John Stossel, co-anchor of ABC's "20/20,"delivered a half-hearted apology August 11 for falsifying evidence in a report that claimed organic produce is potentially more dangerous than food raised using toxic agrochemicals, antibiotics, added hormones, genetically engineered seeds and massive animal-feeding factories. In his apology, Stossel admitted that some tests he relied on to support his conclusion had never been conducted.

Similarly, Dennis Avery published an article entitled "The Hidden Dangers in Organic Food" in the Fall, 1998, issue of American Outlook, a quarterly publication published by the Hudson Institute. Avery's article began, *"According to recent data compiled by the U.S. Centers for Disease Control (CDC), people who eat 'organic and natural' foods are eight times as likely as the rest of the population to be attacked by a deadly new strain of E. coli bacteria (0157:H7)."*

As with Stossel, Avery fabricated the evidence:
A statement from Dr. Mitchell Cohen of the Centers for Disease Control stated that: *"Since 1982, most of the outbreaks of Escherichia coli 0157:H7 have been associated with foods of bovine origin (e.g. - ground beef). In recent years, a wider spectrum of foods, including produce, have been recognized as causes of outbreaks. The Centers for Disease Control and Prevention (CDC) has not conducted any study that compares or quantitates the specific risk for infection with Escherichia coli 0157:H7 and eating either conventionally grown or organic/natural foods."*

A University of Minnesota study concerning fecal E. coli in fresh picked produce by Mukherjee et al, published in the *Journal of Food Protection* (Vo. 67, No. 5, 2004), found that the percentage of E. coli prevalence in certified organic produce was similar to that in conventional samples. However, it did find a marked difference in the prevalence of *E. coli* between the samples from certified and non-certified organic farms. *"Ours is the first study that suggests a potential association between organic certification and reduced E. coli prevalence," the authors wrote. They noted that the results of the study "do not support allegations that organic produce poses a substantially greater risk of pathogen contamination than does conventional produce."*
Source: "E. coli Facts", Organic Trade Association

Myth: Organic Food is too Expensive

Fact: Organic Food is Worth the Extra Cost

Using USDA Census numbers, 330 farmers leave the land every week! To top it off, the percentage of young farmers has been dropping every year since 1982. There are fewer farms everyday and many farmers are not encouraging their children to start farming. The primary cause of this trend is poor economic return on investment. Farmers simply cannot make enough money at current commodity prices and they have no control over these prices.
With this in mind, we have to ask not "why is organic food so expensive", but "why is conventional food so cheap?"

According to the USDA Economic Research Service, American's spend 9.9% of their disposable income on food—the lowest percentage anywhere in the world. Twenty years ago, the number was closer to 12% and in the years after World War II that number was closer to 20%. At the same time the farmer's share of the food dollar has fallen steadily, from 41 cents per dollar in 1950 to about 20 cents today.

There are also costs not included in the store price of conventional food. Subsidies, paid for by our tax dollars, were $261.9 Billion dollars between 1990 and 2010 according to the Environmental Working Group. The price of conventional food also does not factor in environmental and human health costs—costs that are shifted to all of us in other ways.

There are three primary reasons organic food is more expensive:
• Synthetic fertilizers and many pesticides are time and labor savers. These are the primary reasons that conventional farmers use them- they reduce the cost of production. Organic farmers substitute labor, management, observation and time for these chemicals—which increases the cost of production, but benefits the environment, human health and quality of life.
• Organic farmers must be certified by a 3rd party. The organic certification process costs money, but maintains the integrity and trust of organic foods.
• Organic farmers deserve a sustainable price for their efforts. The higher price of organic food helps to ensure that farmers stay in business.

