

# Rural Papers

Reporting with commentary  
on agricultural and rural issues

**KRC**  
KANSAS RURAL CENTER



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## Putting the Brakes on Neonicotinoid Pesticide Use

By Joanna Voigt



Leadplant, *Amorpha canescens*

Photo by Lucinda Stuenkel, Palmer, Kansas

Since the mid-2000s, there has been a dramatic change in pesticide use in agricultural fields in the US and around the world due to a class of pesticides called neonicotinoids. Currently, over 100 million acres of farmland in the US are planted with neonicotinoid-coated seeds each year. Research has shown that neonicotinoids are being greatly over-used in agricultural fields, with few or no benefits to the farmer in many cases. On the other hand, neonicotinoids are wreaking havoc on pollinators, beneficial insects and other wildlife.

Neonicotinoids, or neonics for short, are systemic pesticides that target sucking insects such as fleas and aphids, and are applied as foliar sprays, soil drenches, and seed coatings. The most prevalent use of neonicotinoids is as a seed coating for corn, soybeans, wheat, canola, cotton, and sugar beets (with corn and soybeans comprising a large majority of crop acres).

The use of neonics as a seed coating has led to unprecedented levels of pesticides being applied to agricultural fields because the seeds are coated with neonicotinoid pesticides prior to planting. This creates a shift from reactive pesticide use (applying pesticides only when and if a problem is detected) to prophylactic, nearly ubiquitous pesticide use in many cases. At least 94% of corn seed planted in the US is coated with neonics, and between 34 - 44% of soybean seed is coated.

Numerous studies have shown that neonicotinoids have very little, if any, impact on yields for many

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# Rural Papers

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Rural Papers is the voice of the Kansas Rural Center, Inc. (KRC), a non-profit organization that promotes the long-term health of the land and its people through research, education, and advocacy. KRC cultivates grassroots support for public policies that encourage family farming and stewardship of soil and water. KRC is committed to economically viable, environmentally sound, and socially sustainable rural culture. KRC is funded by private foundations, churches, and individual contributions.

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# Small Farmer Commentary

## An Ongoing But Crucial Conversation

By Mary Fund, Executive Director

*The Kansas Rural Center board met in late July at The Land Institute in Salina, an apt location for the conversation we were to have, as many of our earliest board meetings occurred at The Land Institute. This was a special meeting to review and adopt a plan for present and future KRC work.*

*KRC has gone through this process several times over the years. Lest you stop reading, as we all know planning is incredibly tedious and boring, I will tell you that we accomplished great things at this meeting. No, we did not solve world hunger, or the health care debate, or cure cancer. But we continued the crucial conversation we began nearly 40 years ago - a conversation that offers practical, workable options to help people address the critical challenges facing food, farming, our environment, and our communities.*

*Topics of discussion at those early meetings included emerging energy issues and fossil fuel dependence, corporate dominance of agriculture and the food system, and the impact on communities and quality of life. Add climate change, the increasing economic disparities between the have's and have not's, and a growing unease about civic discourse and the future of democracy, and the conversation continues today. But more people have joined the conversation. The discussion is broader. The need to come together is stronger.*

*KRC's board member and alumni roster includes some of the most well-read, thoughtful, creative yet practical individuals in the state. We are farmers, ranchers, teachers, editors, consultants, consumers, business owners, and more. We come from different community realities ranging from small towns and solitary farms and ranches in the middle of nowhere - although we all know there is no such thing as 'nowhere' - and from crowded urban communities. Our experiences are varied but reflect the experiences of everyday Kansans. We do not always agree. Yet we came together this summer to reaffirm the basic values, principles, and purpose that have guided KRC's work over the years.*

*The details of the new plan may put a new twist on some old topics but our discussion reaffirmed the following basics:*

*\* Agroecology and ecologically based farming systems offer transformative solutions to hunger, food systems, and climate change—both at home and around the world. At the heart of KRC's mission and program work is a strong commitment to biodiversity and diversification on our farms, in agriculture as a whole, and in our communities rural and urban. The ability to feed ourselves and the rest of the planet rests on the health of our soil and its ability to regenerate itself and support life, and our ability to adapt to changing climate conditions. Sustainable/regen-*

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# Small Farmer Commentary

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erative farming systems must include complex crop rotations and livestock, which increases biodiversity and genetic diversity. Farming practices that include cover crops, extended complex crop rotations, and grass-based livestock systems restore and build biological health of soil, protect wildlife, pollinators and all living organisms, sequester more carbon, retain soil moisture, and store fertility. They also depend on fewer purchased inputs, thus giving greater control back to the farmer. Promoting the adoption of these systems is imperative to the long-term health of the planet and humans.

