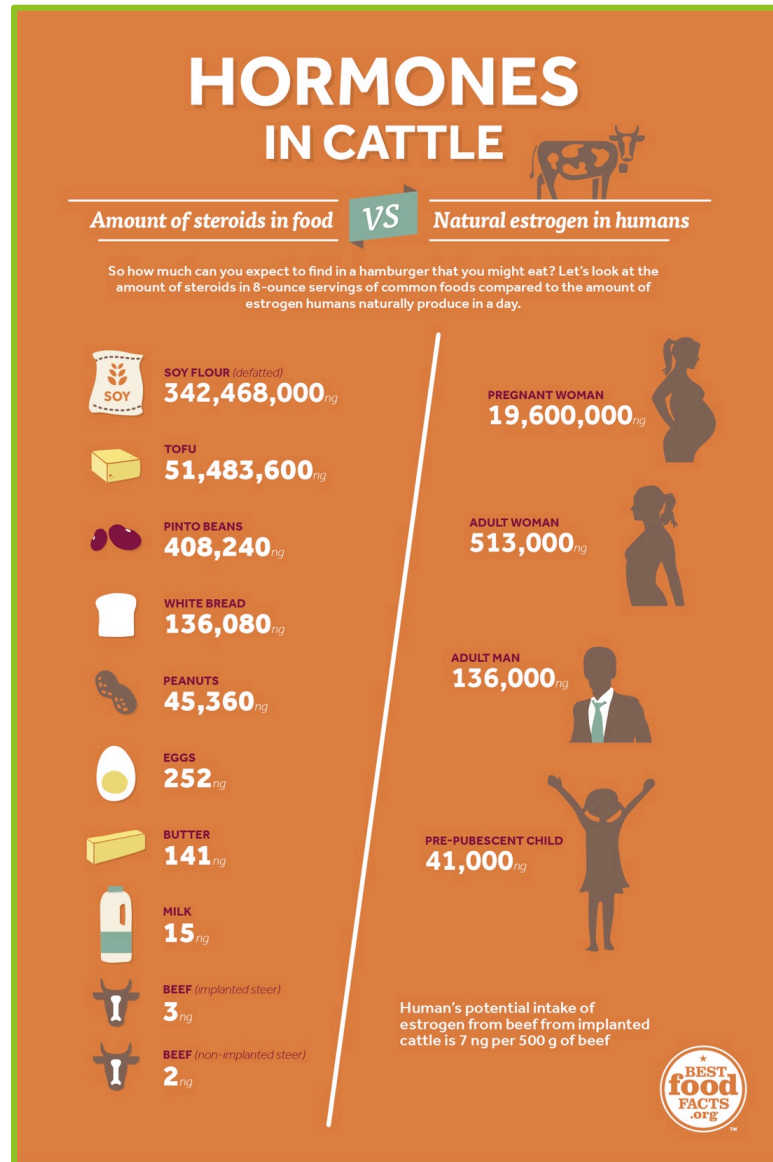
Survey of Retail Milk Composition as Affected by Label Claims Regarding Farm-Management Practices

- ▶ There were no differences in concentration of bST in milk regardless of type: conventional, rbST-free or organic
- ▶ Concentrations of rbST that were detectable in milk were very low and averaged 0.005 ng/mL

Meat Production and Hormones

- ▶ All multi-cellular organisms contain hormones, animals and plants
- ▶ Some beef production systems use hormone implants to increase feed conversion to muscle or produce more muscle from less feed more quickly
- ▶ This helps keep prices down and reduces the environmental impact of production
- ▶ Federal law prohibits the use of hormones in raising hogs or chickens

Hormones in Food



Primer on Pesticides





Pesticides Defined

- ▶ Any substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest
- ▶ Include insecticides, herbicides, fungicides, rodenticides and plant growth regulators
- ▶ Pesticides for conventional and organic agriculture are covered by this definition

Pesticide Use and Safety

- ▶ The U.S. EPA develops strict limits for residues at 100 to 1,000 times lower than levels at which health impacts might occur
- ▶ FDA and USDA share responsibility for monitoring levels of pesticide residues on foods
- ▶ Farmers use pesticides only as necessary and within the strict rules established by the EPA
- ▶ Organic farmers use pesticides. There are more than 20 natural chemicals commonly used in organic agriculture that are approved by the USDA National Organic Program

<http://www.foodinsight.org/newsletters/facts-figures-pesticide-safety-use-food-production-updated>

Glyphosate

- ▶ Non-selective herbicide, meaning it will kill most plants, weeds and crops.
- ▶ Stops a specific enzyme pathway needed for plants to produce certain proteins the needed to grow.
- ▶ Any glyphosate that is absorbed or ingested will pass through the body relatively quickly.
- ▶ The vast majority of glyphosate leaves the body in urine and feces without being changed into another chemical. It doesn't interact with any enzymes or other body cells. In humans, glyphosate does not easily pass through the skin.

Farming *with* Glyphosate

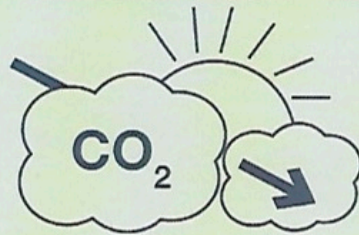
Conservation Tillage

Controlling weeds with glyphosate allows farmers to adopt practices like conservation tillage. It disturbs the soil less keeping carbon and nutrients in the ground for the plants and reduces greenhouse gases (GHGs) released that lead to climate change.