Resources:

Rodale 30 Year Farming Systems Trial Report
www.rodaleinstitute.org/fst30years
Iowa State University- Long-Term Agroecological Research
www.leopold.iastate.edu/pubs-and-papers/2011-11-ltar-experiment
The Organic Center
www.organic-center.org/science.nutri.php?action=view&report_id=157

MIDWEST ORGANIC & Sustainable Education Service MOSES

The Midwest Organic and Sustainable Education Service (MOSES) provides education and resources to farmers to encourage organic and sustainable farming practices. To learn more, please see:

www.mosesorganic.org

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ORGANIC AG

MOSES ORGANIC FACT SHEET

The Facts about Organic Agriculture

As an organic farmer, as a buyer of organic products, or as someone interested in what organic farming is all about- it helps to know the facts. Unfortunately there is a lot of misinformation out there about organic agriculture. Some of this is due to simple misunderstanding, but some of it is a deliberate attempt to discredit organic agriculture. Organic is a true success story of modern agriculture and with that success have come scrutiny, criticism, and sometimes even deliberate misinformation.

Myth: Organic Cannot Feed the World
This criticism is mostly based on the "lower production per acre" premise. Here are some actual quotes that exemplify this myth:

"Organic is too small and unproductive to ever be the 'solution' to our need to simultaneously feed the world and protect the environment." Slate – *"Organic Crops Alone Cannot Feed the World,"* March 10, 2011

"Organic is an impractical system of food production that is unsustainable, primarily because it is simply incapable of feeding the world." Alex Avery – Center for Global Food Issues, Hudson Institute

"The real reason organic farming isn't more green than conventional is that while it might be better for local environments on the small scale, organic farms produce far less food per unit land than conventional ones. Organic farms produce around 80% that what the same size conventional farm produces." Christie Wilcox, Scientific American, *"Mythbusting 101: Organic Farming"* July 18, 2011

Fact: Organic Can Feed the World

Rodale Institute 30-Year Farming Systems Trial

Rodale has recently completed their report on the longest side-by-side conventional vs. organic farming systems trial ever completed in the United States. Here are some of their conclusions:
- Organic yields match conventional yields in long-term trials.
- Organic outperforms conventional in years of drought.
- Organic farming systems build rather than deplete soil organic matter, making it a more sustainable system.
- Organic farming uses 45% less energy and is more efficient.
- Conventional systems produce 40% more greenhouse gases.
- Organic farming systems are more profitable than conventional.

The Long-Term Agroecological Research (LTAR) Experiment – Iowa State University

Organic crop systems can provide similar yields and much higher economic returns than a conventional corn-soybean rotation, according to 13 years of data from a side-by-side comparison at Iowa State University's Neely-Kinyon Research and Demonstration Farm.

Some of the findings from this experiment:
- Averages from 13 years of the LTAR experiment show that yields of organic corn, soybean and oats have been equivalent to or greater than conventional counterparts.
- On average, returns to management (after deducting labor, land and production costs) for organic systems are roughly $200 per acre greater than conventional returns, according to actual LTAR data and modeling.
- Organic systems have lower production costs because they eliminate the need for expensive herbicides and synthetic fertilizers.
- The results suggest that organic farming can create greater efficiency in nutrient use and higher carbon sequestration potential.

Allegation: Organic Farmers Use Pesticides!

"Many people believe that organic farming involves little to no pesticide use. I hate to burst the bubble, but that's simply not true. Organic farming, just like other forms of agriculture, still uses pesticides and fungicides to prevent critters from destroying their crops; turns out that there are over 20 chemicals commonly used in the growing and processing of organic crops that are approved by the US Organic Standards."
Christie Wilcox, Scientific American, *"Mythbusting 101: Organic Farming"* July 18, 2011

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Fact: Organic Farmer Do Not Use Persistent Organic Pollutants

While it is true that organic farmers can use natural pesticides, and even a few synthetic ones, these inputs must be approved for use by the National Organic Standards- pesticides that have been reviewed and approved by the National Organic Standards Board. This is a unique and very open process, where materials are proposed, public discussion allowed and final decisions made by the Board based upon the National Organic Standards and the input from the organic community.

All pesticides on the National List of Allowed Substances are restricted use. An organic farmer can only use pesticides if their cultural and biological controls have failed. Pesticides in an Organic System Plan are never primary control options. This is a very important distinction- in many conventional farming systems, pesticides are primary inputs that are always used no matter the actual pest pressure (Roundup is a good example).