\* Local and regional food production is smart; it provides healthier food close to home and offers economic opportunities for not only farmers, but related food businesses. Fruits and vegetables are crops too - crops that are in short supply in places like Kansas, where only about 5% of the fruits and vegetables eaten here are grown here. We see a need to increase food production (as opposed to just commodity crops), diversifying enterprises and crops, and to increase processing and related food businesses close to home. This will contribute to the availability of healthier food, improved food access, and ensure true food security for all including the most vulnerable. Local and regional food systems also create economic opportunities for more people.

\* Establishing a new generation of farmers is essential. We recognize that it will take a concerted effort to ensure a new generation of farmers and ranchers. Land and resource access are the biggest challenges new farmers face. High costs of land and increasingly narrow margins, due to low crop and livestock prices, make traditional farming and ranching a risky business even for those with long histories in farming. There is also strong interest from a new generation of want-to-be farmers to start small farms, but they also lack skills and experience. Everyone eats or needs to, so we need to find a way to pass not just farms but farming knowledge to a new generation. We also know that there are alternatives to traditional land or farm transfers (i.e. land trusts and/or socially responsible investment companies or cooperatives that lease land to beginning farmers, community land trusts, etc.) Exploring these will take time and effort and thinking outside the box. More “eyes to the acre” is the best investment we can make, as opposed to assuming that technology

will replace humans in the landscape. We still believe that widespread access to land ownership should be a goal. Also welcoming diversity in our communities is as sure a way to rebuild declining population and community vitality as planting a multi-species cover crop is to soil.

\* The grassroots involvement of an informed people must determine the direction of our cultural and technological choices. From its inception, KRC’s actions have been prompted by the questions “who benefits?,” “at whose expense?,” “what are the hidden costs?”- and “what are the alternatives?” We cannot have an ecologically based biologically and socially diverse farming and food system without an engaged grassroots support base asking questions, having debates, and making decisions—and perhaps most importantly, taking action on a local basis. For this we need reliable information, thoughtful questions, the ability to think critically, and opportunities to work together.

As nearly four decades at KRC have shown, addressing all the issues and challenges listed above is not easy. That task has become more complicated as the issues and problems have become more complex. The importance of our work today is not just the practical solutions to problems such as what farming practices help reduce pesticide use, what cover crop mixes will work best on my farm, or how to maintain or rebuild a local grocery store. The real challenge is to understand how to build and maintain social cohesion as we work together to find solutions. What kind of economy will provide protection, restoration and regeneration of our natural resources and communities, ensure meaningful livelihoods for all people, and do so in a fair and equitable manner?

We do not have all the answers, but we came away from our meeting energized by the conversation and sure that we are tackling the right questions, which is half the battle. Hanging over my desk is a poster with the well-known quote from anthropologist Margaret Mead, “Never doubt that a small group of thoughtful committed citizens can change the world. Indeed it is the only thing that ever has.” KRC is proud to be one of these small groups of citizens. Our numbers have grown. The conversation is broader. There is a greater sense of urgency today. We are ready to move forward.



The 2017 Kansas Legislative session finally ended June 26. The State budget has been pulled out of the ditch with the passage of a modest income tax bill over the Governor's veto. The fate of the new school funding formula - that was signed by the Governor - still rests with the Kansas Supreme Court. And now that state legislators have taken the wheel, the Governor is on his way out, courtesy of an appointment by the Trump Administration. While his departure still depends on confirmation by the U.S. Senate, it is expected that Lt. Gov. Jeff Colyer will take over at some point by the end of the year.

The Kansas Tax Experiment, now rejected by the Legislature at the urging of everyday Kansans, stands as a cautionary tale to the rest of the country. What we have righted, the rest of the country is about to experience first hand, if the Trump Budget, filled with tax breaks and cuts to essential programs much like Kansas' failed experiment, makes it through Congress.

## Kansas State Legislative Wrap-Up 2017 Legislature Takes the Wheel

by Paul Johnson and Mary Fund

But for now, Kansas has turned a corner. The new Kansas income tax bill created three income tax brackets, eliminated the non-wage business income (LLC loophole) exemption, blocked future automatic income tax reductions, and reinstated deductions for medical expenses, mortgage deductions, property taxes and child care expenses. This bill reinstated about two-thirds of the income taxes in 2010 - \$600 million versus \$900 million.

There was reduction in the State's sales tax, and Kansas still has the second highest sales tax on groceries or food in the country. There was no expansion of sales tax on 'non-essential' services. Fuel taxes that would have been dedicated to the highway fund, and there was no increase in the cigarette tax.