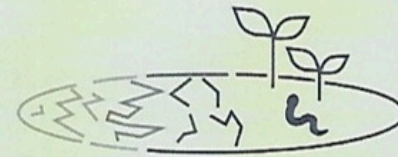
Less Plowing/Tilling of Land:

Allows farmers to spend less time on tractor, less passes on the field and less fuel



Reduces CO₂ Emissions:

Soils retain more carbon



Improves Soil Health:

Reduces soil erosion and improves soil moisture and quality

Farming with Glyphosate

Safety

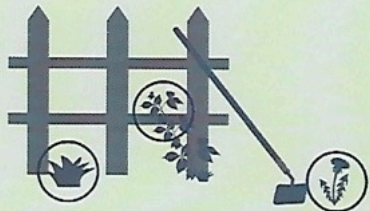
40 years of safe use

800+ studies and reviews demonstrating safety

160+ countries where glyphosate is used

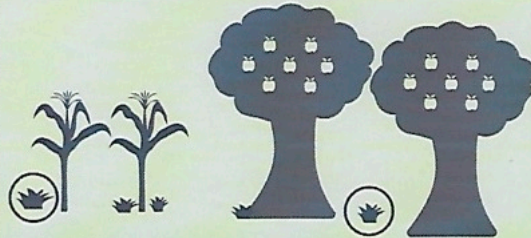


Did You Know Glyphosate Has Many Other Uses?



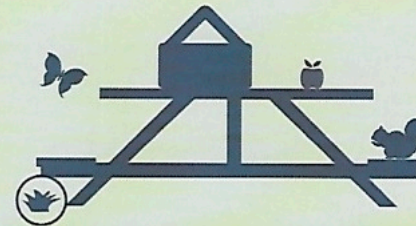
Garden & Home Use

Helps control weeds, poison ivy and invasive weeds that can be harmful to your family and pets.



Agricultural Benefits

Helps reduce food waste during food production; weeds steal water, sunlight and nutrients from healthy plants.



Land Management

Helps control invasive weeds that threaten habitat and keeps roads, railways and recreation areas more functional.

Weed Control in Organic Farming

- ▶ Weeds steal water and nutrients from crops
- ▶ Out-compete crops because of their aggressive growth.
- ▶ Organic farmers identify weeds as their #1 problem
- ▶ Organic farmers use a combination of soil management techniques, some also used by conventional and GMO farmers
- ▶ They also use natural chemicals like copper sulfate, which are quite toxic



Pesticides Are Only One Tool

Farmers also control pests and weeds with:

- ▶ Cover crops
- ▶ Crop rotation
- ▶ Scouting for pests
- ▶ Tillage
- ▶ Proper timing of planting

2019



Dirty Dozen

1. Strawberries
2. Spinach
3. Kale
4. Nectarines
5. Apples
6. Grapes
7. Peaches
8. Cherries
9. Pears
10. Tomatoes
11. Celery
12. Potatoes

Dirty Dozen Not a Scientific List

Research Article

Dietary Exposure to Pesticide Residues from Commodities Alleged to Contain the Highest Contamination Levels

Carl K. Winter and Josh M. Katz

Department of Food Science and Technology, University of California, One Shields Avenue, Davis, CA 95616, USA

Correspondence should be addressed to Carl K. Winter, ckwinter@ucdavis.edu

Received 29 November 2010; Accepted 16 March 2011

Academic Editor: Ian Munro

Copyright © 2011 C. K. Winter and J. M. Katz. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Probabilistic techniques were used to characterize dietary exposure of consumers to pesticides found in twelve commodities implicated as having the greatest potential for pesticide residue contamination by a United States-based environmental advocacy group. Estimates of exposures were derived for the ten most frequently detected pesticide residues on each of the twelve commodities based upon residue findings from the United States Department of Agriculture's Pesticide Data Program. All pesticide exposure estimates were well below established chronic reference doses (RfDs). Only one of the 120 exposure estimates exceeded 1% of the RfD (methamidophos on bell peppers at 2% of the RfD), and only seven exposure estimates (5.8 percent) exceeded 0.1% of the RfD. Three quarters of the pesticide/commodity combinations demonstrated exposure estimates below 0.01% of the RfD (corresponding to exposures one million times below chronic No Observable Adverse Effect Levels from animal toxicology studies), and 40.8% had exposure estimates below 0.001% of the RfD. It is concluded that (1) exposures to the most commonly detected pesticides on the twelve commodities pose negligible risks to consumers, (2) substitution of organic forms of the twelve commodities for conventional forms does not result in any appreciable reduction of consumer risks, and (3) the methodology used by the environmental advocacy group to rank commodities with respect to pesticide risks lacks scientific credibility.

Winter & Katz Findings

- ▶ “Dirty Dozen” estimates were derived from USDA’s Pesticide Program data for the 10 most frequently detected pesticide residues on the 12 fruits or vegetables listed
- ▶ All pesticide exposure estimates were well below established chronic reference doses and pose negligible risks to consumers
- ▶ Substitution of organic forms of the twelve commodities for conventional forms does not result in any appreciable reduction of consumer risks
- ▶ The methodology used by the EWG to rank commodities with respect to pesticide risks lacks scientific credibility



USDA Releases 2017 Annual Pesticide Data Program Summary, U.S. Food Supply is Among the Safest in the World

WASHINGTON, Dec. 17, 2018 - The U.S. Department of Agriculture (USDA) today published the 2017 Pesticide Data Program (PDP) Annual Summary. The Summary shows more than 99 percent of the samples tested had pesticide residues well below benchmark levels established by the Environmental Protection Agency (EPA).