There are really three primary considerations that must be considered when looking at pesticides: toxicity, carcinogenicity, and persistence in the environment.

Toxicity: All pesticides are toxic; that is how they kill pests. It is the level of toxicity that needs to be considered. The most toxic natural pesticides have been prohibited under the NOS. Nicotine and rotenone are both prohibited despite being natural, because of their high toxicity.

Carcinogenicity: Is a pesticide carcinogenic? The Environmental Protection Agency weighs the economic value of a pesticide against the negatives (like carcinogenicity) when approving them. Unfortunately, the true impact of synthetic chemicals is often learned at a later date and then discontinued.

• Of the 28 pesticides estimated by EPA to be most widely used in agriculture, more than 40 percent are classified by the EPA as likely, probable, or possible carcinogens*- none of which are allowed under the National Organic Standards.
*Source: Northwest Coalition for Alternatives to Pesticides

• There are a total of 34 "Food Use" pesticides classified by the EPA as potential human carcinogens*—none of which are allowed under the National Organic Standards.
*Source: Journal for Pesticide Reform

Persistence: This is the length of time it takes for a pesticide to break down in the environment. Pesticides that are toxic, carcinogenic and very persistent represent the greatest threat to human and environmental health. Of the EPA's "Dirty Dozen" Persistent Organic Pollutants, nine are agricultural pesticides and none of them are allowed under the National Organic Standards.

Allegation:
Organic Foods have Pesticide Residues

Organic skeptics charge that studies have found pesticide residues on organic foods, therefore the integrity of organic food must be called into question. Or worse, they imply that organic farmers are cheating. These are the often-cited studies:

• "Just over 1% of organic foodstuffs produced in 2007 and tested by the European Food Safety Authority were found to contain pesticide levels above the legal maximum levels – and these are of pesticides that are not organic."
• "Consumer Reports purchased a thousand pounds of tomatoes, peaches, green bell peppers, and apples in five cities and tested them for more than 300 synthetic pesticides, they found traces of them in 25% of the organically-labeled foods."
Christie Wilcox, Scientific American, "Mythbusting 101: Organic Farming" July 18, 2011

FACT: Organic Foods Have Fewer and Lower Pesticide Residue Levels

Of course just looking at pesticide residues on organic foods is not a complete analysis; you need to compare the results of both conventional and organic produce to get the whole story. Fortunately, this type of study has been done and the results are enlightening.

An analysis of pesticide residue data from 94,000 food samples, including 1291 organic samples, taken by the USDA, the California Department of Pesticide Regulation and by the Consumers Union, show "convincingly that organically grown foods have fewer and generally lower pesticide residues than conventionally grown foods. This pattern was consistent across all three independent data sets. Organic foods typically contain pesticide residues only one-third as often as conventionally grown foods do. Organic samples are also far less likely to contain multiple residues than conventional foods are. The Agriculture Department data showed that 73 percent of the conventionally grown foods had residue from at least one pesticide and were six times as likely as organic to contain multiple pesticide residues; only 23 percent of the organic samples of the same groups had any residues. The California data found residues in 31 percent of the conventional food and 6.5 percent in the organic. Consumer Union tests found residues on 79 percent of the conventional samples and 27 percent on the organic."
Source: Pesticide residues in conventional, IPM-grown and organic foods: Insights from three U.S. data sets.
By Brian P. Baker, Charles M. Benbrook, Edward Groth III, and Karen Lutz Benbrook. Published in: Food Additives and Contaminants, Volume 19, No. 5, May 2002, pages 427-446.

We live in a polluted world. Pesticide residues can happen on the organic farm from environmental contamination (wind/rain), pesticide drift, poor shipping and handling practices, improper storage or by commingling with conventional food products at the wholesale and retail food chain.

The main point is that organic foods have been shown to drastically reduce a consumer's exposure to pesticide residues. It is also important to note that farmers and manufacturers of certified organic products have never made any guarantee of their foods being "pesticide-free." This is an impossible claim due to the ubiquitous presence of pesticides in our environment.

