

# ?

# what's organic

## organic production systems promote:



soil conservation



water conservation



biodiversity

## organic production systems prohibit:



antibiotics and  
hormones



genetic  
engineering



synthetic  
pesticides



irradiation



sewage sludge

**This exhibit will discuss various topics  
regarding organic food production.**

**Yield:** can organic methods feed the world?

**Environment:** is organic better for the earth?

**Cost:** why is organic more expensive?

**Livestock:** what is organic animal production?

**Health:** is organic food better for you to eat?

**Value:** is buying organic for you and your family?



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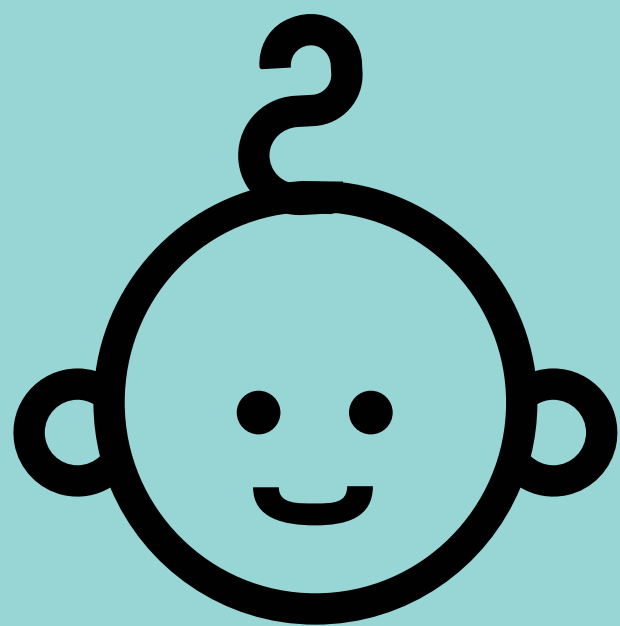
Thanks to the Minnesota Institute for Sustainable Agriculture for contributing to this exhibit. Also thank you to Jim Riddle and the University of Minnesota for many excerpts included in the text.

# ? what's organic health

## Is eating organic food better for your health?

You may have read that there are higher nutrient levels in some foods like vitamin C in organic tomatoes or studies that show higher amounts of omega 3 fatty acids in pasture raised livestock and organic whole milk. Those claims are difficult to substantiate in the overall health of a person eating an organic diet because we need more research.

But here is where personal health reasons for eating organic can be better substantiated. That is in the reduced exposure to synthetic and persistent pesticides, fertilizers, growth hormones, artificial ingredients, and preservatives.



**“Consuming food grown using organic production methods can virtually eliminate exposures to a dangerous class of insecticides known to disrupt neurological development in infants and children.”**

— University of Washington



**Farmers must be extremely careful how they apply and store these pesticides and chemical fertilizers to minimize risk to themselves and the environment.**



**“Exposure to pesticides can be decreased by choosing, to the extent possible, food grown without pesticides or chemical fertilizers... Similarly, exposure to antibiotics, growth hormones, and toxic run-off from livestock feed lots can be minimized by eating free-range meat raised without these medications.”**

— 2010 Government Cancer Panel



Sources:

Nutrients - <https://www.ncbi.nlm.nih.gov/pubmed/26878105>

Pesticide Exposure - “Environmental Health Perspectives,” doi:10.1289/ehp.10912 available via <http://dx.doi.org/> [Online 15 January 2008] · “Reducing Environmental Cancer Risk: What We Can Do Now.” 2010. Dr.LaSalle Leffall, Jr., Howard University, and Dr. Margaret L. Kripke, M.D. Anderson Cancer Center in Houston.



# ? what's organic yield

## Can organic production systems feed the ever increasing global population?

Even with an estimated 10 to 20% lower yields than conventional production systems? In a word, **YES**. But the “how” it can feed the world is where the question becomes interesting. While no one much likes to change their behavior... it may be that the world will need to adjust “how” it eats and what it wastes.

### A little background

About half of the agricultural production world wide is made up of three crops - Corn, Wheat and Rice – the majority grown with synthetic pesticides and fertilizers.