Same data, different stories!



Pesticide Residue Calculator

Use this calculation tool

to see how many servings a man, woman, teen or child could consume and still not have any adverse effects from pesticide residues.



Start Calculating

[FAQ](#)



Calculate

Here are your results



A woman could consume

18581

servings of kale in one day

without any effect even if the kale have the highest pesticide residue recorded for kale by USDA.

Just Wash It!

Reduce and eliminate any residues on fresh fruits and vegetables by:

- ▶ Washing with large amounts of cold or warm tap water, and scrubbing with a brush when appropriate; do not use soap.
- ▶ Throwing away outer leaves of leafy vegetables like lettuce and cabbage.



Low-Income Shoppers and Fruit and Vegetables

What Do They Think?

- ▶ 510 low-income shoppers surveyed on their attitudes about organic and conventional fruits and vegetables
- ▶ Participants preferred organic fruits and vegetables
- ▶ Cost was a significant barrier to purchase them
- ▶ Informational statements about organic and conventional fruits and vegetables did not increase their likelihood to purchase more
- ▶ Messages naming specific fruits and vegetables with pesticides shifted participants toward “less likely” to purchase any type of fruits and vegetables no matter how they were grown: organic or convention

2015 Fruit and Vegetable Intake in U.S.



- ▶ 88% of Americans don't eat enough fruit and 91% consume too few vegetables
- ▶ Including more of these nutrient-rich foods in our diet is important no matter how they are produced.

Morbidity and Mortality Weekly Report (2017) 66:1241-1247
based on 2015 Behavioral Risk Factor Surveillance System (BRFSS) data

PRODUCTIVE SUSTAINABLE AGRICULTURE



Satisfies Human Needs



Enhances environmental quality and the natural resource base



Sustains the economic vitality of food and agriculture systems



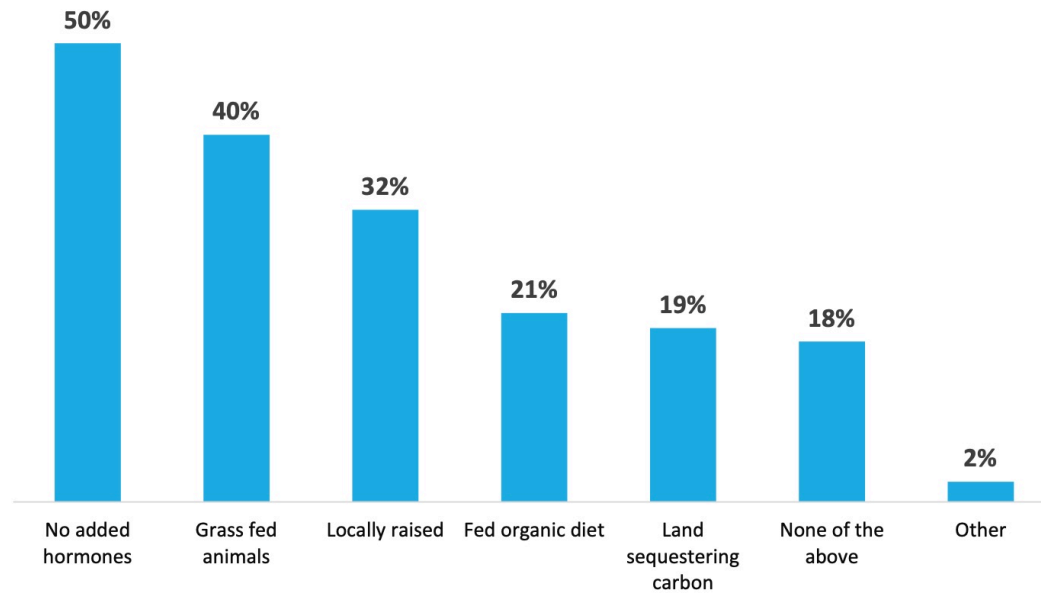
Improves the lives of agricultural producers and society as a whole