Myth: Organic Food is Not More Nutritious

"Some people believe that by not using manufactured chemicals or genetically modified organisms, organic farming produces more nutritious food. However, science simply cannot find any evidence that organic foods are in any way healthier than non-organic ones—and scientists have been comparing the two for over 50 years."

Christie Wilcox, Scientific American, *"Mythbusting 101: Organic Farming"* July 18, 2011

This myth centers around a study published in the July, 2009 issue of the American Journal of Clinical Nutrition. Their conclusion:

"On the basis of a systematic review of studies of satisfactory quality, there is no evidence of a difference in nutrient quality between organically and conventionally produced foodstuffs. The small differences in nutrient content detected are biologically plausible and mostly relate to differences in production methods." Nutritional quality of organic foods: a systematic review: Alan D Dangour, Sakhi K Dodhia, Arabella Hayter, Elizabeth Allen, Karen Lock, and Ricardo Uauy

FACT: New Research Shows That Organic Food is More Nutrient Dense and Higher in Antioxidants.

Organic foods also do not contain artificial flavors, sweeteners or dyes. In their own review of the same studies used in the "Nutritional Quality of Organic Foods" study, The Organic Center Team reached very different conclusions:

"The London team reported finding statistically significant differences between organically and conventionally grown crops in three of thirteen categories of nutrients. Significant differences cited by the team included nitrogen, which was higher in conventional crops, and phosphorus and tritratable acids, both of which were higher in the organic crops. Elevated levels of nitrogen in food are regarded by most scientists as a public health hazard because of the potential for cancer-causing nitrosamine compounds to form in the human GI tract. Hence, this finding of higher nitrogen in conventional food favors organic crops, as do the other two differences. Despite the fact that these three categories of nutrients favored organic foods, and none favored conventionally grown foods, the London-based team concluded that there are no nutritional differences between organically and conventionally grown crops."
"Across all the valid matched pairs and the 11 nutrients included in the TOC study, nutrient levels in organic food averaged 25% higher than in conventional food. Given that some of the most significant differences favoring organic foods were for key antioxidant nutrients that most Americans do not get enough of on most days, the team concluded that the consumption of organic fruits and vegetables, in particular, offered significant health benefits, roughly equivalent to an additional serving of a moderately nutrient dense fruit or vegetable on an average day."
Organic Center Response to the FSA Study July 2009, Charles Benbrook, Ph.D., Donald R. Davis, PhD., Preston K. Andrews

The Organic Center has also published the report **"New Evidence Confirms the Nutritional Superiority of Plant-Based Organic Foods," State of Science Review, March 2008** Author(s): Charles Benbrook, Xin Zhao, Jaime Yanez, Neal Davies, Preston Andrews.

In their comprehensive review of both older and more recent peer-reviewed studies, they found that organic foods were nutritionally superior in 61% of the cases and conventional foods superior in 37% of the cases. Organic food was consistently superior in polyphenol and antioxidant levels and that "the differences documented in this study are sufficiently consistent and sizable to justify a new answer to the original question—***Yes, organic plant-based foods are, on average, more nutritious."***
The National Organic Standards ban or severely restrict the use of food additives, processing aids and fortifying agents commonly used in non-organic foods, including preservatives, artificial sweeteners, artificial colorings and flavorings, and monosodium glutamate (MSG).

Myth: Organic Food is more dangerous.

• Organic farmers use manure therefore there is a greater risk of contamination.
• Organic food has higher levels of E. coli and salmonella contamination.

Fact: There is no evidence to support the claim that organic food is more dangerous.

On February 7, 2000, John Stossel from **ABC's** 20/20 argued in "The Food You Eat," that organic produce may in fact be more dangerous than conventional produce, with ABC's tests showing increased levels of E.coli bacteria in organic sprouts and lettuce. He also maintained that the tests found no pesticide residue in either the conventional or organic produce, thereby removing a key reason for buying organic food. The problem was that Stossel fabricated the story—no tests were ever conducted: