2020 NOFA Summer Conference Planning Begins

Jason Valcourt, NOFA Summer Conference Coordinator

As we head into Winter Conference season and the farm planning matrix we all enjoy so deeply during this turn in the calendar I am bolstered by the lingering Summer Conference impressions from this summer. I have visions of draft horses and can hear the music of wonderful local bands. The aromas from the local food trucks filled the campus and I can feel the inspired energy that was so abundant throughout the weekend. As we move toward our 46th annual event I hope we carry the amazing vibe that was this year’s NOFA Summer Conference. We always appreciate your feedback both in the moment and in the evaluations.

Next summer we are will again meet at Hampshire College, this time on August 7-9. The conference is shaping up to further elevate the awareness of carbon farming solutions. Sounds familiar, I know. Yet, outside the circles of soil lovers regenerative agriculture is not on the map for many. Particularly, to be on equal footing in climate discussions with renewable energy solutions we need even greater awareness in the minds of non-soil lovers and we need more champions of soil carbon solutions. Thankfully, as you may have noticed this fall, even political candidates in recent debates have dropped phrases such as “regenerative agriculture”. What? Could it be happening? Could the world be awakening to the potentials that regenerative agriculture hold for addressing climate destabilization solutions? It seems the time has never been more right for us to amplify the message we all work so hard toward manifesting.

Also in 2020, we are committed to hosting another Teen Summit. In case you missed it, the 2019 gathering on Sunday was a great success that brought over 80 youth together to explore soil health, plant health and to strengthen the coalition of the Northeast youth agriculture movement. Initial planning has begun on a follow up to this year’s conference that will include a keynote speaker and the opportunity to enjoy the general conference workshops. Where is this movement going if the youth are not growing? Not only do we need to give them opportunities to improve growing techniques, but we need their fresh minds and innovations to take this movement forward. We can learn a lot from their minds and their use of technology and we hope the Teen Summit brings to life many agricultural projects and solutions to our food system.

Looking ahead to 2020 I can’t help but take this timely opportunity to put a strong plug in for your chapter’s local Winter Conference. As a seven state coalition that coalesces at the NOFA Summer Conference the chapters are the legs the Summer Conference stands on. Beginning in Massachusetts on January 11th, the Winter Conference season will be upon us. Here are the dates of the seven NOFA chapter conferences. Mark your calendar!

NOFA/Mass: Saturday, January 11, 2020 Worcester State University, Worcester, MA
NOFA- NY: January 17-19, 2020 The Oncenter, Syracuse, NY
NOFA-NJ: Saturday, February 1, 2020 Rutgers University, New Brunswick, NJ
NOFA-NH: Saturday, February 8, 2020 Kearsarge Regional High School, N. Sutton, NH
NOFA- VT: February 15-17 University of Vermont, Burlington, VT
CT NOFA: Saturday, March 7, 2020 Wesleyan University, Middletown, CT
NOFA/ RI: Sunday, March 8, 2020 Audubon Society, Bristol, RI

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Tim LaSalle to Keynote the NOFA Summer Conference Saturday, August 8, 2020

by Julie Rawson

Tim LaSalle is the Co-Founder of The Center for Regenerative Agriculture, Director of Outreach & Development, and Adjunct Professor at the College of Agriculture at California State University, Chico, California. He will be keynoting our 2020 summer conference and also participating in the workshop program.

Tim grew up on a conventional peach, walnut and hay farm in the Central Valley of California. He got his degrees, both undergrad and advanced, in conventional, high input, scientifically based agriculture. He became a professor of dairy science at Cal Poly State University teaching thousands of students this kind of agriculture for 12 years. Traveling to China, India, Africa and South America he grew to realize that the ecological degradation all over the world was significantly affected by how we were farming. That coupled with increased population had us on a destructive trajectory for overshooting anything that could resemble sustainable.

(continued on page A-2)
A very slow movement of his own critical think
ning brought him to join the Allan Savory Center of
Holistic Management as Executive Director work-
ing to stop the spread of deserts globally. From
there he became the CEO of the Rodale Institute
for some time but he remained concerned about find-
ing better ways to stop the need for tillage with its
inherent soil destruction properties. Tim then moved
to Africa working with Howard Buffett, on food se-
curity with a focus on conservation and agriculture
and soil health. The Warren G Buffett Foundation
was investing in issues of hunger and food security.
Tim developed a research and demonstration farm
with no outside inputs creating no till rotational
systems. He and his wife worked with many refugees from Zimba
bwe and Mozambique - refugees who sadly didn’t have access to indigenous wisdom of their as-
tors. His wife spent time with the village helping
them to produce food for themselves.

With the continual loss and degradation of soil and the
impending threat of climate change, Tim and his wife found that soils that originally had not enough
nutrients like adequate phosphorous were found to
be adequate after one growing season.

Dr. David Johnson’s BEAM is a fungally domi-
nant aerobically developed compost. He is also now
an adjunct professor at Chico State but still lives
in New Mexico where he is managing several test
plots. He is a genius and he can see and look into
what is occurring with a fresh set of eyes. He was
trained as a microbiologist and is tracking what was
occurring.” Tim related that soil tests are not mean-
ingful once you start feeding the biology because
the biology makes existing minerals much more
available. Johnson found no correlation between N,
P, K numbers on soil tests and primary productiv-
ity, whereas biological life is directly correlated to
productivity.

What drives Tim LaSalle’s work and enthusiasm
these days is the desire to understand and go more
depth into why biology and to no low input sys-
tems are the most efficient and profitable and how
grossly we are underestimating the potential of
carbon capture as a solution to climate change.

To create social change according to Tim LaSalle,
“Language matters. Using the word organic narrows
the audience to 1% of the farmer audience. We don’t
decide organic because we have to include all farmers.
The organic word has to go away in this discussion.
My wife and I eat and grow organic, but we can’t
have that conversation in the general realm because
a lot of people will dismiss us. That does not really
matter, but all farmers understand profit and soil
health. We need every farmer to solve the crisis we
find ourselves in. Every farmer. And to help them
to a more regenerative orientation we can show
them how they can make more money and help their
families be more secure. This is how language mat-
ters.”

Regarding equipment for no till and low till systems
on vegetable farms, CSU Chico is working with UC
Davis and 5 organic farmers who are large scale.
These organic farmers are the ones interested in
strip and no till and the use of cover crops to help
build soil health. This project is experimenting with
equipment, cover crops, and altering practices. It is
a farmer directed study done in a collaborative and
open sharing methodology.

Tim and his wife are headed back to Africa this
month to share the knowledge on how these regen-
erative systems work for the small holder to large
scale grower. Part of the purpose is to explore ways with a continent-wide effort to incorporate the
regenerative biological framing into farmer training
as well as research centers. There is a lot of collab-
orative potential. Perhaps African soils are generally
as degraded as anywhere in the world. To build
these soils will greatly mitigate the tension between
growing populations and food shortages. He feels
the truth of the matter is that regeneration is the only
way to move forward.

Tim states, “Basically this work of regeneration of
soils and the added benefit of carbon capture is our
only possible future. Without regenerative agri-
culture, all of the indicators predict we don’t have
much of a future. To act and engage this critical
method of restoring healthy soil globally gets me up
every day.”

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Monsanto wins $7.7b lawsuit in Brazil

A Brazilian appeals court has decided in favor of Monsanto, the global agribusiness conglomerate, in a landmark class-action lawsuit filed by Brazilian farmers’ unions. The court’s nine justices unanimously ruled on Oct. 9 that farmers cannot save seeds for replanting if the seeds are harvested from Monsanto’s patented Roundup Ready soybeans, which are genetically engineered to withstand direct application of the company’s Roundup herbicide.

The Brazilian ruling aligns with similar decisions in the U.S. and Canada. Courts in all three countries determined that, as a product of genetic engineering, Roundup Ready soybeans are protected by domestic patent law. In a public statement, Monsanto—which was acquired by Bayer in 2018—said the decision will strengthen “agricultural innovation in Brazil.”

How strict patenting of seeds affects innovation, however, is a matter of debate. And the lawsuits challenging Monsanto’s aggressive pursuit of its patent rights raise a vexed legal issue: When intellectual property laws that protect companies conflict with the rights of farmers to plant their fields, who should win?

Founded as a chemical manufacturer in 1901, Monsanto has invested heavily in agricultural biotechnology to become the world’s largest seller of seeds. Its biotech seeds have proved attractive to farmers because they simplify farm management.

In the United States and Canada, Monsanto requires buyers of its genetically modified seeds to sign extensive licensing contracts that prevent them from saving seeds. North American farmers who violate those agreements have been sued for patent infringement and compelled to pay tens of thousands of dollars in damages.

In Brazil, Monsanto charges 2% royalties on the sale of its patented soybeans, a conventional industry practice. More unusually, the company charges an additional royalty—3% of farmers’ sales—when soybeans are grown from saved Roundup Ready seeds. Soybeans are Brazil’s biggest export. The royalties in dispute in the class action, which is likely to be appealed to the Brazilian Supreme Court, are estimated at US$7.7 billion.

The Brazilian appeals court’s Oct. 9 decision reverses a past ruling establishing the rights of small farmers in Brazil. In their original petition, farmers’ unions in 2009 asserted that Monsanto’s royalty collection system is arbitrary, illegal and abusive. They argued that it extends Monsanto’s intellectual property rights to their own production and violates their right to freely save seeds for replanting, as guaranteed under Brazil’s Plant Variety Protection Act. In April 2012, a civil court agreed with the farmers, affirming their rights to save seeds and sell their harvests as food or raw material without paying royalties.

Monsanto got this ruling overturned on appeal. The Brazilian farmers’ unions then appealed that decision, leading to the Oct. 9 ruling against them.

Judges in these cases confront a tricky legal issue. In theory, a genetically engineered DNA sequence like the one that confers herbicide resistance to Monsanto’s Roundup Ready soybeans can be protected under patent law. Yet the plant variety in which the genetic sequence is introduced may also be legally protected, as it is under Brazil’s Plant Variety Protection Act.

In practice, however, it is virtually impossible to separate genetically engineered DNA sequences from the rest of the physical plant. So the two laws—one recognizing the rights of farmers to save seeds for replanting in their fields, the other protecting Monsanto’s intellectual property—conflict with each other.

Faced with this conundrum, the Cana-
DO THE NEIGHBORS THINK YOU’RE WEIRD?
You’ll fit right in with our community of farmers, growers and ranchers.
Bayer Reports Surge in Roundup Plaintiffs

Bayer AG said the number of plaintiffs claiming its Roundup herbicides caused cancer more than doubled to 42,700 in the past three months, adding pressure on the company to resolve the legal battle that has raised questions about its future.

Bayer had warned about a sharp rise in plaintiffs earlier in October, but played down the significance, saying the numbers said nothing about the size of any settlement payment or the merits of the claims. It blamed the rise on an advertising push by lawyers seeking to recruit more plaintiffs before the claims. It blamed the rise on an advertising push by lawyers seeking to recruit more plaintiffs before the claims.

Besides engaging “constructively” in settlement talks, Bayer has continued to defend itself in appeals and would do so in any new trial, Mr. Baumann told reporters Wednesday. Bayer has argued that Roundup and its active ingredient glyphosate are safe and that this view is backed by hundreds of regulatory decisions around the world.

While some investors worry that the growing number of plaintiffs could push up the final bill for Bayer, they also hold out the hope that a settlement will be reached—a prospect that has helped the stock recover slightly since the start of this year. Several trials scheduled to take place this summer and fall have been delayed, suggesting that settlement talks are moving forward.

“We continue to think that a settlement is the most likely and beneficial outcome for investors,” Bernstein Research said in a client note. Baad-er Bank’s Markus Mayer said a settlement below $20 billion would be a positive share-price trigger.

Settling Bayer’s legal liabilities is complicated, especially as Roundup continues to be sold in stores, making it hard for the company to achieve an agreement that would prevent future plaintiffs from coming forward. Mr. Baumann repeated Wednesday that the company would only agree to a “financially reasonable” settlement. He slightly changed tone on his view that any settlement should reach “finality,” saying it must come as close as possible to that goal.

Mr. Baumann declined to comment on the current state of the talks. According to a person familiar with the mediation discussions, Bayer and plaintiff lawyers are still far apart on the amount and scope of a potential settlement.

source: Wall Street Journal, Oct. 31, 2019

Insect decline more extensive than suspected

Compared to a decade ago, today the number of insect species in many areas has decreased by about one third. This is the result of a survey of an international research team led by scientists from the Technical University of Munich (TUM). The loss of species mainly affects grasslands in the vicinity of intensively farmed land—but also applies to forests and protected areas.

Various studies have already demonstrated that there are far fewer creatures chirping, buzzing, creeping and fluttering in German meadows today than 25 years ago. “Previous studies, however, either focused exclusively on biomass, i.e. the total weight of all insects, or on individual species or species groups. The fact that a large part of all insect groups is actually affected has not been clear so far,” says Dr. Sebastian Seibold, a scientist with the Terrestrial Ecology Research Group at TUM.

In a large-scale biodiversity study, an international research team headed by scientists at TUM surveyed a large number of insect groups in Brandenburg, Thuringia and Baden-Württemberg between 2008 and 2017. Now the team has published its analysis in the scientific journal “Nature”.

The researchers collected more than one million insects at 300 sites. They were able to prove that many of the nearly 2700 investigated species are in decline. In recent years, certain rare species could no longer be found in some of the regions studied. Both in forested areas and grasslands, the scientists counted about one third fewer insect species after 10 years.

“Before our survey it was unclear whether and to what extent forests were affected by the insect decline as well,” says Seibold. Since 2008 they measured a decrease of approximately 40 percent in insect biomass in the forests they studied.

In grasslands the results were even more alarming: at the end of the study period, the insect biomass decreased to only one third of its former level. “A decline on that scale over a period of just 10 years came as a complete surprise to us—it is frightening, but fits the picture presented in a growing number of studies,” says Wolfgang Weisser, professor of Terrestrial Ecology at TUM and a co-initiator of the cooperative project.


Meta Analysis Finds “Compelling” Link Between Glyphosate Exposure and Non-Hodgkin Lymphoma

Glyphosate is the most widely used broad-spectrum systemic herbicide in the world. Recent evaluations of the carcinogenic potential of glyphosate-based herbicides (GBHs) by various regional, national, and international agencies have engendered controversy. A study investigated whether there was an association between high cumulative exposures to GBHs and increased risk of non-Hodgkin lymphoma (NHL) in humans. It conducted a new meta-analysis that includes the most recent update of the Agricultural Health Study (AHS) cohort published in 2018 along with five case-control studies. Using the highest exposure groups when available in each study, it reports the overall meta-relative risk (meta-RR) of NHL in GBH-exposed individuals was increased by 41%. For comparison, the authors also performed a secondary meta-analysis using high-exposure groups with the earlier AHS (2005), and calculated a meta-RR for NHL of 1.45,
which was higher than the meta-RRs reported previously. Multiple sensitivity tests conducted to assess the validity of the findings did not reveal meaningful differences from the primary estimated meta-RR. To contextualize findings of an increased NHL risk in individuals with high GBH exposure, they reviewed publicly available animal and mechanistic studies, the current meta-analysis of human epidemiological studies suggests a compelling link between exposures to GBHs and increased risk for NHL. 

source: Mutation Research, July – Sept. 2019, pages 186-206

World’s Most Common Neonicotinoid Pesticide Causes Birth Defects in Deer

A groundbreaking study conducted by scientists in South Dakota has found that the world’s most widely used family of pesticides — neonicotinoids — is likely causing serious birth defects in whitetailed deer, deepening concerns over the chemical’s potential to harm large mammals, including humans.

The study, with results published in March, showed that white-tailed deer with high levels of neonicotinoid pesticide in their spleens developed defects such as smaller reproductive organs, pronounced overbites and declined thyroid function.

Fawns with elevated levels of the pesticide in their livers, he said. Another reason the spleen discovery is significant is that the organ is an important piece of the immune system. When spleen function is impaired, Jenks said, young deer are likely to be more susceptible to disease.

source: South Dakota News Watch, Oct. 17, 2019

Jeff Moyer Named Rodale Institute CEO

The Board of Directors of Rodale Institute has announced the appointment of Jeff Moyer as Chief Executive Officer. Moyer has served the Institute for 43 years in positions such as Farm Director and Executive Director.

“The time is right to recognize the evolution of Jeff’s role and his excellent work at the Institute,” said Maya Rodale, Rodale Institute Board of Directors Co-Chair. “Rodale Institute continues to grow and make a significant positive difference in the world, and Jeff’s capable leadership is a crucial part of that.”

“It has been a great honor to witness the growth of the organic movement as a staff and board member of Rodale Institute,” said Moyer. “I hope, in this new capacity as Chief Executive Officer, to continue expanding the reach of regenerative organic practices that improve the health of farmers, consumers, and the planet.”

Moyer’s expertise includes organic crop production systems with a focus on weed management, cover crops, crop rotations, equipment modification and use, and facilities design. Moyer’s hands-on experience in organic agriculture brings a farmer’s perspective to the research, farmer training, and consumer education conducted by Rodale Institute. He started at Rodale Institute in 1976 in the position of Farm Laborer. He became Farm Manager in 1982 and later served as Farm Director, supervising research and operations of the 333-acre experimental farm for 15 years. Moyer was named Executive Director of the Institute in 2015.

Moyer is perhaps most well known for conceptualizing and popularizing the roller crimper, a technology that simplifies the execution of organic no-till agriculture. Currently in use across the nation and the world, the roller crimper has revolutionized the management of organic no-till systems and continues to evolve the operations of organic farmers today. Moyer also wrote and published a resource on the subject, Organic No-Till Farming: Advancing No-Till Agriculture, in 2011.

In conjunction with his position at Rodale Institute, Moyer previously served as Chair of the National Organic Standards Board, a founding Board Member of Pennsylvania Certified Organic, Chairman of the Board of The Seed Farm, part of the Green America Non-GMO Working Group, a Project Member of The Soil Renaissance Project, and a Board Member of both PA Farm Link and Soil Health Institute.

As CEO, Moyer will continue to supervise the research, training, and education mission of Rodale Institute, as well as act as liaison to the Board of Directors and the Rodale Institute campuses across the country.

source: Rodale Institute Press Release, Oct. 17, 2019

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The Natural Farmer    Winter, 2019-20
Book Reviews

Whitewash: The Story of a Weed Killer, Cancer, and the Corruption of Science
by Carey Gillam
published by Island Press
2017, $30.00, hardbound, 305 pages

review by Julie Rawson

NOFA/Mass has launched a “Campaign for Pesticide” Reduction (CPR) in collaboration with Toxics Action Center, a long term environmental organization in Boston. Interestingly, we last collaborated on a joint project with them back in 1997 when we were at odds with the Massachusetts Water Resources Authority because they were labeling their sludge product, “Baystate Organic”. We won that one and they took the word “organic” off their product. This campaign some 21 years later may be a little harder to win. We are hoping to pass as many municipal bans on the use of glyphosate and neonicotinoids as we can in the state of Massachusetts. On the positive side, we are assisting municipalities in establishing organic action plans for town owned and managed properties.

Whitewash is a well-researched book by a woman who has a 25 year career as a journalist and researcher, most of those years with Reuters. She came to this issue as a relative neophyte with no farming background. She admits to having used Roundup on her property in an earlier life. Sometimes I think the lack of a personal background in farming was a deficit for her, particularly in the end times I think the lack of a personal background in farming was a deficit for her, particularly in the end of the book when she discussed alternatives, where I think she was weak. But generally, I think the power of this book lies in the fact that Carey Gillam came to the topic of glyphosate with fresh eyes and a researcher’s rigor that left me feeling very confident about the veracity of the words that she put on paper.

Glyphosate and genetically modified crops have a very entwined story. Though glyphosate has been in use since 1974, according to Gillam Monsanto introduced GMO crops in part because the patent was scheduled to run out in 2000 and by linking the use of GMO crops with their product Roundup (which contains glyphosate and polyethoxylated tal- low amine POEA- as a spreader sticker) to continue to enhance sales of this financially lucrative product. US farmers used 40 million pounds of it in 1995 compared to 276 million pounds in 2014. And it is now registered for use in 130 countries, considered the most heavily used agricultural chemical in history.

Glyphosate seems to have been given a pass by the US government regulatory agencies. Though the US Food and Drug Administration (FDA) and the US Department of Food and Agriculture (USDA) annually test thousands of food products for hundreds of different types of pesticide residues, both have routinely refused to test for glyphosate. At this same time, the US Environmental Protection Agency (EPA) which regulates pesticides, has been allowing higher and higher allowable levels of glyphosate in food. In 2013 the EPA raised the tolerance to well beyond levels acceptable in other countries.

Chapter 1 discusses the personal case of a farmer in CA who died of non-Hodgkin lymphoma (NHL) after chronic exposure to glyphosate for many years. Jack McCall refused to use other chemical pesticides on his farm due to concerns over toxicity, but considered glyphosate safe. NHL has spiked over the past several decades making it the 10th most common cancer worldwide. There are now around 8,000 lawsuits from plaintiffs on this issue and a landmark ruling was made in late 2018 (after this book was published) awarding damages to DeWayne Johnson, who suffers from NHL. An interesting piece of history that Gillam relates showed that in 1985 the EPA listed glyphosate as a probable human carcinogen. Six years later after “extensive input from Monsanto” the agency changed its tune to say that it found “evidence of non-carcinogenicity for humans.”

One of the Monsanto plaintiffs wraps up the thesis of this book quite well with the following statement. Aaron Johnson, a farmworker from Hawaii stated, “I think they’ve known since the 70’s this stuff can cause cancer. And now on the scale that it has been distributed and used… this molecule is everywhere in our food, our water. They say it can be found in every person. As time goes on we are going to find out that it is a lot bigger than people can ever imagine right now. All for profit—all for the sake of making billions a year off this one product. I don’t understand how they’ve been able to get away with it.”

Another important message from Chapter 1 relates the history of DDT, Agent Orange, and PCB’s and their eventual bans, in all cases only happening after continued consumer outrage and warning by scientists and researchers.

In Chapter 2 the author shares the history of glyphosate with us. The Swiss chemist Henri Martin discovered N-(phosphonomethyl) glycine, or glyphosate in 1950. But because he was unable to come...
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up with any appropriate pharmaceutical use for the molecule it was shelved for almost 2 decades. Meanwhile the company he worked for, Cilag, was acquired by Johnson and Johnson in 1959. Later it was sold to Aldrich Chemical. Stauffer Chemical Company found use for it as a chemical chelator that could bind calcium, manganese, copper and zinc. (Much later Don Huber would talk about how this chelating action of glyphosate has been so destructive of our food supply because of the robbing of these minerals from our food crops where glyphosate is used in conjunction with growing food.)

John Franz, a Monsanto employee recognized the value of glyphosate as an herbicide in 1967 and in 1974 Monsanto put Roundup on the market after it received a patent from the US Patent Office. The other notable active ingredient in Roundup besides glyphosate is ethoxylated tallowamine surfactant. Some fear it is even more dangerous than glyphosate. Interestingly, Franz was subsequently showered with awards, including the National Medal of Technology and Innovation, bestowed upon him by President Reagan in 1987. Quoting Franz, “…an environmentally friendly product that is beneficial to mankind.” Later Franz was named to the National Inventors Hall of Fame. The rest of this chapter illuminates a litany of fraud and suppression of evidence around glyphosate’s carcinogenicity, involving Monsanto scientists and the EPA. Chapter 3 details the roll out of the Roundup Ready crops starting in 1996 when Roundup Ready Soybeans came on the market. By 2000 Monsanto was also selling Roundup Ready corn, cotton, and canola. Clarifying to their shareholders that a major part of the development impetus of GMO crops was to boost Roundup sales, Monsanto bragged that it saw an 18% rise in glyphosate sales from 1999 to 2000. Over the next few years the Roundup Ready crops grew to include alfalfa and sugar beets. I remember during this time period arguing with my “environmentally liberal” friends about the use of GMO’s and glyphosate. The argument put forth by Monsanto and all of the chemical companies, really since the green revolution, was that this type of technology was essential for us to feed the world. What most amazes me about this whole process of Monsanto and other chemical companies getting the use of their chemicals approved, almost seemingly carte blanche, has been their extremely clever marketing capability – to not only sell the government agencies, whom I have never had faith in, but with APHIS’s unlawful deregulation decision, with a group of farmers who had staked their livelihoods on APHIS’s decision, and with a federal statute that prizes informed decision-making on matters that seriously affect the environment, the [District] court did the best it could. In my view, the District Court was well within its discretion to order the remedy that the Supreme Court reversed. In 1991 roughly 18.7 million pounds of glyphosate was used on crops in the US. By 2000 it was 100 million pounds and by 2013 286 million pounds. Interestingly the USDA quit reporting pesticide use on US farms in 2008. This work is now being done by academic researches and the Department of the Interior.

Next Monsanto promoted the use of glyphosate as a desiccant at the end stages of a crop’s growth. Spraying the herbicide on the crop to kill it and all the other local vegetation makes for a simpler harvest. Now crops of wheat, alfalfa, oranges, avocados, grapes, grapefruit, potatoes, almonds, pecans, walnuts, dried beans, and lemons are often sprayed with the chemical.

Chapter 4 is titled “Weed Killer for Breakfast.” Despite government refusal to test for glyphosate residues in food, private laboratories have taken over this responsibility. Testing shows residues in bagels, honey, oatmeal, flour, eggs, cookies, cereal, cereal bars, soy sauce, beer, coffee, and infant formula. Additionally it is now found in human urine. The Detox Project, a coalition of scientists and activists, states, “Glyphosate is present at all levels of the food chain; in water, plants, animals, and even in humans. Every single study that has measured human contamination has found it…”

Late in the chapter there are details of glyphosate testing that was run by FDA chemist Narong Chankasem over concern about glyphosate residue in oats. In 2016 he found residues in many oat products but FDA did not publish the findings. Later he did work on honey where he found that all honey examined including organic honey contained residues, some of it 5 times more than the legally allowed limit in the European Union. In one intragovernment email exchange in 2015 Chankasem stated, “I believe we will see a lot of violation for glyphosate.” Within a few months FDA halted his research.

Chapter 5 goes into the research that has shown, with many studies on experimental animals, a range of health problems including tumors, blood and pancreatic problems, and liver and kidney troubles. Brazilian studies found fatal malformation and cell death in rat testes. British studies in 2017 linked glyphosate to fatty liver disease. Also in 2017 Brazilian scientists found that even soy milk laced with glyphosate suffered damaged hormonal changes. In Argentina in 2010 research with frog and chicken embryos showed spinal defects. Andres Carrasco conducted this research in response to reports of increased birth and spinal defects in farming communities in Argentina after glyphosate use was approved in Argentina for spraying on GMO crops. In Sri Lanka scientific studies have suggested that a deadly chronic kidney disease that has affected thousands of people in farming areas is tied in part to exposure to pesticides, including glyphosate. Both Sri Lanka and El Salvador at one time declared a ban on the use of glyphosate because of an epidemic of a new type of chronic kidney disease. In 2013 four toxicology experts in Thailand found that glyphosate induced human breast cancer cell growth. And a 2009 French study found that glyphosate triggered endocrine disruption in human cells.

The big news of this chapter is the carefully chronicled account of Health Alliance for a Dying Person’s International Agency for Research on Cancer stepped into the debate in 2015 when they found glyphosate to be a probable human carcinogen. I leave you to read the detailed account on how they came up with this decision and how Monsanto worked to discredit them.

The rest of the book really engaged me so much that I pulled a couple of all-nighters to finish it. Gillam goes into great detail chronicling efforts in Hawaii by residents to limit the use of pesticides near...
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solar schools and efforts by local communities in Argen-
tina to stop aerial spraying in the region. This is the
real heart breaking part of the book — where many
examples of death and child deformity and still-birth
come to the fore. Gillam does an excellent job of
bringing us into the homes of the victims where we
see the powerlessness of real people to keep from
being poisoned in the name of corporate greed,
despite many well-organized campaigns to stop the
chemical’s use.

Said one observer, “We see organic or agroecological
farmers downstream from the spraying and ubiqui-
tous use of this chemical who watch their crops die
due to drift and pollution of their water resources.” It
reminded me how lucky I am to not live in an “agri-
cultural region” of the state or country. I have vivid
memories of aerial spraying in my native state of Ill-
inois when it took my entire life with an impaired thyroid
grown from rising in the Heartland with its
ubiquitous use of chemicals, even in the 1960’s.

There is a chapter on the super weeds and the re-
introduction of Dicamba and 2, 4-D to provide yet
one more poison to try to outwit Mother Nature,
while intensifying the environmental degradation
and human health crisis in this country.

Many thanks to Carey Gillam for dedicating a
couple of years of her life to tell this story in a well-
researched, heavily documented fashion so that we
can have a guidebook as we as activists attempt to
change the minds of our neighbors, our local busi-
nesses, our municipalities and eventually the state
and local governments. It is appalling to realize the
monstrous power that Monsanto and other chemical
companies have on seemingly all levels of govern-
ment when it comes to the use of these toxins. This
book is a must read for anyone who wants to know
the back story on glyphosate and its negative impact
on our entire globe. Terry Gillam will keynote at the

Organic Hobby Farming: A Practical Guide to
Earth-friendly Farming in any Space
by Andy Tomolonis
published by I5 Publishing, 2014, 386 pages, $24.95

review by Richard Robinson
Hobbies are respectable enterprises, and everyone
should have at least one. But nonetheless, the phrase
“hobby farm” grates on me like fingernails on a
chalkboard. It’s a phrase I have only ever heard from
those who aren’t yet farming a big-picture idea of
farming and are trying to get that big picture, it
could do worse than to read this book cover to cover.

The phrase “hobby farm” grates on me like fingernails on a
chalkboard. It’s a phrase I have only ever heard from
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As you would hope in a book of organic farming, it
has a good chapter on understanding both the min-
eral and biologic aspects of soil, and in its 40 pages,
you can get a pretty good introduction to these
critical topics. Mr. Tomolonis presents a month-
by-month overview of farming activities from seed
starting to insect control to harvest, which can give
the novice the feel for the rhythms of the year. There
are many (many!) sidebars and boxes along the way
to highlight topics such as basket weaving tomatoes,
state bedding, and other practical information.

Growing information as specific crops may be
useful to the novice gardener, with basic informa-
tion (e.g., “one cauliflower plant produces just one
harvestable head”) and growing tips (“Use floating
row covers over young carrots, especially when
sown in the spring, when sawflies are most active”),
but my guess is that this section may be less useful
to even intermediate gardeners, who will have their
own stockpile of experience with most common
crops, and will have learned to find more expert in-
formation elsewhere. There is also a survey chapter
on fruit crops, 20 pages on chickens, and a brief
introduction to bees, rabbits and goats. Aspiring
farmers who want to think hard about the business
side of the operation will find a quick introduction
to marketing, but will need much more information
from elsewhere to feel confident about their busi-
ness plan.

I was surprised at a few things I read, and a few I
didn’t. I would not recommend heirloom crops to
coming beginners, who will have all the challenges
they can handle just getting their systems in place
without trying to succeed with the slower growth
and greater disease susceptibility of older varieties.

I don’t know anyone in the Northeast who plants a
late-season crop of snap peas; in my experience the
seed rots in the warm soil of August, and the shoots
grow too slowly in the dying light of October (per-
haps others have more success, and I’d love to be
wrong). There is no mention of downy mildew on
basil, which will take most of your crop after July.
But these are relatively minor quibbles in a section
that is otherwise solid, if necessarily limited.

The biggest surprise was the almost complete ab-
sence of discussion of season extension techniques.
Row cover is discussed primarily as an insect con-
trol strategy, and, remarkably, hoop houses are not
discussed at all, despite having become a centrally
important tool for market farmers to increase their
profits—for many farmers, including me, they have
made the difference between succeeding and not.
Yes, there are other books that present the principle
and practice in depth, but the absence of even a brief
introduction here may leave the reader who is trying
to see how the whole farm puzzle fits together miss-
ning a very large piece.

So, should you buy this book? If you are a serious
gardener looking to make some money on your
(ahem) hobby, I don’t think this book is likely to
give you what you likely need most, namely prac-
tical advice on the business side of farming.

If you are a homesteader hoping to expand your
knowledge of growing crops and whole-farm
systems, this might be useful as exposure to crops
and techniques you haven’t tried yet. If you are still
shaping your farm in your dreams, I’d recommend
it, to get an overview of the many, many activities
and decisions and considerations that go into farm-
ning at any scale.

In a world in which there is a firehouse of informa-
tion at the touch of button, but only a trickle of
wisdom, it is a good thing to have this kind of
survey—broad, relatively complete, and reasonably
authoritative—all together in one book. I com-
mend the author for undertaking it, and, despite my
reservations, I hope it finds its audience and has its
intended effect, to increase the number of people
who practice organic farming.
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Discoveries in the Garden
by James Nardi
published by University of Chicago Press
288 pages, 2018, $25.00 paperback

review by Richard Robinson

Gardeners are experimentalists—we try new varieties, push the limits of weather, till or don’t. We observe, try something new, and observe again. Any gardener who has been at this a while accumulates a pretty large store of knowledge about the what, when and where, but less of the why. We learn that peas need a tight trellis to climb, while beans will gladly climb a straight pole. But why the difference? We know that topping a Brussels sprout plant will promote heavier sprouts, but why?

James Nardi, a research scientist at the University of Illinois, has written a book to help curious gardeners ask and answer some of their own “why” questions about phenomena they observe in the garden. The book includes large amounts of plant anatomy and physiology. There are plant morphology demonstrations and experiments, line drawings that explain how to set up the experiments, and micrographs to show what’s going on at the cellular level.

There are chapters on seeds, plant organs and growth habits, development, photosynthesis, movements, ecology, and more. Each chapter includes a set of directed observations and suggested hypotheses that are explored through experiment, along with a fairly hefty bit of explanation that would not be out of place in a college course.

Indeed, if you took a botany or plant physiology course in college, much of this is likely to look familiar. Corn seeds glued to filter paper demonstrates the geotropism of roots; a plant in an enclosed jar replenishes oxygen, allowing a candle to continue burning. This is not a criticism—these demonstrations are classics because they provide lessons about plant behavior that are both accessible and powerful. However, that familiar content has not been adapted for best use by the home gardener. Instead, the book seems to be drawn pretty directly from a college lab course, without considering how it might be modified to fit the curious gardener outside the lab. The book describes experimental set-ups using “a 100 millimeter petri dish” and “filter paper,” without any recommendations for alternative materials more easily found at home. An experiment on the effect of light on germination calls for tobacco seeds, of all things. Similarly esoteric materials are specified in other experiments, with no suggestions for sources or substitutes.

This is doubly frustrating since such replacements exist, and such a list might have easily been generated in a couple of hours. The lack of such a list I think underlies a more general criticism—despite how it is positioned, this book has not been written with the home gardener specifically in mind.

Nonetheless, if your plant phys course is only a dim memory and you are looking for a refresher, or you are a neophyte to the world of academic botany altogether and want to get up to speed, this book might provide a painless and entertaining guide to a pretty serious chunk of the curriculum. The writing is lucid and logical, and the experiments, if you can find the right materials, are well described and would be fun to carry out.

Community-Scale Composting Systems: A Comprehensive Practical Guide for Closing the Food System Loop and Solving Our Waste Crisis
by James McSweeney
published by Chelsea Green
$59.95, paperback, 428 pages

review by Bob Banning

Almost fifty years after the first Earth Day, enormous amounts of food scraps are still wasted instead of being returned to the soil, where they belong. James McSweeney believes that such expertise is urgently needed because in the last five to ten years he has witnessed an acceleration in the rate at which new community composting enterprises are being started—to the point where we have a community composting “movement.” The more new composting enterprises that are started, the more opportunities there are for people to make mistakes—some of them system-wrecking—that could have been avoided if the operators had the necessary knowledge, knowledge that’s available if you know where to look.

McSweeney wants to get the word out about known best practices so that more and more communities will not just try, but succeed at composting.

Although I am only an amateur composter and thus cannot evaluate the book on the basis of experience, I have read quite a bit about composting through the years, even subscribing to BiotCycle for a year. On the basis of that amateur perspective, to me it looks like McSweeney put together a very thorough guide.

Chapter 1 outlines composting models. If members of a community want to compost, they find a way, and McSweeney rejoices in the many creative ways that people have found to work together and make composting happen: composter networks, on-farm composting, commercial composting, schools and other institutions, community gardens and farms, worker cooperatives, demonstration and training sites, collection services, drop-off programs, and home composting initiatives.

Chapter 2 describes leading methods and technologies, enumerating advantages and disadvantages of each. Chapter 3 explains the composting process, including what composting requires in terms of food (for the microbes), air, water, and warmth. The author emphasizes that if you want to produce a salable product, your compost must be “thermophilic”—hot. Specifically, it should meet the standards of the National Organic Standards Board, maintaining a minimum temperature of 131°F/55°C for at least three days.

Chapter 4 tells you how to choose feedstocks and combine them into a recipe that works. The author discusses carbon-to-nitrogen ratios, moisture content, bulk density, porosity, particle size, and pH. He suggests sources for various feedstocks. He warns of contamination and advises about how to avoid it. In chapter 5 the book lays out steps for deciding how much processing capacity you want, understanding what characteristics you’ll need in a site in order to reach that capacity, and then determining what is the potential processing capacity of a given site that you’re considering.

Chapter 6 explains infrastructure and equipment needs. Among other things, we learn that concrete is best for receiving and blending areas, we learn about mixing and turning equipment, and we read about kinds of shelters for keeping your carbon-
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Chapters 7-11 give detailed treatments of specific methods. A chapter is devoted to each of the following: bin and bay, turned windrow, aerated static pile, and in-vessel systems and systems that compost with animals. McSweeney favors the aerated static pile (ASP) system because of its efficiency: with this method, you can produce finished compost in half or even a third of the time it takes to do so with a turned windrow system. In an ASP system, perforated pipes or ductwork is run underneath the pile, and the necessary oxygen is supplied by the use of blowers that force air through the pipes or ducts.

Chapter 12 deals with food scrap generation and collection, chapter 13 treats site management, and chapter 14 enumerates end uses and markets for compost and helps you think about how to connect with those markets.

Throughout the book, McSweeney walks readers through complex information by manageable steps, with the aid of tables, charts, sample calculations, checklists, worksheets, inset texts with case studies, photos, other graphics, and cross-references. Abundant subheadings in every chapter make it easy to find the topic you’re looking for.

The back-of-book matter has a page of information resources, including the URL for the author’s website. Nine pages of endnotes show that his advice is grounded in knowledge of scientific and trade literature as well as on-the-ground experience.

Since, as a literary genre, the manual is not generally looked to for entertainment, I will add that the author has an engaging, welcoming style that reflects a passion for composting, joy in seeing communities thrive, and a healthy sense of humor. Walk into the introduction, sit down, and let him tell you about composting. I think you’ll be glad you came.
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