If the Kansas Supreme Court rules that school funding provided is inadequate, a special legislative session would need to be held, and the debate over a broad range of taxes would ensue. The state budget still relies on transfers, internal borrowing for cash flow, and increased bonding. The sales tax

is still taken from the highway fund. An additional \$400 million in bonds will be sold for highway maintenance. The payments to the Kansas Public Employee Retirement System (KPERs) are mostly restored. School funding is increased \$300 million over two years. After nine rounds of budget cuts, it will take a few years to recoup program losses. But the adequacy of that amount is still under review by the Supreme Court.

After nine years of no salary increases for most state employees, there is a 2.5% increase for state employees with less than 5 years of service and 5% for state employees with over 5 years of service. \$2.7 million is taken from special revenue funds for an on-site State Employee Health Clinic. \$4.7 million is added for 20 additional beds at Osawatomie State Hospital and \$2.3 million added for operational expenditures. \$9.1 million is added for a 3% rate increase for providers of Home and Community Based Services. \$11 million is added for Community Mental Health Centers and \$1.5

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# Sustainable Food and Farming News

## Save the Date!

### KRC's Annual Conference Scheduled for November 17-18, 2017

By Natalie Fullerton

The Kansas Rural Center will host its annual Farm and Food Conference November 17 and 18, 2017, in Manhattan, Kansas, at the Four Points Sheraton Hotel. This year the two-day program will highlight how biological, human, and economic diversity builds resilience, and how we can make it happen on our farms, in our communities, and in our part of the world.

The conference promises to have something for a broad spectrum of attendees - from conventional and organic farmers, to beginning and established farmers, conservationists and environmentalists, and local food advocates and community leaders.

Keynote presenters and breakout sessions will illustrate the theme, **“Driving the Change that Matters: Practical and Political Solutions to Our Farm and Food Future.”** Keynote speaker for day one is Denise O’Brien, Women Food and Agriculture Network founder and longtime Iowa farmer and activist, who will provide an inspiring outlook on how to put yourself in the driver’s seat and create a healthy and just food and farm future and society. On day two Ferd Hoefner, Senior Strategic Advisor for the National Sustainable Agriculture Coalition will share his experience working in D.C. to shape sustainable agriculture policy and what’s on the horizon with the 2018 Farm Bill as well as the future for sustainable agriculture. Both keynote speakers have over 30 years of experience in their work and have strong interest in passing on their legacies to a new generation of activists and advocates.

Each day will also include 12 to 15 breakout sessions featuring presentations and panel discussions of how we transform our farms and food system to better meet future environmental, economic, and social challenges. Sessions will also include practical production and marketing information, farm transition ideas for the next generation, conservation practices and management, and informative sessions

on state policy, community organizing efforts in Kansas, and more. A more detailed agenda will be available later.

#### Call for Sponsors

The conference each year would not be possible without the generous support of sponsors. KRC invites sponsors to help support this growing conference. Sponsors have the opportunity to network with the over 200 participants each year by hosting an exhibitor booth. Other sponsorship opportunities include an ad in the conference program, or helping with the costs of local food, scholarships for students and beginning farmers to attend, and more. Sponsorship allows KRC to produce a top quality conference complete with leading experts, diverse workshops, exhibits, locally sourced food, and other opportunities that create a positive, meaningful experience for conference participants. To sponsor the conference, please visit - <http://bit.ly/ConfSponsor2017>.

#### Registration

Cost to attend the conference is \$70 for one day, or \$135 for two days, which includes access to all presenters, lunch and snacks both days, and a Friday evening social hour. Both days will include a lunch from locally-sourced ingredients and will offer conference attendees time for networking and visiting exhibitor booths in order to connect with and learn more about the great people and exciting things happening in farming, food production, and the environment, in Kansas and beyond. To register to attend the conference, please visit - <https://bit.ly/ConfReg2017>.

To learn more about becoming a sponsor, registering, or scholarships at this year’s conference, visit [www.kansasruralcenter.org](http://www.kansasruralcenter.org) or call Natalie Fullerton at 866-579-5469 Extension 701 or email [info@kansasruralcenter.org](mailto:info@kansasruralcenter.org).

# Sustainable Food and Farming News

## Neonictinoids & Pollinators...

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crops. Dr. Christian Krupke, Purdue University, who has done extensive research on neonicotinoids, concludes, “We have not demonstrated a consistent yield benefit of neonicotinoid seed treatments in either case [corn or soybeans] over many sites and many years.” (Kleinschmit 2015) Other studies posit similar conclusions:

- In October 2014, the EPA published a study that analyzed the effectiveness of neonicotinoids in soybean production and found that neonicotinoids “provide little or no benefit for soybean production in almost all cases.” (Kleinschmit 2015)
- In December 2015, 12 universities, including Kansas State University, jointly published a report, “The Effectiveness of Neonicotinoid Seed Treatments in Soybean.” The report states that, “Neonicotinoid seed treatments offer soybean plants a narrow window of protection...against early pests, in targeted high-risk situations.” The report points out that this scenario is almost never present in northern states, and that, “The current use of neonicotinoid seed treatments in soybean and other crops far exceeds pest pressures.”
- In May 2017, the Center for Food Safety released a report detailing lack of evidence of neonicotinoid efficacy in corn. The report states that, “It is uncommon for neonic seed coatings to increase corn yield.” The report goes on to say, “Some research suggests that neonic seed coatings may sometimes actually decrease yields or reduce profit. This may occur because neonics may reduce the populations of organisms that normally help keep pest insects in check.”

As the 12-university study above points out, it is not because neonicotinoids are not toxic enough that there are few benefits to using them, but rather that the timing of their efficacy does not coincide with incidence of target pests, or because the pressure from targeted

pests is negligible enough that yield is not impacted by use of the pesticide. On the other hand, these pesticides are hitting pollinators and other beneficial insects hard.

While planting neonic-coated seeds was originally touted as being environmentally superior to spraying pesticides, deemed a more targeted and self-contained approach, this has not turned out to be the case. Neonicotinoid-laden dust is kicked up and dispersed through the air during the planting of neonicotinoid-treated seeds. Once the seed is in the ground, only 2 – 20% of the pesticide is taken up by the plant, leaving a large quantity of the pesticide to work its way into the surrounding environment. Neonicotinoids are water soluble, allowing for easy dispersal to new locations, and they are highly persistent, remaining viable for weeks to years. As a result, neonics are turning up and accumulating in all kinds of places, including soil, non-target vegetation, surface water, beehives, and our food supply.

- A 2012 Purdue University study found neonics not only “...in the soil in the fields that were planted [with neonic-coated seeds], but more worryingly also in fields that weren’t planted.” (Kleinschmit 2015)
- A 2015 US Geological Survey found neonicotinoids in more than half the water samples collected from streams throughout the US. Prevalence of neonics in streams in the Midwest is even greater, owing to large acreages of corn and soybeans. (Kleinschmit 2015)
- A 2016 study published in Scientific Reports detailed finding neonics in vegetation in pollinator strips that had been planted on organic farms with the specific intention of providing neonicotinoid-free habitat and resources for bees and pollinators.

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# Sustainable Food and Farming News

## Neonicotinoids & Pollinators...

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The pollinator strips had been planted more than 140 meters from fields where neonic-coated seeds were planted, which is the recommended buffer zone. Nevertheless, neonics were found in the vegetation in the pollinator strips as well as in honey bees and hive products from hives located on the organic farms.

In addition to finding their way into the environment surrounding agricultural fields, neonics are winding up in the human food and water supply.

- A 2015 study at the Harvard T.H. Chan School of Health found that "...more than 70 percent of pollen and honey samples collected from foraging bees in Massachusetts contain at least one neonicotinoid."
- In April 2017, a team of chemists and engineers from the USGS and the University of Iowa reported that they had found neonicotinoids in the drinking water supply in Iowa City, Iowa. (Guarino 2017)
- A 2015 study by the American Bird Conservancy (ABC) and the Harvard T.H. Chan School of Public Health found neonicotinoids in "...nearly every food eaten by the nation's Senators, Representatives, and others who dine in the cafeterias of the United States Congress." The study found that, "In two rounds of testing - the first in January and the second in May of 2015 - nearly all Congressional cafeteria food tested positive for one or more neonicotinoid insecticide residues.

Sixty out of a total of 66 food samples, or 91%, tested positive for the chemicals. Forty-seven (or 71%) of the foods had two or more neonicotinoids." (ABC 2015)

### Toxicity

While studies on the impacts of neonicotinoids on human health are scarce as yet, the impacts of neonic

otinoids on pollinators, birds, invertebrates and other wildlife have been well-documented.

Neonicotinoids are highly toxic to bees and many other pollinators and beneficial insects. Both acute exposure to neonicotinoids and chronic exposure to neonicotinoids at low levels are harmful and can be lethal to many pollinators. US beekeepers are reporting hive losses of greater than 50% per year, causing many beekeepers to close up shop and creating a shortage of bees to pollinate crops such as almonds and blueberries, which are highly pollinator-dependent. While measuring the impacts of neonicotinoids on native bees is challenging since native bees are not generally in managed colonies, studies have shown that neonicotinoids are highly toxic to bumble bees at acute levels of exposure, and have debilitating impacts at low levels of exposure, over time.

There are a number of avenues through which pollinators can be exposed to neonicotinoids in the agricultural setting. During the planting of neonicotinoid-coated seeds, when pesticide-laden dust is kicked up, pollinators that encounter the dust often experience immediate and devastating impacts, with large numbers of bees dying or becoming disoriented.

Sub-lethal amounts of neonicotinoids are encountered when bees and pollinators utilize the pollen, nectar or guttation fluid of plants grown from neonic-coated seeds, or through off-target vegetation and water sources that have been contaminated with neonics.

Even at very low levels, chronic exposure to neonicotinoids has been shown to cause changes in foraging behavior, reduced predator avoidance, delayed development and reduced reproductive success in honey bees, and leads to declining health and reproductive success in bumblebees.

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# Sustainable Food and Farming News

## Workshop Addresses Farming for Pollinators and Soil Health, and How Use of Neonicotinoids and Pesticides Impact Both

By Joanna Voigt

On Wednesday, July 26, 2017, over 50 farmers and people concerned with pollinator health on the farm gathered in Holton, Kansas, for a farm tour and workshop. The KRC-sponsored workshop focused on farming practices that benefit pollinators and reduce pesticide use.

The day started with a tour of Shane New's farm outside of Holton. New utilizes practices that focus on building soil health, reducing chemical inputs, and conserving the resources on his farm while putting them to use to increase biodiversity, resiliency, and productivity. New sees a strong tie between the health of the soil and the health of other living things, including humans.

New talked about the "Aha!" moments that led him from conventional agricultural practices to the farming practices he uses now that rely more on soil biology and less on chemical inputs. His children and future generations are important reasons why he farms the way he does. New also emphasizes that the practices he uses must keep the farm profitable or he might as well quit farming.

New utilizes compost to boost organic matter in his soil and to allow soil biology to work for him, creating a healthy ecosystem in the soil that is able to supply plants with the things they need in order to thrive. New purchased a microscope soon after starting down the path he's on, and uses it regularly, checking to see what's happening in his soil with his own eyes.

The afternoon discussion at the EUM Church in Holton featured presentations about pollinators and neonicotinoids, attracting beneficial insects to the farm, and a panel of four farmers who utilize farming strategies that minimize chemical inputs and help protect pollinators of their farms.

Lucinda Stuenkel, Sunny Day Farms, Palmer; Gail Fuller, G & L Whole Foods, Emporia; Robin Griffeth, Griffeth Family Farms, Jewell, and Shane New talked about focusing on soil health and increasing biodiversity on their farms. Use of a mix of cover crops, study of soil biology, adding biodiversity, reducing disturbance of the soil, and moving away from pesticides and other chemicals were topics of discussion.

Stuenkel talked about taking over her farm unexpectedly after the death of her husband and his brother, and the steps she has taken to keep the farm going and to farm in a way that promotes the health of the land she farms. Stuenkel employs a wide range of measures to promote diversity on her farm, and has an abundance of pollinator habitat as a result. She quit using neonicotinoid-coated seeds a number of years ago, and has not been negatively impacted by a change in yield.

Fuller talked about the need to increase biodiversity across every part of the farm, from crops to forages to animals and habitat. Fuller interseeds his crops and forage fields with a broad mix of plant species, including a fair number of species that might not be the first to come to mind when thinking about cover crops, such as marigolds and tomatoes. Fuller utilizes livestock as an integral part of his management scheme, letting them improve soil health and add biodiversity to the ecosystem on his farm. Fuller pointed out that if you want to help pollinators, you need to look at the broader picture, always keeping an eye on increasing biodiversity.

Shane New showed the group what he sees when he looks at soil samples under his microscope. New uses farming strategies based on the SoilFood Web, emphasized by Dr. Elaine Ingham, as the basis for healthy soil and plants and ecosystems. A wide range

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## Stakeholder Meetings Focus on Southwest Kansas Food System Future

By Natalie Fullerton

Southwest Kansas' farm and food future was the focus of three meetings hosted by KRC in March and April, 2017. Kansas food producers, Extension agents, educators, community leaders and others actively working in farming and food attended to begin a dialogue around the vision for food access and farming in Southwest Kansas. Meetings were held in Garden City, Liberal and Dodge City.

For the past four years, the Kansas Rural Center has been leading an initiative, Community Food Solutions for a Healthy Kansas, aimed at increasing healthy foods access and consumption in Kansas, recognizing that in Kansas, our own farms and communities are a critical part of the solution. The first three years focused on overarching state level needs and produced the report, "Feeding Kansas: Statewide Farm & Food System Assessment with a Plan for Public Action." The report led to KRC's current focus on advancing local food systems in the state on a more regional basis, with Southwest Kansas as the first regional focus.

Understanding that each region and community of Kansas is unique, the next step is to zoom in and identify the regional systemic barriers and the public policy or public action supports needed to advance or strengthen local food systems as a solution to making healthful foods the easy, affordable choice for all Kansans. This includes helping provide access to more fresh fruits and vegetables and whole grains, increase the variety of proteins, and increase availability of these foods in retail and home settings for all Kansans, and increase production locally and regionally.

The spring meetings brought together Southwest

Kansans to discuss the different farm- and food-related activities and policies currently in place in Southwest Kansas, especially those that impact local food production and healthy food access. Participants at the meetings worked on tough questions related to advancing the food system in Southwest Kansas and provided an honest assessment of the barriers the region faces in achieving that vision. A few key questions during the day included, "What is your vision for food and farm systems in Southwest Kansas and in your communities?" and "What is in the way of advancing that vision?"

Feedback from the meetings will be used to help inform a Southwest Kansas food and farm assessment and corresponding policy recommendations report. The report will document the key findings and list policy and public action options to help provide opportunities and eliminate barriers to local food production and food access in Southwest Kansas. The report can then be used as a resource and tool for communities, organizations and groups pursuing or already working in the realm of strengthening the region's local food and farming systems which includes healthy food access.

In making healthful foods the easy, affordable choice for Kansans, KRC's goal is to enable local farms and communities to boost the availability of fruits, vegetables, whole grains, and a variety of proteins, and to increase access to and use of these foods at food outlets and in home settings across the state.

Contact Natalie Fullerton at  
[nfullerton@kansasruralcenter.org](mailto:nfullerton@kansasruralcenter.org).

# Resources

## Soil Health Guides for Organic Farming Now Available

The Organic Farming Research Foundation (OFRF) has released a series of educational guides designed to help organic farmers and ranchers enhance the soil health and overall resilience of their operations.

“These guides to practical organic soil health management will assist farmers in selecting the best practices for their particular circumstances, while leading the way toward more sustainable agricultural systems,” said Diana Jerkins, OFRF Research Program Director.

Each guide begins with tools and practices set in the context of the challenges and opportunities identified by organic producers in OFRF’s 2016 National Organic Research Agenda. For those interested in taking a deeper dive, the guides also include reviews of USDA funded organic research, future research priorities, and scientific literature references.

The guides are now available to download free of charge at [ofrf.org](http://ofrf.org). This summer, a limited number of printed copies will be available upon request.

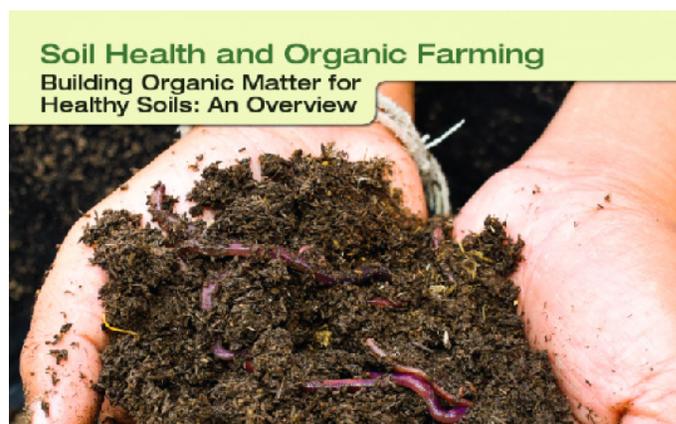
The complete series includes:

**\* Soil Health and Organic Farming Building Organic Matter for Healthy Soils: An Overview** - A discussion of the attributes of healthy soil, the central role of organic matter, and how to monitor and enhance soil organic matter and soil health in organic production.

**\* Weed Management: An Ecological Approach** - An ecological approach to integrated weed management tools that reduce the need for soil disturbance.

**\* Practical Conservation Tillage** - The impacts of tillage on soil health, including practical, soil-friendly tillage practices for organic systems.

**\* Cover Crops: Selection and Management**-- Selecting the best cover crops, mixes, and management



methods for soil health, including crop rotations and cropping system biodiversity.

**\* Plant Genetics: Plant Breeding and Variety Selection** - Plant breeding and variety selection for performance in sustainable organic systems, including potential benefits to soil biology and soil health.

**\* Water Management and Water Quality** - The role of soil health and organic soil management in water conservation and water quality.

**\* Nutrient Management for Crops, Soil, and the Environment** - The role of soil health and the soil food web, including practical guidelines for adapting soil test-based nutrient recommendations (especially N) for organic systems.

The guides were made possible by a grant from the Clarence E. Heller Charitable Foundation, whose mission is to protect and improve the quality of life through support of programs in the environment, human health, education, and the arts.

OFRF is a non-profit organization that fosters improvement and widespread adoption of organic farming systems by cultivating research, education, and federal policies that bring more farmers and acres into organic production.

You can access the series of guides at <http://ofrf.org/soil-health-and-organic-farming-ecological-approach>.

# Sustainable Food and Farming News

## Neonicotinoids & Pollinators...

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Studies have shown that ingestion of even one neonicotinoid-coated seed is enough to kill a song-bird, and that ingestion of as few as five coated seeds can kill a turkey. A study by Dr. Jonathan Lundgren, former USDA-ARS entomologist who studied neonicotinoids extensively, found neonicotinoids in the livers of 50% of deer analyzed in the study.

*“The problem isn’t pests, but a lack of diversity and too much disturbance. If you have a pest problem in your field, it’s because something in your field is out of whack.”*

*- Dr. Jonathan Lundgren*

### So Why Do Farmers Use Neonics?

With all these negative impacts, and so few benefits, why do farmers continue to use neonicotinoids? There are a number of reasons:

- **Farmers are accustomed to planting coated seeds.** Seed treatments have been around for years and unless a farmer grows organically, she or he may never have planted a seed that wasn’t coated with something. Many seeds are coated with a number of treatments, including fungicides, plant growth regulators, and nematicides, in addition to pesticides. The cocktail of treatments is often applied to seeds long before the farmer makes the purchase, with the seed dealer or co-op making the choice and simply relaying the intended benefits to the farmer. Unless a farmer really digs into it, he or she might not know exactly which coatings are on the seed, let alone the impacts that the coatings have on the surrounding environment and organisms.
- **Seeds are a major investment, and neonicotinoids have been intensively marketed as a cheap insurance policy.** In recent decades, seed technology

has become increasingly complex, commodity crop prices rose to record highs (for a time), and farms have multiplied in size, making seed purchase a major investment for a farmer. Neonicotinoids have been touted as an inexpensive insurance for these seeds. Because of the prophylactic nature of application, there is little way for a farmer to judge efficacy, and the risk of not doing what the seed company recommends can be daunting.

- **Access to non-coated seeds is limited.** Because of the structure for purchasing agricultural seed in the US, it can be difficult or nearly impossible for farmers to purchase conventional seeds that have not been treated with neonicotinoids. Corn is coated with neonicotinoids long before it gets to the point of purchase, making purchasing non-coated corn seed challenging. Soybeans are treated “downstream,” at the co-op or seed dealer, and so access to non-coated soy should be somewhat easier. However, there may be significant pressure from the seed company, dealer or co-op, or a perception of risk, or fear of going against the grain that steers farmers towards purchasing coated seeds.
- **Information about the lack of efficacy and negative impacts of neonicotinoids is lacking.** Only recently have studies on the lack of efficacy been published, and the information has not been widely distributed to farmers. On the other hand, farmers are bombarded with information and sales pitches for the various seed coatings and their intended benefits. Likewise, studies concretely tying pollinator decline to neonicotinoids have only recently begun to have traction in mainstream media and farm press.

Because of the lack of benefits to farmers and the widespread negative impacts neonicotinoids have on pollinators, other insects and wildlife, and the envi-

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# Women in Farming News

## Women Explore Farming & Local Food Opportunities at Spring Workshops

By Jennifer Kongs

Last Spring KRC hosted two women in farming workshops - one near Newton at the Walton School in south central Kansas and the other in Palmer in north central Kansas. About 25 women attended each workshop to learn about topics such as soil health, farm financial planning and resources, local food and farm systems, and to tour local farms.

“Women farmers make up a good portion of new or beginning farmers,” stated Mary Fund, KRC Executive Director. “Often women are interested in adding enterprises to existing farms, or maybe they are operating small farms with a local food or specialty enterprise not only as a business or for the income, but to serve a community need. While the information applies to any farm, these workshops were designed to give information and farm models that provide food for local communities and allow women an opportunity to share their questions and experiences with each other.”

### Newton/Walton Workshop

Many of the participants in the Newton/Walton workshop gathered Friday evening for a pre-workshop discussion about their farms and their roles as women in farming

and agriculture, agriculture-related professions, and as local food advocates. The group included women involved in variety of farming operations ranging from urban farms in Wichita, to small farms growing specialty crops and/or livestock, cow-calf operations, and large commercial grain and livestock farms looking for new ideas and how to engage in the local/regional food movement. One young farm woman, who is in the process of finding her role in her parent’s farm, described the discussion as “empowering.”

“Just listening to everyone’s stories, what they’re involved in, and why they do what they do, was inspiring,” she stated afterwards. The full-day workshop on Saturday was held at the Walton Rural Life Center, a charter elementary school in the Newton school district, that has customized its curriculum to learning through hands-on, agricultural production in Walton, Kansas. Rows of garden boots and a wall of hanging garden gloves lined the halls. A huge map of the Flint Hills and the watershed

hung beside the front door with a dot of “you are here” marking the school’s location and its place within the larger community.