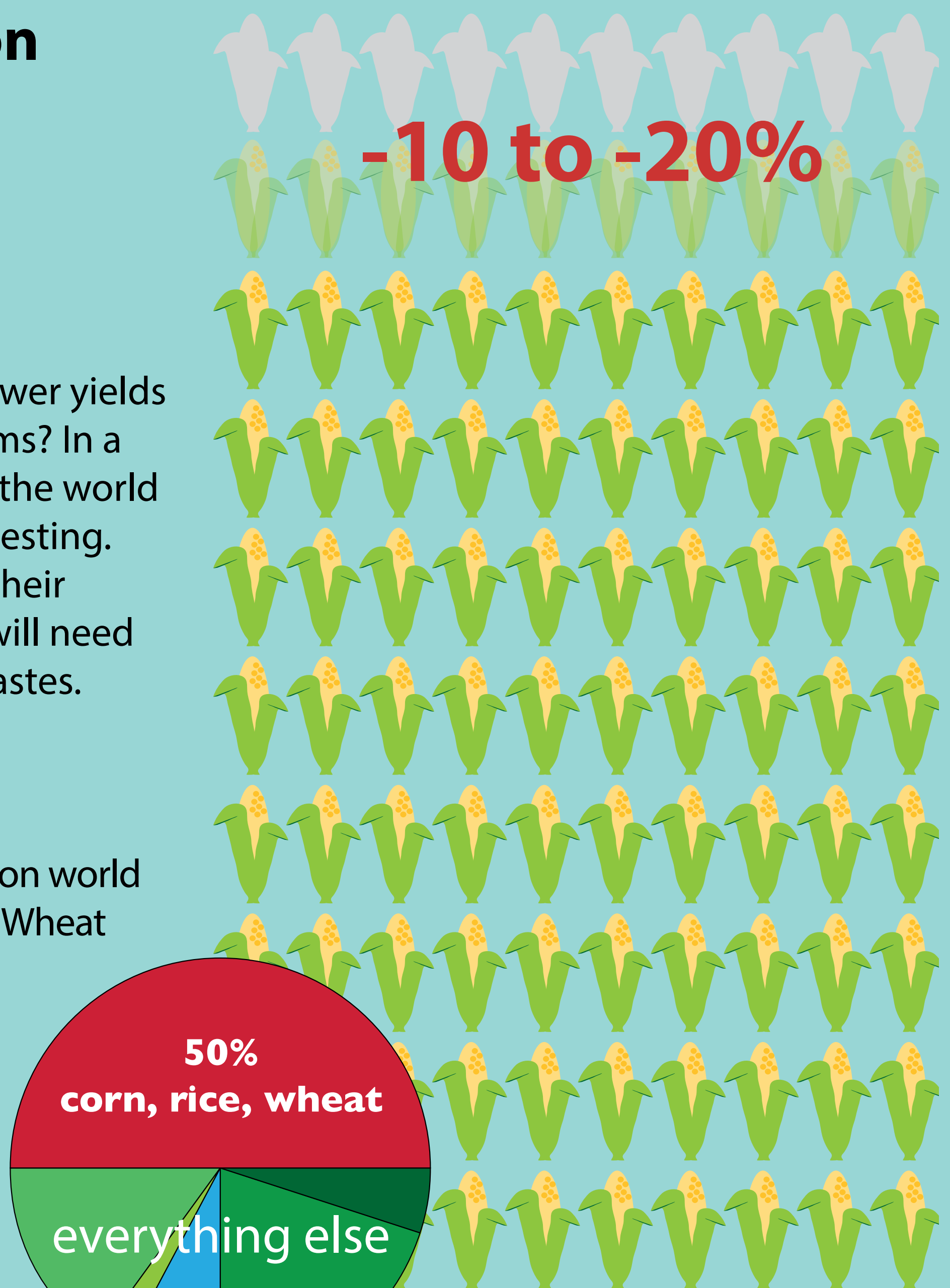
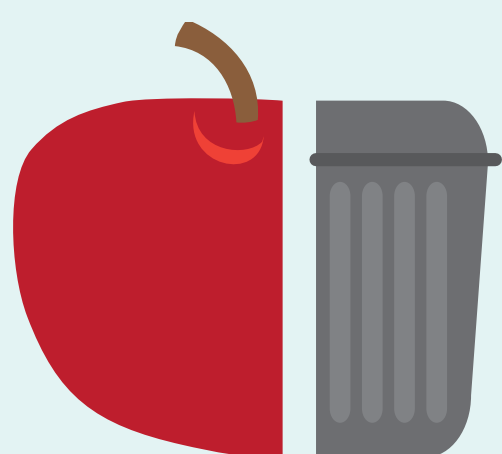
An analysis of over 200 studies suggest that converting all food production to organic would (at worst) lower production of those three (and other) crops by 10 to 20%. Crops like rice would see very little decline... ~3%, corn would see the most... ~10-20%

So let's take corn for example. About half of corn is made into ethanol, a third is made into feed for animals and the remaining 20% is consumed by people (the majority of corn is made into food additives like High Fructose Corn Syrup, artificial colors, and lysine.) So while corn yields would be affected, the impact on food production could be mitigated by directing more acres dedicated to corn towards food production.

### did you know:

Estimates of world-wide food waste are between 30-40%.

If we could do a better job of getting food to hungry people it would more than make up for any reduction in lower yields.



For the other ½ of the food we grow? – grain, legumes, fruits, vegetables and nuts – those yields, in many situations, actually go up.

In developing countries access to chemicals for agriculture is often lower because of their high cost. So many places in the world are already using organic methods for food production and so their production would not change at all.

One last thing: if we could reduce the amount of food that is wasted every year - it would more than make up for any potential drop in yield.



