



TRANSITION TO ORGANIC COURSE

CHAPTER 1

WHY ORGANIC?

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CHAPTER 1

WHY ORGANIC?

INTRODUCTION

WHY ORGANIC?

There are several considerations in the argument for transitioning to organic agriculture. From an environmental standpoint, organic agriculture builds life in the soil while avoiding the use of toxic chemicals that can accumulate in soil, water, food, and people. Non-organic farming relies on dwindling fossil fuel resources, while organic farmers build their own fertility into their systems, which improve over time and do not rely on outside inputs.

From an economic point of view, organic farming has been one of the fastest-growing sectors of agriculture for more than a decade—by 20 to 24 percent annually since 1990—and allows farmers to reap up to three times the profit margins of non-organically raised meat and produce. The [U.S. Department of Agriculture](#) estimates that U.S. sales of organic food and beverages grew from \$1 billion in 1990 to nearly \$35 billion in 2014, and the

Agricultural Marketing Service expects this trend to continue.

From the perspective of community, organic food and agriculture are a means of supporting local and regional businesses that build the vitality and strength of our communities. The growth of both farmers markets and the Community Supported Agriculture movements serve as a testament to the ability of organic farming to revitalize downtown centers and reestablish partnerships between regional agricultural and urban areas.

OBSTACLES TO THE TRANSITION

According to the Economic Research Service of the U.S. Department of Agriculture, “obstacles to adoption by farmers include high managerial costs and risks of shifting to a new way of farming, limited awareness of organic farming systems, lack of marketing and infrastructure, and inability to capture marketing economies.” Initial reduction in yield during the transition process, as the soil recovers from previous management, can also be a disincentive to adopt organic farming.

Still, reports the USDA, many U.S. producers are embracing organic farming in order to lower input costs, conserve nonrenewable resources, capture high-value markets, and boost income

FARMER-TO-FARMER

“We strongly believe in looking at the farm as a whole system. On our farm, the three biggest challenges are weeds, insects and fertility, but I love our switch to organics. I’ve seen better health in our soil because of it, and the farm has a better balance. What stops my neighbors from doing the same thing? I think it’s the work, the record keeping and the uncertainty.”

—Ron Rosmann, Harlan, IA

By breaking the process into manageable steps, you will probably find the transition from non-organic to organic management to be both profitable and rewarding. Many farmers who have made this transition have told us that their organic management practices have brought a new sense of fun and satisfaction to their work and to their lives as a whole.



Photo Credit: Jack Sherman

Picture of organic farmland

A BRIEF HISTORY

A BRIEF HISTORY

Prior to the mid-20th century, agriculture was generally smaller in scale and was largely organic-based. Farmers and gardeners utilized cover crops, animal and green manures, and other natural means of managing the fertility of the soil, thereby also limiting the effects of pests and diseases on their crops by encouraging a healthy and balanced ecosystem.

From the Second World War to the conflict in Vietnam, chemical manufacturers produced a surplus of chemical nerve agents, ammonium nitrate (used in explosives), and various defoliants that soon became the pesticides, fertilizers, and herbicides of the Green Revolution.

The publication of Rachel Carson’s *Silent Spring* in 1962 spurred the environmental awakening of the 1970s that gave rise to early sustainable agriculture efforts. These, in turn, evolved into the organic agriculture and food movements of today. Now farming with chemicals is being questioned more carefully as people begin to realize that—to put a twist on Newton’s third law of motion—what goes in must come out, somewhere and sometime.

PIONEERING ORGANICS

J.I. Rodale popularized the term “organic” when he founded *Organic Farming and Gardening* magazine in 1942. J.I. and early contemporaries—such as Rudolf Steiner, Sir Albert Howard, and Lady Eve Balfour—believed that healthy soil was the key to proper nutrition and human health. Now, in the 21st century, modern science is proving that they were right.

J.I. bought his farm outside Emmaus, Pennsylvania, in 1941, and in 1947 founded the Soil and Health Foundation—known today as the Rodale Institute—to “conduct, engage, foster, and encourage scientific research and study, teaching, training, informing, and educating the public on and concerning the soil, food, and the health of people and their relationship to each other.”

When J.I. Rodale died in 1971, Robert Rodale and his wife, Ardath, continued the work that he had begun. In 1972, they bought the 333-acre farm near Kutztown that is the present-day home of the Rodale Institute, and in 1979, they introduced *The New Farm* magazine to educate farmers about organic agriculture.