GLOBAL AGRICULTURAL
PRODUCTIVITY REPORT®

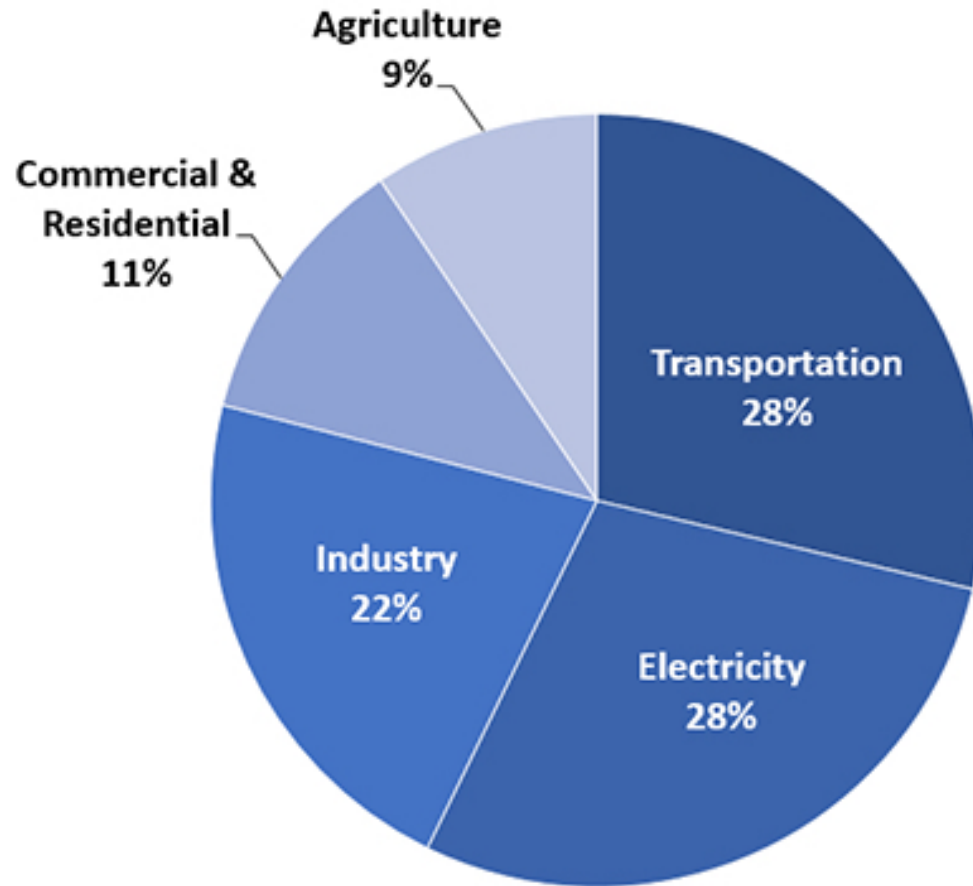
#GAPReport @Harvest2050

CONSUMERS LINK HEALTH AND SAFETY CONCERNS WITH SUSTAINABILITY: HALF SAY NO ADDED HORMONES LABEL SIGNALS ENVIRONMENTALLY SUSTAINABLE ANIMAL PROTEIN



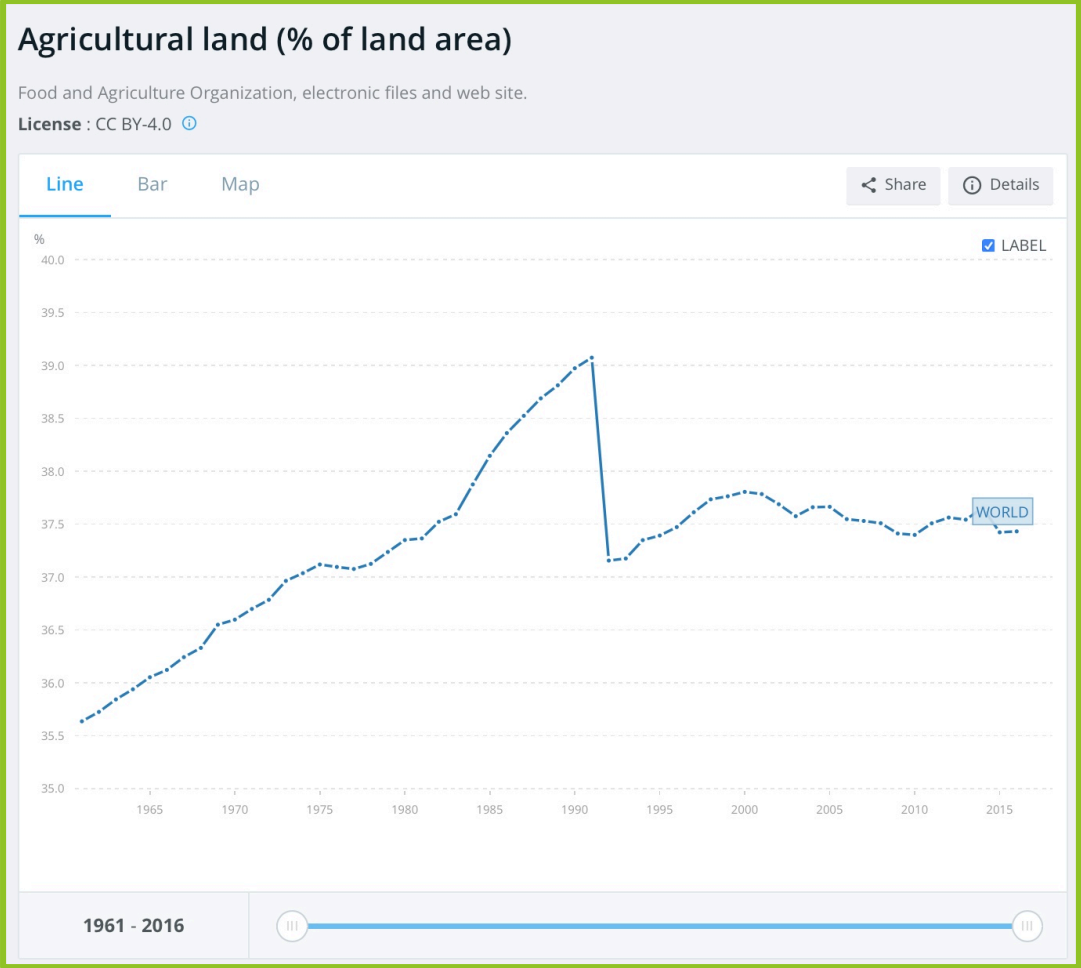
Q10. What comes to mind when you think of environmentally sustainable animal protein? Please select your top two.

Total U.S. Greenhouse Gas Emissions by Economic Sector in 2016



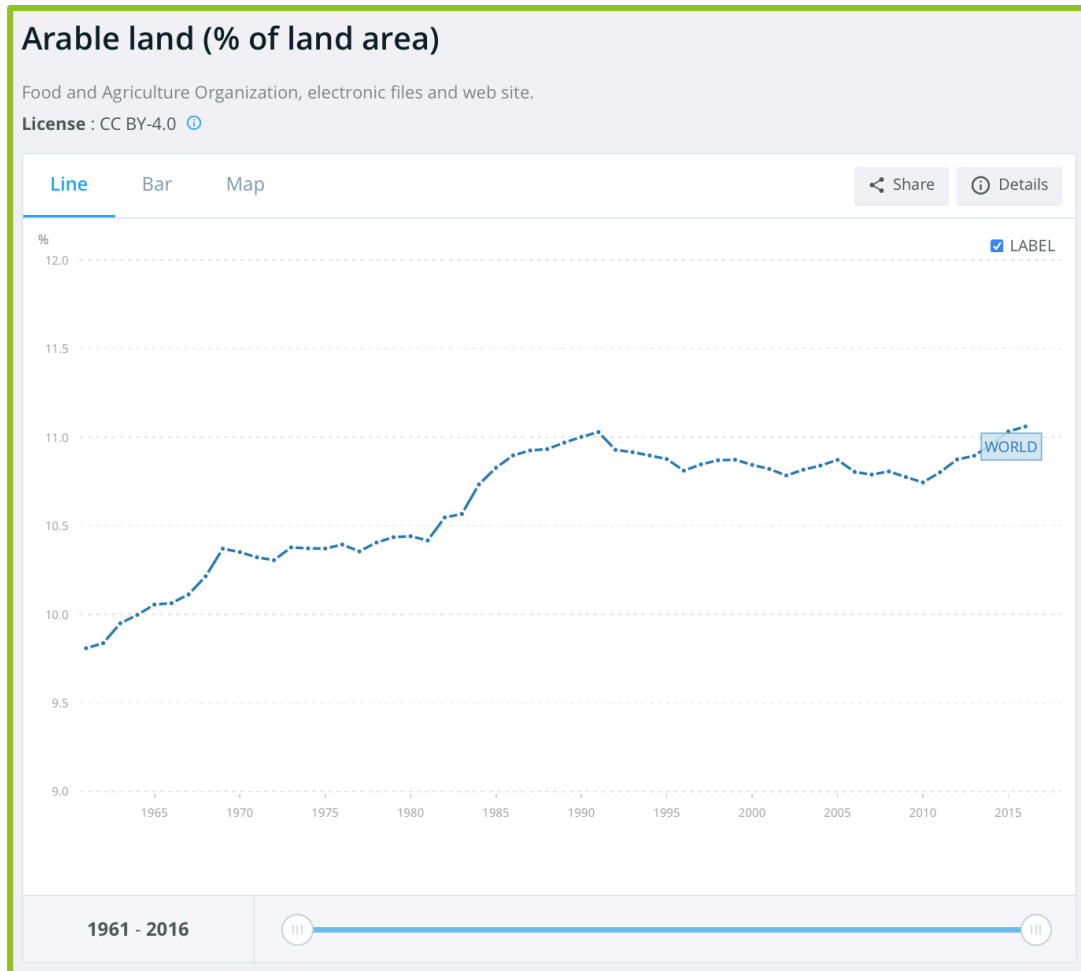


Agricultural Land in the World



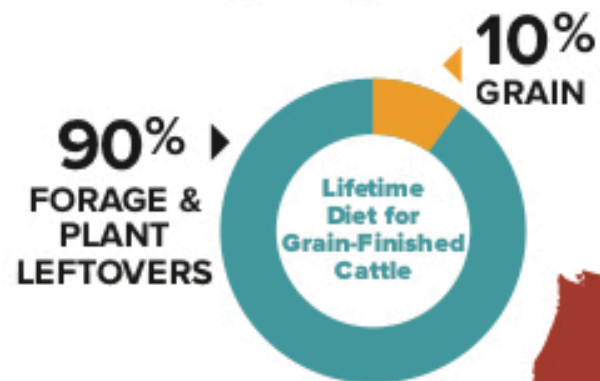
37.2% of land is agricultural

Arable Land in the World



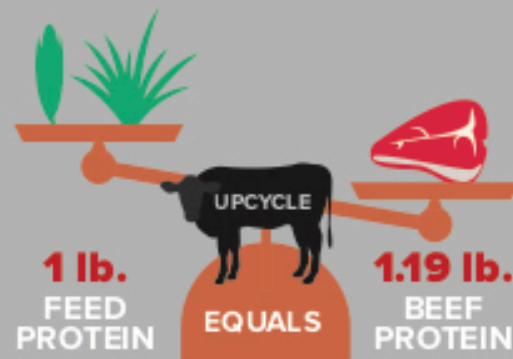
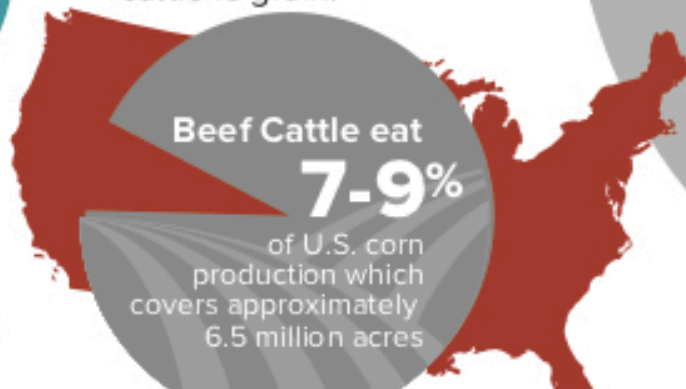
11% of land is arable

Going Against the Grain



Corn Fed to Cattle =
2% of U.S. cropland acres
0.3% of total U.S. land area

Whether grass- or grain-finished, most of what cattle eat in their life is grass, and less than 10% of the lifetime feed of grain-finished cattle is grain.



Grain-finished beef cattle provide 19% more human-edible protein than they consume.

Same Beef, Fewer Cattle