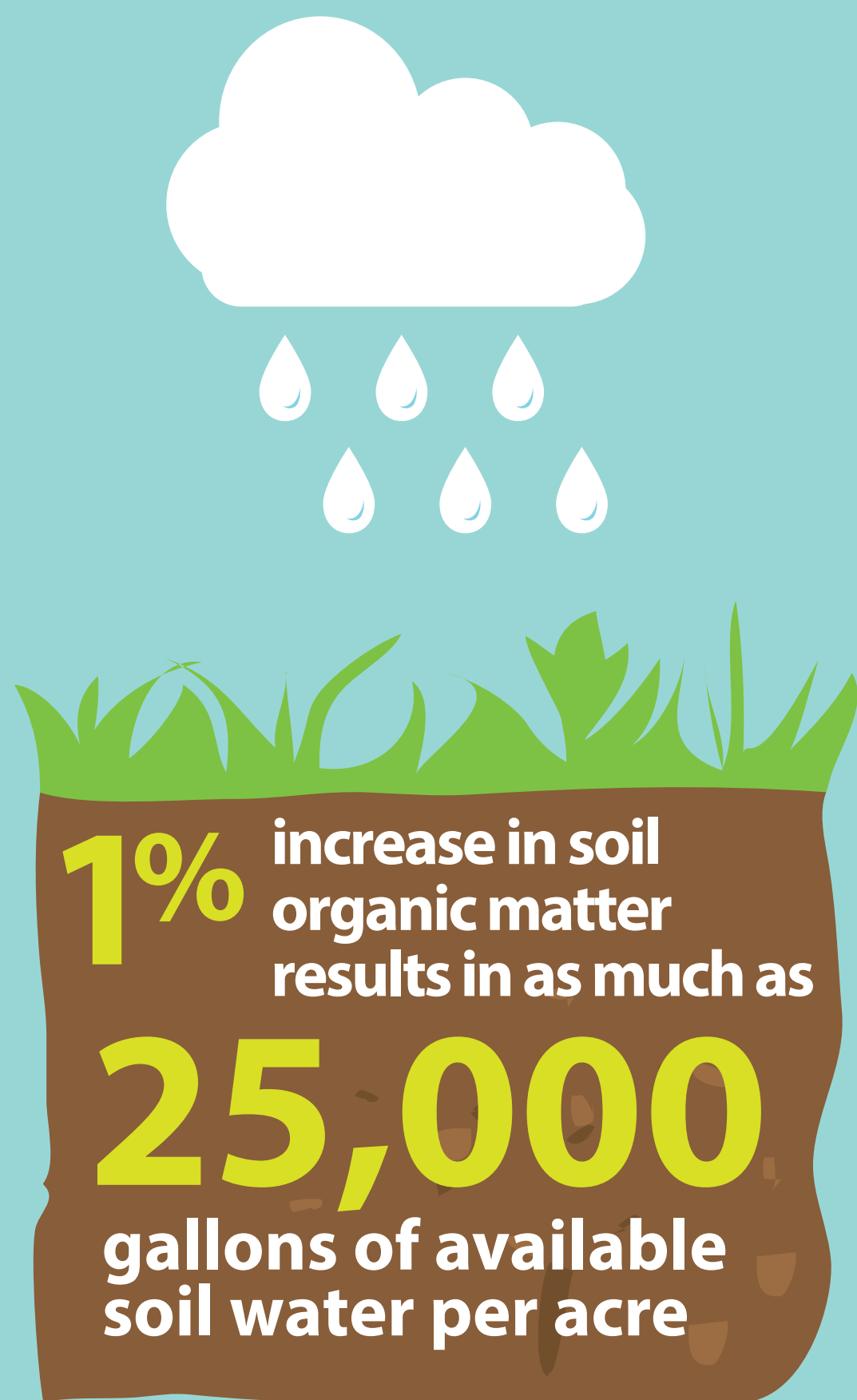


# ? what's organic environment

## Water Quality

Drinking water can be contaminated with nitrates, which can cause negative health impacts, especially in young children.

In studying water originating on farm fields, University of Minnesota researchers found that alternative cropping systems, including organic, reduced the amount of water lost in run-off by 41 percent and reduced nitrate-nitrogen levels by 60 percent.



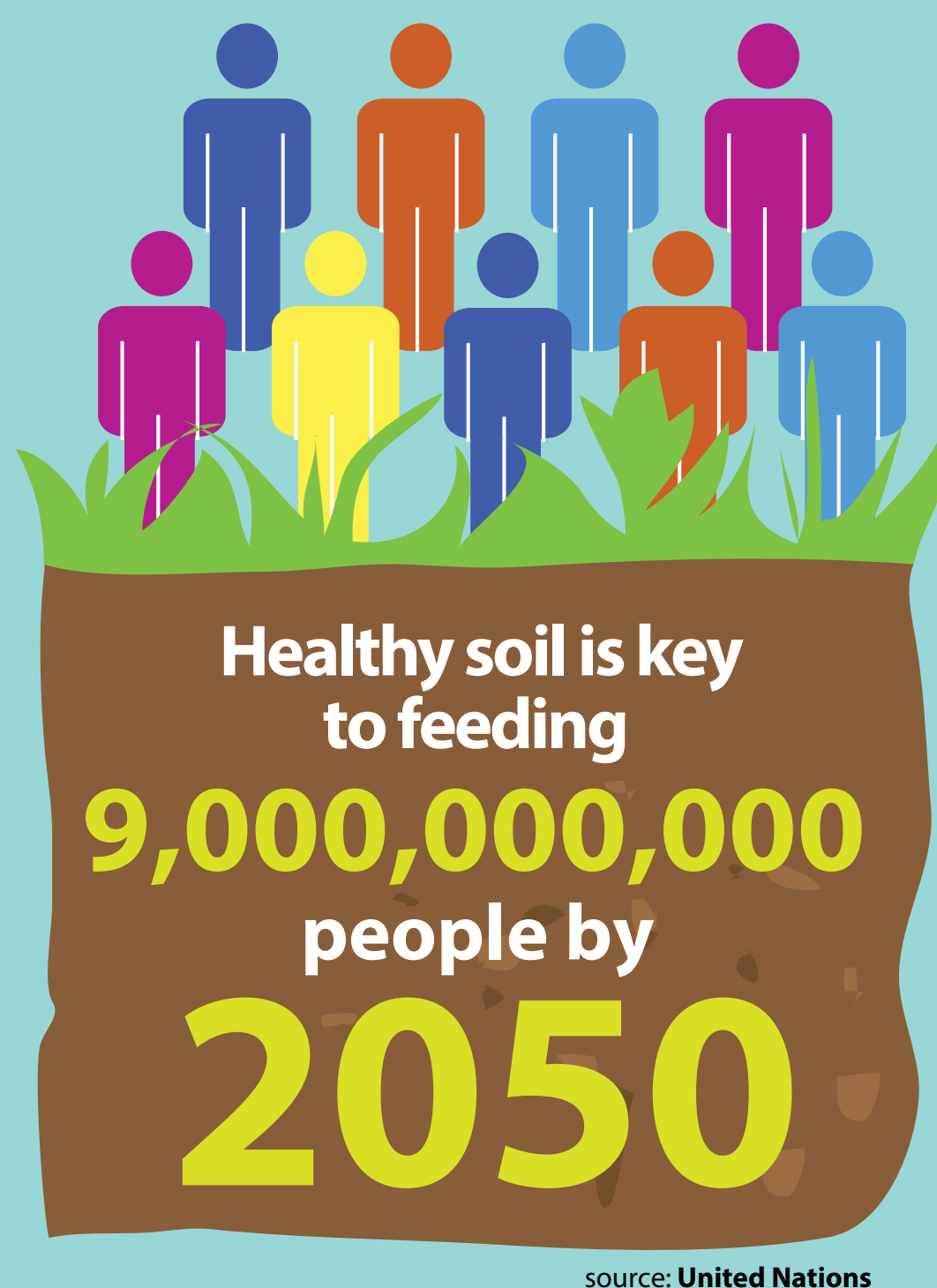
source: Kansas State Extension Agronomy e-Updates, 2012

Organically-managed soil can hold more water, so not only does it limit runoff, it also mitigates the effects of drought.

## Soil Quality

Long-term USDA-ARS research has shown that organic farming practices significantly build soil organic matter content.

The research showed that organic farming improved soil organic matter because the use of manure and cover crops more than offset losses from tillage.



source: United Nations

In research conducted by Iowa State University, by the fourth year in an organic crop rotation, organic corn and soybean yields rose above county averages.

The improving performance in the organic plots was attributed to soil quality improvements: more soil organic matter, enhanced microbial activity in more diverse communities of organisms, and reduced soil acidity.

## Biodiversity

Biodiversity is fundamental to organic farming. Diverse plant communities support beneficial insect communities that manage pest populations, mitigating the need for highly toxic insecticides.

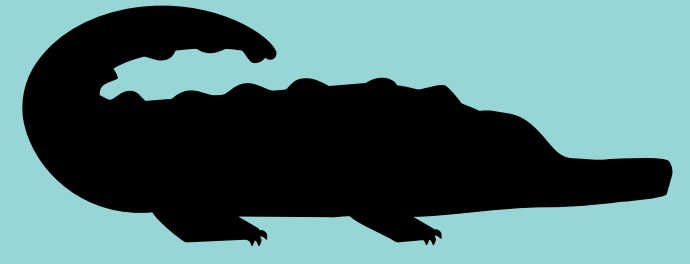
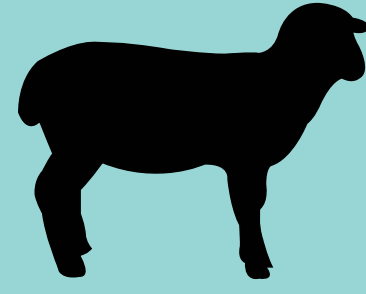
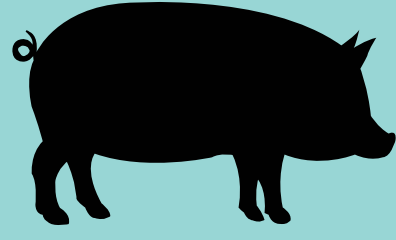
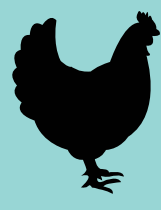
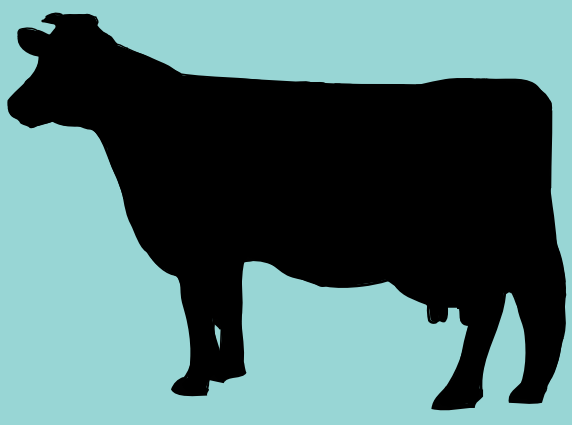
Organic farming increases biodiversity at every level of the food chain – all the way from bacteria to mammals.