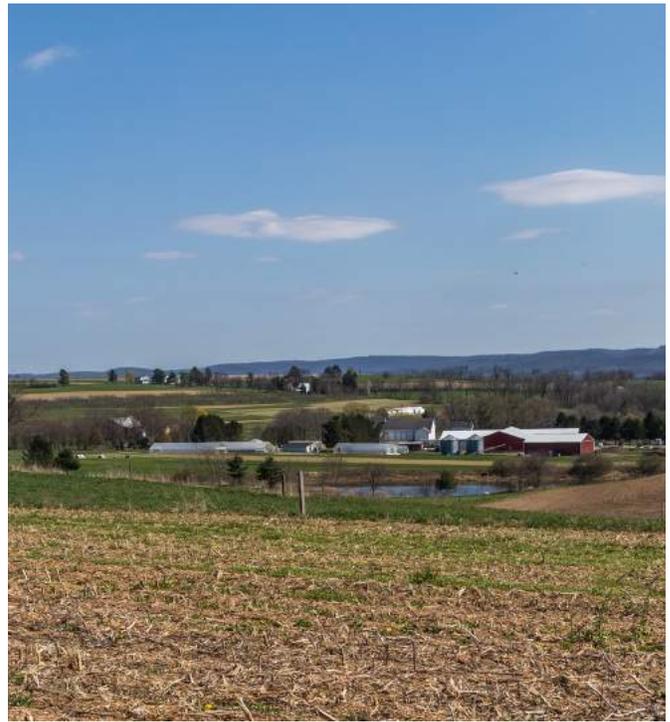


Photo Credit: Jack Sherman

Rodale Institute
Kutztown, PA

- Years: owned and operated organically since 1972
- Size: 333 Acres
- Crops: corn, soybeans, small grains, apples, mixed vegetables
- Marketing Methods: direct-to-farmer (feed), grain mills, brokers, CSA, visitors center
- Soil: shaley silt loam
- Season: Frost-free period, generally May 15 to September 15



INPUT FROM RODALE

“One of these days the public is going to wake up and will pay for eggs, meat and vegetables according to how they were produced. A sustainable premium will be paid for high quality products, such as those raised by the organic method.”

—J.I. Rodale

Source: *Organic Farming and Gardening*, May 1942

RESEARCHING THE TRANSITION

In 1981, the Conversion Project (now known as the Rodale Institute Farming Systems Trial) was undertaken to compare the performance of organic and non-organic systems in a replicated, side-by-side research trial. It has provided some of the first modern scientific evidence of the advantages of organic methods. That experiment continues today.

For 70 years, the Rodale Institute has been a pioneer in organic research, education and outreach, advocating organic food production

techniques as a means of renewing human and environmental health. The Institute’s organic and regenerative research empowers millions of people around the globe to reshape their lives and their communities. Our research helped launch today’s global organic movement and continues to provide rigorous, credible scientific data to promote organics in mainstream markets in the U.S. and throughout the world.

Our farm operations programs support our field research and grow certified organic corn, soybeans, small grains, vegetables, apples, and other crops on our farm in southeastern Pennsylvania.

Our international programs work with people in Latin America and the Caribbean, Africa, Europe, and Asia to provide solutions to the issues of soil improvement, nutrition, hunger, poverty, community regeneration, and natural resource management.

Our education, training and outreach

programs teach children, adults, and institutions about organics and regenerative agriculture.

WHOLE-SYSTEM FARMING

Our research shows that agricultural productivity can be judiciously enhanced through long-proven, ecologically sound soil-improvement methods without resorting to synthetic pesticides and chemical fertilizers.

Organic agriculture considers the farm as a complete, fully integrated, and self-sustaining ecosystem—which includes you—with the ultimate goal being to minimize or eliminate costly outside inputs. While some fertilizers—and even some naturally occurring pesticides and herbicides—may be allowable in some instances in organic production, it's much cheaper to build fertility as well as pest and disease resistance into the system.

How is this done? We're going to explore this thoroughly later on, but basically:

- You build fertility by adding organic matter such as compost, crop residues, and animal manures to your soil and by augmenting your cash crops with cover crops that improve the biological, chemical, and physical makeup of your soil.
- You manage pests and diseases by increasing the diversity of species on your farm.

FARMER-TO-FARMER

"Organic farming must be considered as a multiyear, whole farm system where no single management decision or individual crop can be viewed separately. Short-term profitability must be balanced with long-term sustainability."

—Mary-Howell and Klaas Martens
Penn Yan, NY

ORGANIC FARMING IS...

- Minimal use of external, off-farm inputs coupled with the exclusion of synthetic pesticides and fertilizers as well as growth hormones, genetically modified organisms, and antibiotics for livestock

- A focus on renewable resources, soil and water conservation, and management practices that maintain and enhance ecological balance and improve soil quality as measured in structure or tilth, total soil organic matter, and biological activity
- An increase of biodiversity both in the farm system itself and in the surrounding environment
- Use of cover crops and green manures in a crop rotation scheme that recycles nutrients, builds soil quality, and disrupts pest cycles
- Use of allowed biological and mechanical controls for those problems not handled by the cultural systems above

And...

"A production system that is managed in accordance with the [Organic Foods Production] Act ... to respond to site-specific conditions by integrating cultural, biological, and mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity."

—National Organic Program Standards, 2002

A SELF-SUPPORTING ECOSYSTEM

Organic farming is not simply the substitution of approved input materials. It is the replacement of a treatment approach with a process approach to create a balanced system of plant and animal interactions.

Once it is up and running, the organic system gains its own biological momentum. You begin to rely more on your own expertise and less on outside experts. As an organic farmer, you can be:

- More self-sufficient
- Less dependent on purchased inputs (which tend to get more costly as the price of oil rises)
- Paid for what you know and how hard you work
- The proprietor of a more family- and community-friendly business

- Building a complex enterprise focused on improved environmental and human health and long-term sustainability

PESTS, DISEASES, AND WEEDS

Organic farmers break pest and disease cycles by interspersing crop plots and by not planting the same crop year after year on the same piece of land, but instead rotating them.

Most insects on your farm are actually beneficial. Different plants attract different insects, and each one, in turn, has its own favorite food. The beneficial insects on your farm prey on the pests whose favorite foods happen to be your crops. This is another way diversity encourages a healthy and resilient system—the balance shifts in your favor when you encourage a diversity of species rather than upsetting the balance by killing pests and beneficial predators alike.

Crop diversity also reduces financial risks by avoiding the “all your eggs in one basket” scenario.



Picture of organic produce on grocery shelf

FARMER-TO-FARMER

“I don’t look at organic farming as a return to old methods before chemical use, because a lot of the old methods weren’t sustainable either. What we’re really trying to do is focus on understanding the whole system and have a rotation that provides weed and pest management and quality crop production.”

—Bob Quinn
Big Sandy, MT

One of the big mental shifts required for making the transition to organic production is how you think about weeds on your farm. While organic farmers surveyed consistently list weeds as one of their biggest challenges, we know from our research that crop plants will tolerate some level of weed pressure before yields are adversely affected.

Weeds can even have some beneficial qualities: they add organic matter to the soil when they are turned under, they keep the ground covered, and they contribute to the richness of the rhizosphere, or root zone, where an abundance of beneficial microbial activity takes place. Too many weeds, of course, can choke your crop plants

by robbing them of water, nutrients, sunlight, and space. It’s important to manage weeds by tillage or mowing before they go to seed.

ORGANIC CERTIFICATION

ORGANIC CERTIFICATION

In the early days of the organic farming movement in the 1960s, most organic farmers’ production was sold locally to people who knew and trusted them. As demand increased in the 1970s, the supply chain grew, with processors and distributors buying up large quantities of organic commodities and then selling them to retail outlets far from the fields where the food had been grown. The need arose for some kind of verification that the products had indeed been grown on farms following recognized organic practices.

The third-party certification system was developed to meet this need. By the 1980s, dozens of certification groups—many of them founded by farmers—had been created both here in the U.S. and in other countries. Robert Rodale and Rodale Institute were instrumental in these early efforts, helping to write and administer one of the first organic certification programs in the United

States.

All of these early, regional organic standards had a lot in common in terms of basic principles, but they sometimes differed in details. Consistent international standards were needed, especially for exporters. European importers were balking at buying U.S. products not certified to European standards. Concern was also growing about fraudulent organic labels on products that were actually not organic at all.

In 1990, in response to widespread demand from the organic sector, Congress passed the Organic Foods Production Act, charging the U.S. Department of Agriculture (USDA) with creating a federal system for organic certification. After prolonged debate, the National Organic Program Standards were finally implemented in 2002.

WHAT THE STANDARDS SAY

Once the USDA's National Organic Program (NOP)—the culmination of the Organic Foods Production Act of 1990—went into effect, all products labeled as “organic” were required to carry the USDA Certified Organic label. (Farmers who generate less than \$5,000 in sales annually are exempt from certification but still must follow the NOP Standards in order to market their products as organic.)

The NOP Standards require organic producers to manage soil fertility through the use of rotations, cover crops, and the application of plant and animal materials or low-solubility natural minerals. These practices must either maintain or improve soil organic matter content, manage deficient and excess plant nutrients, and control erosion.

FARMER-TO-FARMER

“When I first started farming, I used all the latest herbicides and fertilizers. But I didn't give up on the livestock and the crop rotations, because I recognized their value to the long-term health of the farm. This made the transition to organic farming much smoother.”

—Ron Rosmann
Harlan, IA

Producers must use preventive practices to manage crop pests, weeds, and disease. Organic livestock must have access to the outdoors, shade, shelter, exercise areas, fresh air and direct sunlight as is appropriate for the type of animal and the local climate. Organic livestock may not be given antibiotics or hormones and must be fed 100% organically grown feed. Ruminant livestock must have access to open pasture.

THE TRANSITION PROCESS

A period of three years is required for the transition from conventional to organic production, during which time products may be marketed as “transitional organic,” but not as certified organic. This time is calculated from the date of application of the last prohibited material or practice to the date of harvest of the first organic crop. Land where no prohibited materials have been used for three or more years can be put directly into certified organic production.

The centerpiece of your application for certification is your Organic System Plan. This might include an Organic Livestock Plan (for livestock producers) and an Organic Handling Plan (for on-farm or off-farm handling, processing or retailing).

Your Organic System Plan should include details about the crop rotation you intend to follow (including cover crops). It should include a conservation plan detailing how you plan to improve your soil and manage runoff and erosion, and it must address how you'll control pests, diseases and weeds organically.

The audit trail involves meticulous recordkeeping and documentation to show that you are following your plan, monitoring your results, and not using any prohibited substances. Once these systems are in place, an inspector employed by your certifier will schedule a farm visit, which usually lasts about three to five hours. Following the visit, the inspector submits a report to the certifying agency, where a committee will review your application.

Once you are certified, you are still required to maintain a system plan, keep good records, and have your soil tested regularly. Water used for irrigation, washing, or livestock is also subject to

testing for contaminants. You can expect a visit from an inspector at least once a year.

A WORD ABOUT CERTIFYING AGENCIES

Many of the agencies that offered certification prior to implementation of the National Organic Program Standards—such as California Certified Organic Farmers (CCOF) and Oregon Tilth—are now sanctioned by the National Organic Program to continue in this role. Since 2002, all certifiers—there are currently 101 of them—have been governed by uniform standards adopted by the USDA.

Regions of operation and areas of expertise vary widely among certifiers, as do fee schedules—some charge by farm size, others by the number of farm visits, and others as a percentage of gross sales—so it's prudent to do your homework before choosing a certifier.

The 2002 Farm Bill also provided up to \$500 per farm to help offset certification fees. Check with your certifier and state organic farming groups to learn what federal or state assistance for certification may be available to you.



Photo Credit: USDA, Oregon Tilth, CCOF

Logos of various organic certifications

RESOURCES TO HELP YOU PLAN

Farmers today can benefit from a wide array of resources on transitioning to organic. Here are a few:

- Your neighbors. Organic farmers in your area are often your best resource. Find a sustainable agriculture organization in your region, make a few phone calls, and choose the next on-farm field day that fits your needs. Most certification agencies publish farmer and business directories that you can use to contact individuals directly.
- The Natural Resources Conservation Service can assist you in creating a conservation plan and tell you what practices may be eligible for cost-share.
- The Cooperative Extension service of your state's land-grant university system can provide a wealth of local information.
- Non-governmental agricultural organizations such as Rodale Institute host conferences, conduct research, and publish educational materials.
- Federally funded sustainable agricultural information centers, including the [National Sustainable Agriculture Information Service](#) (ATTRA) and the USDA's [Sustainable Agriculture Research and Education](#) (SARE) program publish free bulletins on a wide range of topics from soil health to direct marketing. SARE also awards small grants to farmers undertaking on-farm research projects.

FARMER-TO-FARMER

"Building a sense of community and cooperation is essential for organic success. Without the examples of other organic farmers who were successful, we might have concluded that organic farming would not work."

—Mary-Howell and Klaas Martens
Penn Yan, NY

SOME KEY PLAYERS

Here are some of the agencies and organizations involved in the organic certification process:

- The [National Organic Standards Board](#) (NOSB) is a 15-member body including farmers, processors, retailers, scientists, public interest advocates, environmentalists, and certifying agents. The NOSB advises the U.S. Secretary of Agriculture concerning implementation of the National Organic Program.
- The [National Organic Program](#) (NOP) is the administering body within the USDA that carries out the mandates of the Organic Foods Production Act of 1990. The NOP is housed within the USDA's Agricultural Marketing Service.
- The [Organic Materials Review Institute](#) (OMRI) is an independent, nonprofit organization that reviews substances for use in organic production and maintains a database (searchable by brand name or generic material) indicating whether a given substance is "allowed" without restrictions, "restricted" (permitted within specific limits) or "prohibited" (not allowed under any circumstances). All organic producers work from the National List of Allowed Synthetic and Prohibited Non-Synthetic Substances (better known as the [National List](#)), which is updated and maintained by NOP officials, with input from the NOSB.

YOUR CHOICE

BUILDING COMMUNITY

Certification is a choice

Growers who sell most of their crops directly to the end consumer—via a farm stand, farmers market, or Community Supported Agriculture (CSA)—may consider organic certification unnecessary because their customers know them and trust their farming practices. Keep in mind, however, that if you intend to sell any of your product through a third party—such as a grocery



Photo Credit: Rodale Institute

Some farmers who sell direct to consumers through farmers markets, on-farm stands or the CSA model choose not to get certified.

retailer—certification is imperative to ensure customer confidence (and a grocer can't label your product as "organic" unless it is certified). One of the strongest arguments for uniform federal organic standards was that consumers would be able to rest assured that "organic" meant something specific. A federal standard also makes organic interstate commerce a lot less of a headache.

Building Community Through Organic Farming

Besides health and nutrition concerns, a growing number of Americans are placing both the environment and their community at the top of their priority list these days. We now know that organic farming is better for the water we drink and bathe in, the air we breathe, and all the plants and animals of the earth, including ourselves. [It has been proven](#) that the nutritional content of organically raised food can be higher than that of foods raised non-organically.

Organic is better for our communities, too. Downtown farmer's markets "build commerce, culture, and community," according to an article by the [Michigan Land Use Institute](#). Many of these markets are "producer only"—you can sell there only if you grew it or made it—and an increasing

percentage of the vendors are organic. Here, community members meet face to face with each other and with the farmers who grow their food. Pickup at a local farm or roadside farm stand also offers this personal touch. More grocery stores are offering local and organic produce and will sometimes put the name of the farm or a picture of the farmer next to the product as a marketing tactic. Why? Because retailers know that customers want food “with a story” and are willing to pay a premium for it.

PRACTICAL FARMER WISDOM

Wherever you farm in the United States, you’re probably within driving distance of a sustainable farming conference. Featuring workshops, farm tours, keynote speakers, and informal networking opportunities, these events can be invaluable for gaining practical advice and inspiration. These farmer-centered gatherings are also the best places to become acquainted with the networks of people exploring organic production and marketing in your area and your type of enterprise.

Organic agriculture is continually evolving. This course will give you a basic understanding of organic agriculture and the tools you need to begin farming successfully. Our approach is to pass on practical farmer wisdom that will help you farm well. We’re going to give you what you need to know to begin building a self-sustaining, self-reliant, and self-correcting organic system. Each farm is unique. It’s up to you—through careful observation, application, and fine-tuning—to create the best model for your particular situation.

LET’S GET STARTED

The next chapter we visit will be Soils, where you’ll learn what “healthy soil” really is and how to achieve this critical goal that is (literally) at the foundation of everything on your farm. We’ll follow with crop management, organic livestock management, marketing, and finally, the nuts and bolts of certification.

Even if you feel that a particular section of the course—for instance, livestock management—doesn’t directly apply to your operation, we encourage you to stick with it anyway. It will

help you to appreciate your organic neighbor’s operation and how his or her needs and expectations might relate to your own. Plus, as you diversify your own operation, you might just find that the information does apply to you after all.

FARMER-TO-FARMER

“America is hungry for food that comes from the family farm just down the road, not from the other side of the country or the world.”

—George DeVault
Emmaus, PA