Compared to 1977, today's beef farmers and ranchers produce the same amount of beef with 33% fewer cattle.



How'd they do it?



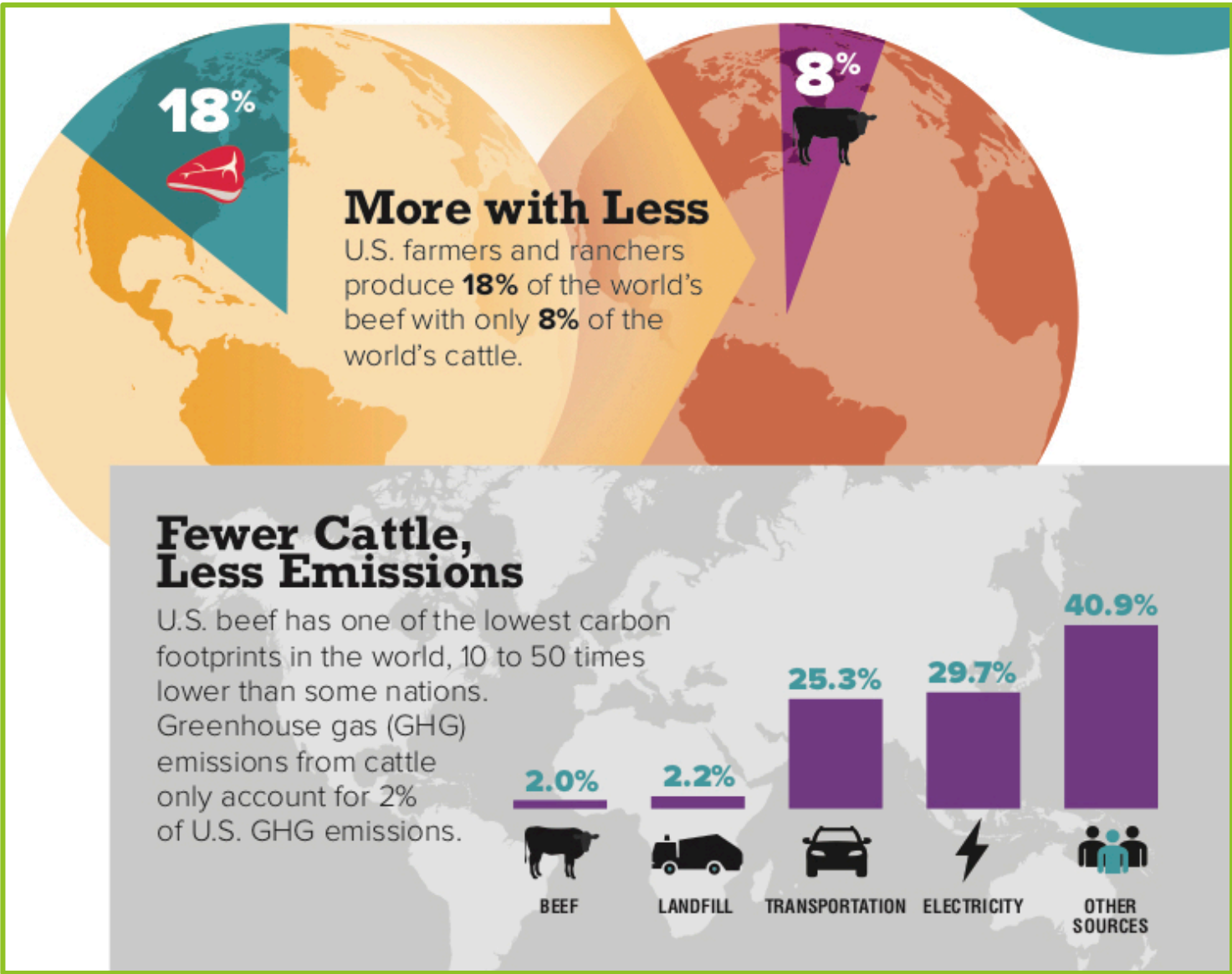
Better Animal Health & Welfare



Better Animal Nutrition



Better Animal Genetics





Dairy's Reduced Environmental Impact Over the Past 70 Years

90%
less land

65%
less
water

76%
less
manure

63%
less GHG

The dairy community has a voluntary commitment to
further reduce GHG 25% by 2020

Dairy Sustainability

- ▶ In 1950, there were 24 million dairy cows in the U.S. vs. 9 million today
- ▶ Even with 15 million fewer cows, milk production has increased 86 percent nationally while maintaining commitment to animal care