35 percent of the world's food crops depend on insect pollinators to reproduce. More than 3,500 species of native bees and other insect pollinators help increase crop yields.

Some scientists estimate that one out of every three bites of food we eat exists because of animal pollinators like bees, butterflies and moths, birds and bats, and beetles and other insects.



# ? what's organic livestock



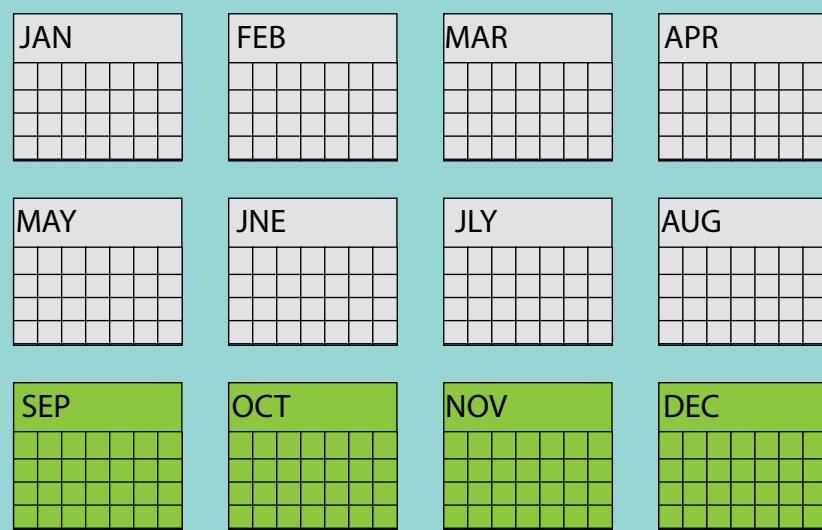
What is required for raising certified organic livestock and dairy animals?



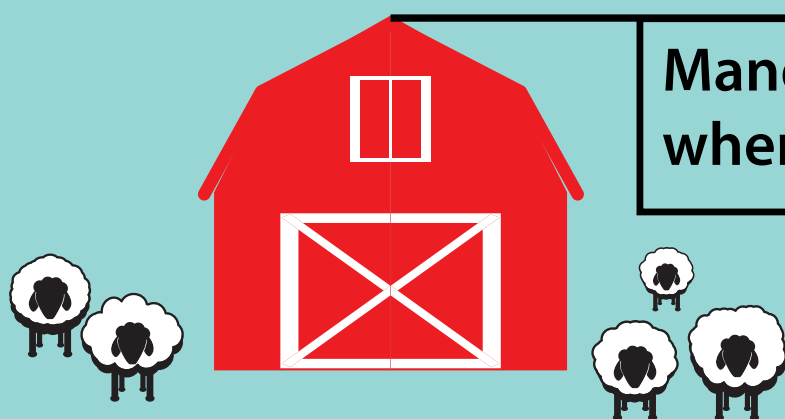
**YES!**



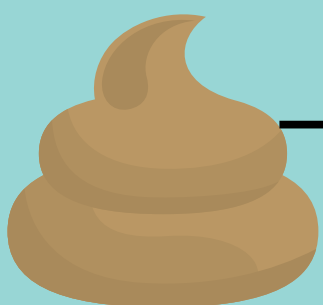
100% organic feed for all organic animals - pastures where the animals graze must also be certified organic.



Ruminants like dairy cows must spend at least 120 days on pasture.



Mandatory outdoor access for all species when weather is suitable.



Manure must be managed to prevent contamination of crops, ground and surface water, and soil.



Farmers must implement preventative health care practices - vaccines are allowed;. Operators must not withhold treatment in order to preserve an animal's organic status - any animal treated with a prohibited substance must not be used or sold as organic.



**NOT SO MUCH**



No antibiotics or growth hormones.



No Genetically Modified Organisms (GMOs), or feeding of animal by-products.





# ? what's organic cost

## Why do organic foods cost more?

You might think organic food would cost less than conventional food since the production is spared the cost of the chemicals, synthetic pesticides, and antibiotics. Yet organic products typically cost 20 percent to 100 percent more than their conventionally produced equivalents.

1. Fewer chemicals = more labor
2. Organic inputs like seeds, natural pesticides, and fertilizer are more expensive
3. Crop rotation means land that is “resting” or building soil fertility for a season is also not producing a marketable crop
4. Organic certification expenses & paperwork



Turns out that the price you pay for organic foods is often actually much closer to the real cost of production.



# ? what's organic value

## Is buying organic food a good choice for me and my family?

This exhibit can't answer this for you. Will switching to organic pancakes save the environment? Prevent you from getting cancer? Make you happier, healthier and stronger? Research continues...

But, when you consider this question, remember the power of your shopping dollar. Choosing organic foods sends a message to retailers: it says that you're standing up for responsible food production, voting for safe farm labor, supporting safe water, healthy soil, and healthy pollinator habitat.

## Do 'organic' and 'natural' mean the same thing?



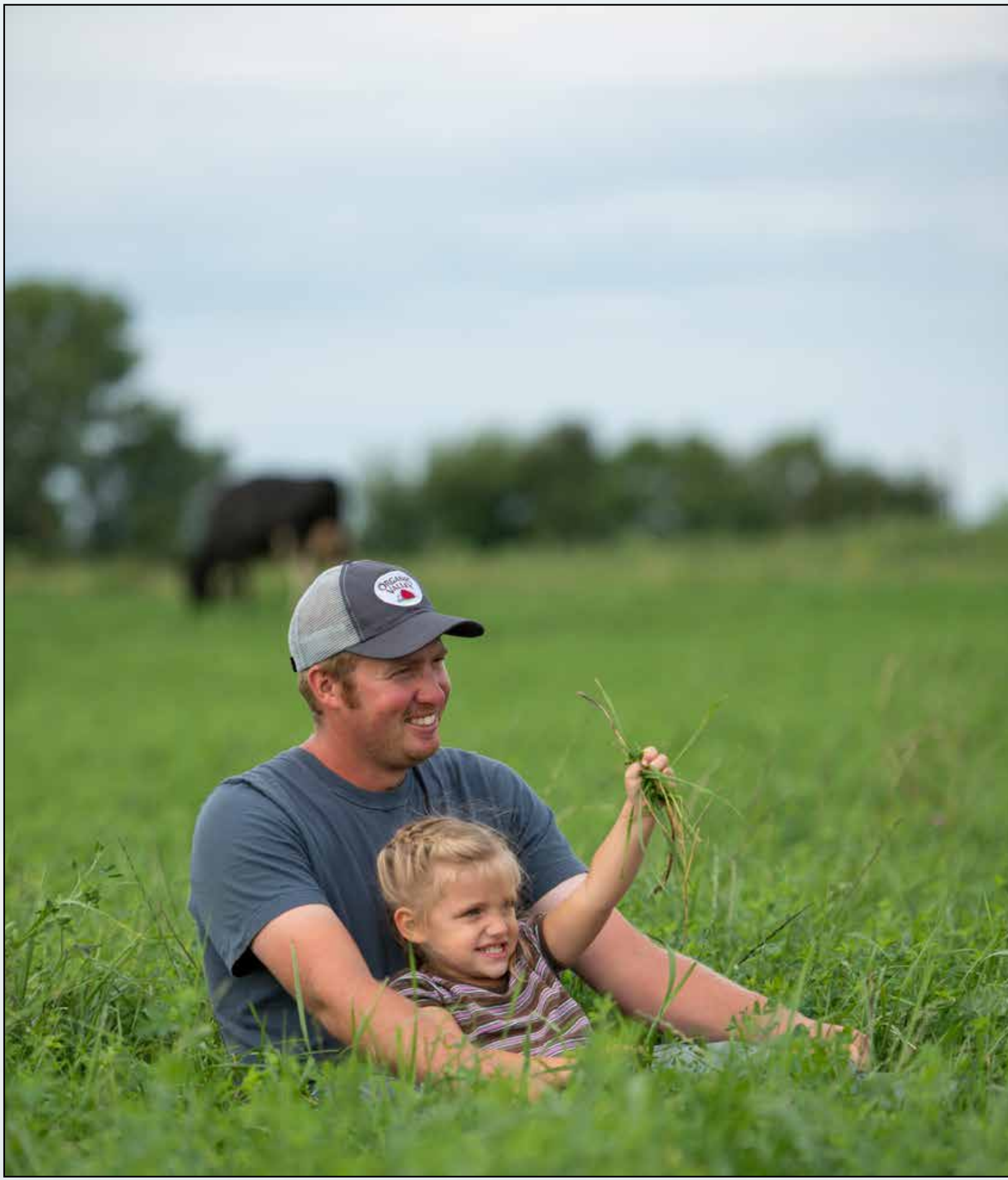
No, "natural" and "organic" are not interchangeable terms. Unlike "organic," "natural" is not a regulated term. In general, "natural" on a food label may mean that it has no artificial colors, flavors or preservatives, but you will still want to read that ingredient list. Keep in mind that "natural" or "Non-GMO" also does not refer to the methods or materials used to produce the food.

Other increasingly-common food labels should also not be confused with organic labels. Labels like "free-range" or "hormone-free," while they must be used truthfully, do not ensure a farmer followed all guidelines for organic certification. "Sustainable, Humane, Beyond Organic" - terms and labels that are all well intentioned - still lack the basic standards and oversight of a USDA Certified Organic label.





# ? who's organic **Dan and Luke Elsenpeter**



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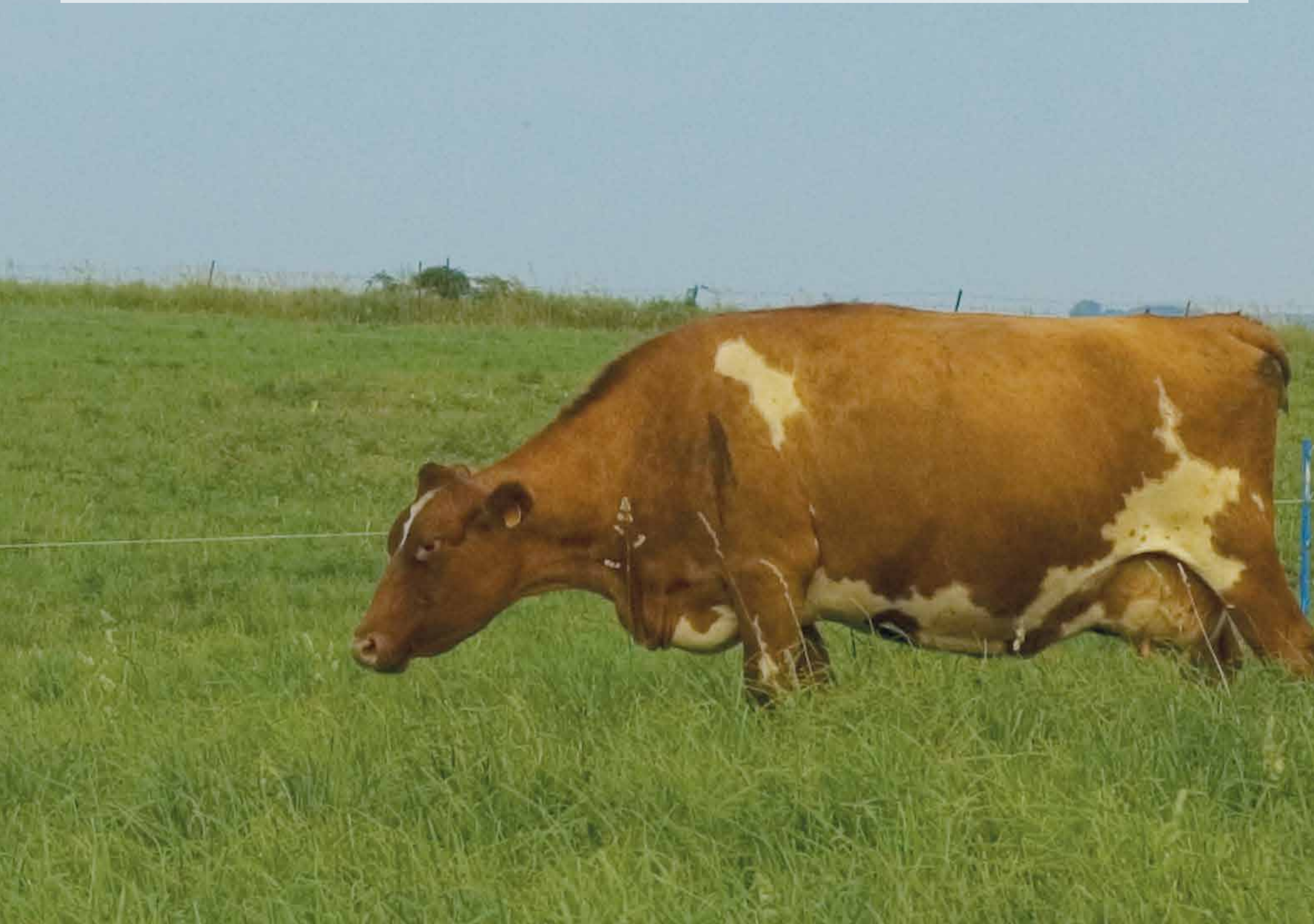
Brothers Dan and Luke are the fifth generation to work their Wright County Minnesota land.

Between their two young families, the sixth generation is coming on like gangbusters.

They farmed conventionally until 2006 when they completed their transition to certified organic.

“Dan was all for it,” Luke says, “but I was skeptical. I was young at the time, 24, and thinking of my pride and how it would go over in the area. But once I did more research on it, I said the heck with the pride thing.

We decided to turn it around. We quit spraying chemicals and let Mother Nature take her course. Before we went organic, we made a couple of small pastures just to get the cows out of the barn and moving around in the summer. We saw health benefits even from that little bit of pasturing. Now, I don’t think I’ll ever go back. ”





# ? who's organic **Oscar Omar Alonso**

Oscar is one of the most well-known producers in Honduras because of his ingenuity and dedication to thinking outside the box when it comes to producing organic coffee. He is committed to certified organic farming as a method to improve his coffee and safeguard the environment. He completed his transition to organic in 2001 and uses an innovative composting system, including coconut husks as organic fertilizer.

“To dedicate yourself to organic production is an act of faith and perseverance in the hopes of achieving positive results for ourselves and our family. Organic production is a way of taking responsibility for the construction of a better world for our children. It gives them the opportunity to grow up healthy, and gives them the opportunity to have a better education and recognize the need to take care of our environment, so these same natural resources may still be available to others in the future.” -Oscar Omar Alonso





# ? who's organic Jack Hedin



At the HealthPartners office building in Minneapolis, a man opens a box and exclaims, “It’s just like Christmas!” The box, however, does not contain toys, a sweater, or other items commonly associated with Christmas. Instead, it holds a bountiful box of fresh produce. This present is his “CSA” share from Featherstone Farm.

“CSA” stands for Community Supported Agriculture. It is a way to buy local, seasonal produce direct from the farm. Members subscribe in the spring for a share of the farm’s summer harvest, which is delivered to their preferred pickup location. This partnership benefits both farmers and consumers. Farmers

receive payment early in the season, which helps with startup costs, while consumers save money and gain access to the freshest local produce.

Jack Hedin is the co-owner of Featherstone Farm, a 100 acre certified organic farm in Rushford Village, MN. He and his partner, Jenni McHugh, have grown certified organic vegetables since 1994.

“I’m hiring and mentoring new farmers, I want to nurture and grow more farmers; I want to see more people get involved.” Says Jack. “I believe there needs to be more people managing smaller tracts of farm land.”





# ? who's organic Hannah and Daniel Miller

Easy Yoke Farm has been certified organic for four seasons – although they were practicing organic methods from the very first carrot seed they planted. “We decided to actually get our farm certified organic when we moved more into the wholesale market. Before that, we were mostly selling direct to people at the farmers’ market and we could spend the time getting to know our customers and explain how we are doing things,” says Hannah. “But when you are selling to a customer 75 miles away at a Co-op in the Cities, it is hard to tell that story. Certifying organic assures people that we are growing produce with the best methods to bring them healthy, local, and tasty food.”

“Does it cost more to grow organically? Yes,” she adds. “But, while I don’t care much for the paperwork, and some of my supplies cost a bit more, it is worth it to know we are limiting the exposure to toxic chemicals around our kids, neighbors, and the planet.”





# ? who's organic Noreen Thomas

Noreen is the fifth generation to work her family's century-old property, Doubting Thomas Farms. There, she raises pork, chickens, turkeys, and grains and produces hay and eggs. Her background as a chemist helped her family decide to transition to organic.

"With chemical applications, sometimes there are affects you cannot see, on a cellular level," she explains. "Women are usually the caretakers, and they come from a place of wanting to provide the best environment for their children."

Noreen doesn't feel that organic methods have impacted her grain yields. In fact, with the development of better hybrids—accomplished through careful breeding rather than genetic modification—she finds "yields have actually increased to put us on par with conventional farming."

Noreen is one of the few approved farmers growing rare, indigenous seeds for Native Harvest. "The seeds are so sacred," she says, "but over the charts with nutrition. The elders knew it was good food for people. Now we're able to see the science of things. We need to look at nutrition vs. volume."





# ? who's organic **Abdinasir Warsame**



Abdinasir wanted to be a farmer. He'd never farmed before but he appreciated farming and was intrigued by the idea of nourishing himself and his family with what he grew. He'd watched countless documentaries on food and farming, but didn't have the foggiest idea of where to start.

So, he did what most of us do when we need an answer that isn't readily available: he Googled it. By a stroke of luck, he found a Somali-born farmer working land right here in Minnesota. Even better, Abdi knew him. This acquaintance connected him to the Minnesota Food Association's organic Farmer Training Program and he is now a first-year farmer.

Abdinasir explains: "[Before] I had no connection to food. But I want to have a relationship with what I eat. It's a responsibility. I like that they teach us hands-on skills. We learn irrigation, bookkeeping, inventory, marketing, how to fix things. All these skills fit together and are necessary."

He adds, "There are so many things that are out of your control. You can't program the weather like you program your phone. It's out of your hands. You just make every day the best day you can."





# ? who's organic **Lisa Baker**

Lisa Baker operates 15 acres of certified organic farmland located in Avon, MN. Bakers Acres sells produce direct to individuals through a CSA program, as well as to co-ops and restaurants in the Twin Cities and Central Minnesota. She also raises livestock including pastured poultry, eggs, and grass-finished beef.

She began in 2010 with the conversion from a conventionally farmed rye field into certified organic growing methods and began offering CSA shares in 2012. Lisa and her parents support the farm work, along with a handful of hired seasonal workers.

The farm hosts participation days, events, and on-the-farm culinary productions as part of its mission to connect people with the land. The farm is also active in educational activities, policy and community-building initiatives to help promote restorative agriculture and sustainable food systems.

"I love, love, love! having my neighbors come to the farm to talk about why organic is important and, how they can be part of a local food system that makes us all stronger," says Lisa. "I'm proud to say, 'We're certified organic!' so my customers know my farm is using non-GMO seeds, no prohibited synthetic pesticides/herbicides/fungicides, and that I am systematically and consistently building soil health with cover crops, common sense water management systems, increasing biodiversity, and meeting food safety standards."