Using **1960** egg production technology today would require:



78 million more hens

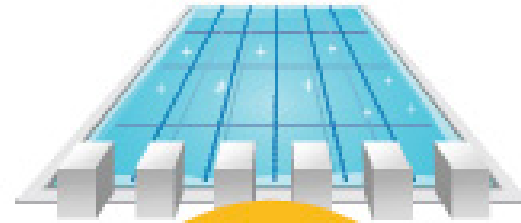


1.3 million more acres of corn



1.8 million more acres of soybeans

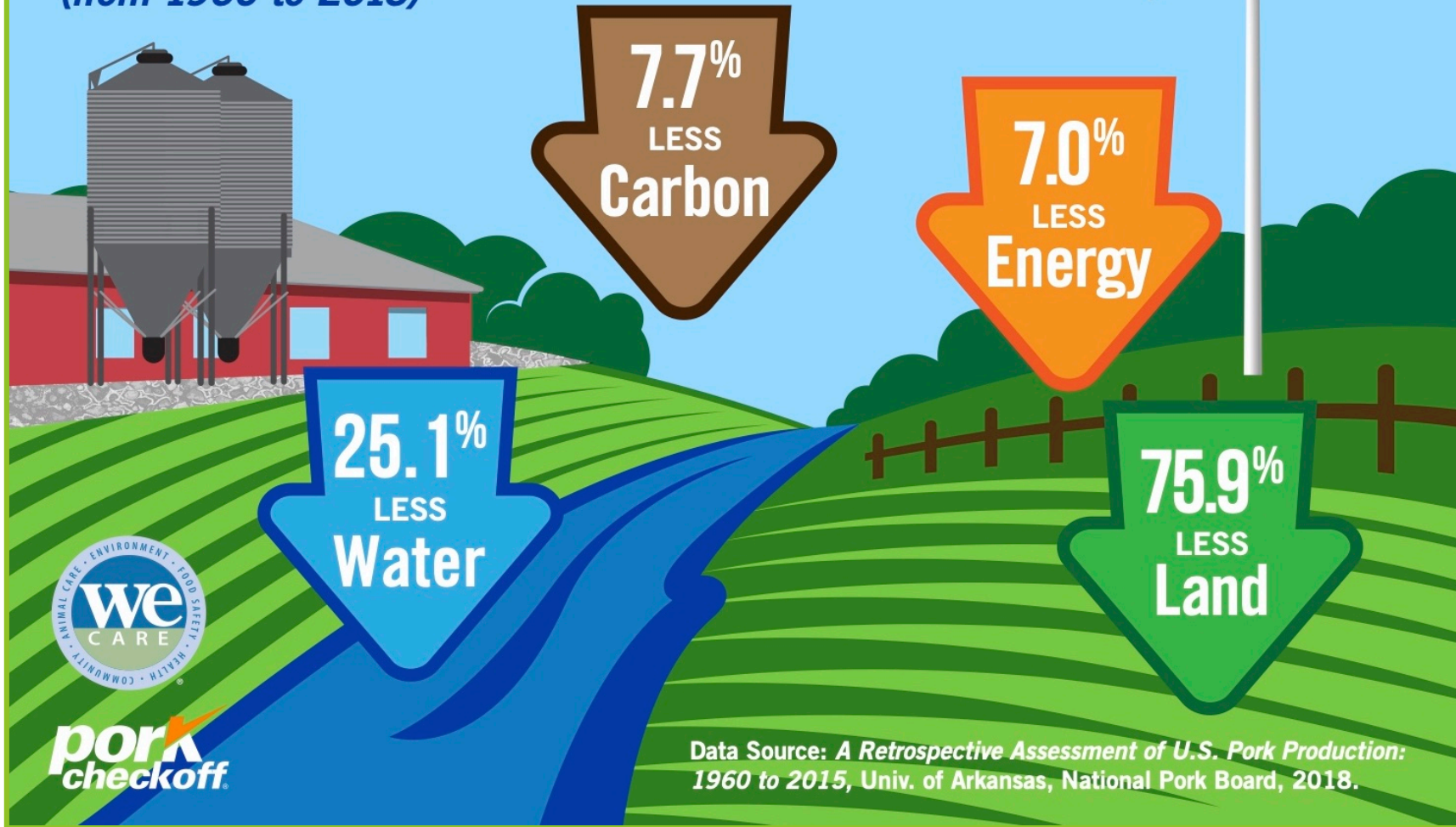
Compared to 1960, today it takes
32% Less Water
to produce a dozen eggs



The volume of water conserved would fill

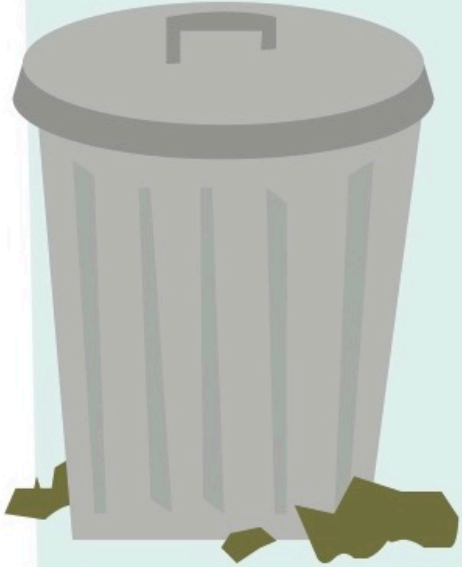
3,716
olympic-sized swimming pools

Improvements Per Pound of Pork Produced (from 1960 to 2015)



Data Source: *A Retrospective Assessment of U.S. Pork Production: 1960 to 2015*, Univ. of Arkansas, National Pork Board, 2018.

Promote the reduction of food waste



40%
of food in the
U.S. is never
eaten - this is
among the
highest
globally¹²

60%

of food waste comes
from homes and food
service - this is mostly
avoidable¹²

Food waste is the **2nd largest**
category of municipal solid waste¹²

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PRACTICE APPLICATIONS

President's Page

Academy Members and Agriculture: A Winning Combination



THE ACADEMY OF NUTRITION and Dietetics' new Strategic Plan, and the Foundation's Second Century initiative, make it imperative that all food and nutrition practitioners know and understand more about agriculture. Each of the three main areas of our Strategic Plan (Prevention and Well-Being, Health Care and Health Systems, and Food and Nutrition Safety and Security) calls for the Academy to make a national and international impact relating to the production of—and access to—a safe, sustainable food supply.¹

Where does our food come from? How can we ensure our clients, patients, communities, and planet have enough nutritious food to feed growing populations? Two members living on opposite sides of the country are involved on a daily basis with agriculture, and explain why a knowledge of farming is so valu-

Schmidt adds, "Farming is the beginning of the food continuum along which our RDN career operates. It has been said 'Three times a day, we need farmers.' How many careers can make that claim? It's as plain and simple as that, and yet far more complicated are the intricacies of farming, food production, and the supply chain between farmers and RDNs. As experts in food and nutrition, RDNs need to understand the entire food system from 'farm to table'—from the *actual* farm."

Schmidt says being an RDN has made her a better farmer. "I use the same science, chemistry, and biology knowledge in humans and apply it to soils and plants. Having been trained in nutrition education also helps me 'teach' farming and food production to the audiences with whom I get to share my story, most often my RDN peer group."



Donna S. Martin

full circle for me as a farmer RD because it highlighted the global issues of food production, access to technology, and hunger. We clearly have not solved the issue of hunger and its web of issues, from food production to waste, distribution, controlling post-harvest loss

Ag Resources for Health Professionals

- ▶ [2015 Evidence Analysis Library Systematic Review on Advanced Technology in Food Production](#)
- ▶ [Plentiful, Nutrient-Dense Food for the World: A Guide for Registered Dietitian Nutritionists](#)
- ▶ Academy of Nutrition & Dietetics Foundation [Future of Food Initiative](#)
- ▶ International Food Information Council [“Understanding and Communicating about Biotechnology”](#)
- ▶ [U.S. Farmers & Ranchers Alliance](#)
- ▶ [GMO Answers](#)
- ▶ [Animal Ag Alliance](#)
- ▶ [CropLife America](#)
- ▶ [Bayer U.S. - Crop Science](#)
- ▶ [Texas A&M Agrilife Extension](#)
- ▶ [Dairy MAX](#)
- ▶ [Dairy Discovery Zone](#)
- ▶ [National Dairy Council](#)
- ▶ [USA Rice](#)
- ▶ [National Cattlemen’s Beef Association](#)
- ▶ [Texas Beef Council](#)
- ▶ [Egg Nutrition Center](#)
- ▶ [National Pork Board](#)
- ▶ [Wheat Foods Council](#)
- ▶ [United Soybean Board](#)
- ▶ [Potatoes USA](#)
- ▶ [Alliance for Food and Farming](#)
- ▶ [Produce for Better Health Foundation](#)
- ▶ [Leafy Greens Marketing Agreement](#)

Thank you!



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Questions?



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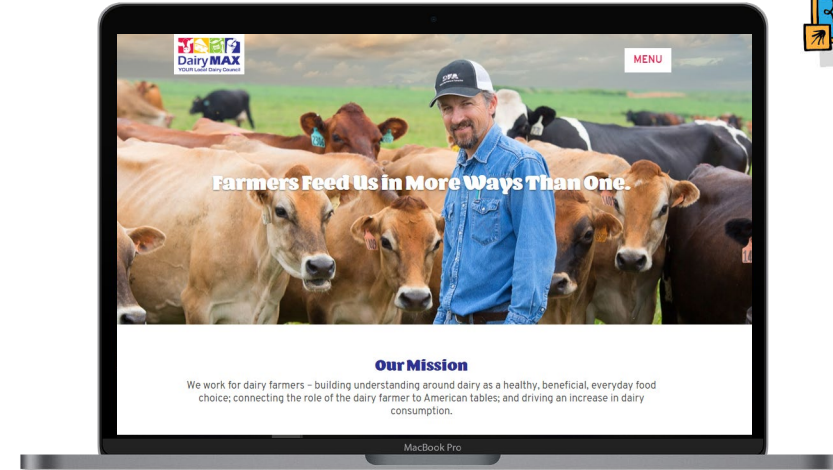
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