Natalie Fullerton, program director with KRC, provided an overview of KRC’s “Feeding Kansas” report (Dec. 2014) with its recommendations to enhance local and regional food production and access in Kansas and the importance of local engagement in supporting the report’s recommendations. Missty Lechner, advocacy project director for the Kansas Alliance for Wellness, described what a food and farm council is, and described the diversity found in food and farm councils across Kansas. Some are paired with local health and wellness initiatives. Others focus on food production, farmers markets,

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*Touring Paula Sims' Morning Harvest Farms*

# Women in Farming News

## Women's Workshops...

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and community gardens, and availability and access to food, and how to enhance those. Some are working regionally on infrastructures for transporting, processing and packaging food.

Four years ago there were only three councils. Today there are 31 counties and communities in Kansas with active councils and 10 more in formation across the state as public interest grows.

Margaret Goering of the Harvey County Food & Farm Council provided a firsthand perspective of the food council mechanics Fullerton and Lechner introduced. Harvey County council's membership includes representatives from the retail and health industries, food producers, and members of the local Extension office and County Farm Bureau.

From getting more local food into school lunches, to increasing community gardens and glean-ing programs for the community's food insecure, the one-year-old food and farm council is stepping forward to change the food system in its region.

Duane Hund, K-State Research and Extension Assistant Director of the Farm Analyst Program, spoke of his work with thousands

of Kansas farmers to set up long-term financial plans. Hund walked the attendees through the questions and answers farmers-to-be need to address. Hund introduced FINPACK, a comprehensive farm financial planning and analysis system, that helps farmers answer these questions: Where am I (financially)? Where do I want to be? How can I get there?

Sheri Grinstead, farm loan officer at the USDA Farm Service Agency's Hutchison office, covered the loan programs available for beginning, women and specialty-crop farmers. These programs include a microloan program up to \$50,000, which offers more flexible access to credit and serves as an attractive loan alternative for smaller farming operations. Grinstead stressed the importance of record keeping so a farmer can more readily access the programs when she walks through the FSA office doors.

Candy Thomas, USDA-NRCS Regional Soil Health Specialist for Kansas and Nebraska, highlighted the importance of cover crops and no-till operations in maintaining soil structure. She used two demonstrations of water infiltration on two different soils to show the vital role organic matter plays in proper soil structure and plant and crop health.

The afternoon concluded with a tour of nearby Morning Harvest

Farms, owned and operated by Paula Sims and her husband, Eric. The Sims bought the farm in 2008, and Paula became the full time farmer while Eric maintains his job in Wichita. First, she decided to get chickens. She loved raising various breeds, but says, "We soon ended up with 24 dozen eggs in the fridge." That's when she began selling at a local farmers market. The couple has diversified since, adding meat, pork, and vegetables, adding more markets and offering CSA (Community Supported Agriculture) memberships. The CSA provides a bag of food weekly to about 30 customers. Sims enhances her bag with products from other producers, like honey, jam and bread, emphasizing the networking that goes on as producers help each other.

The couple has committed to organic, chemical-free production, and uses only organic, soy-free, non-GMO feed for their chickens, pigs, and Dexter cattle. The chickens are housed in old stock trailers the couple has converted into chicken mobiles, complete with solar-powered automatic coop doors, and moveable to greener locations on a regular basis. The pigs are enclosed with electric fencing and are moved regularly, as are the cattle. "We are learning everything as we go. And from YouTube,"

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## Neonicotinoids & Pollinators...

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ronment, it would behoove us to move away from the use of neonicotinoid pesticides. This should not be a move towards other pesticides, which inevitably have their own set of issues, but a move towards diverse, healthy farming systems that do not depend on synthetic pesticides in order to keep pest pressures at reasonable levels.

As Dr. Jonathan Lundgren, entomologist and agro-ecologist, pointed out in his keynote address at KRC's 2016 Farm & Food Conference, "The problem isn't pests, but a lack of diversity and too much disturbance. If you have a pest problem in your field, it's because something in your field is out of whack."

In order to bring fields back into "whack," diversified farming systems can be utilized. Such systems "...intentionally include functional biodiversity at multiple spatial and/or temporal scales in order to maintain ecosystem services that provide critical inputs to agriculture, such as soil fertility, pest and disease control, water use efficiency, and pollination." (Kremen 2012) That means use of complex crop rotations, mixed species cover crops, and mixes of annuals and perennials in the rotation which all increase beneficial insects and soil microorganisms. These systems are being utilized successfully by farmers in Kansas and across the US. Focusing on increasing diversity, building soil health, and reducing disturbance will reduce the need for pesticides.

Putting the brakes on neonicotinoid use and aiming for a farm and food system that supports healthy, functioning ecosystems also helps the farmer as he or she takes back control of or eliminates their inputs. Ultimately, these decisions enhance economic and human health, too.

Contact Joanna Voigt at [jvoigt@kansasruralcenter.org](mailto:jvoigt@kansasruralcenter.org)  
See the online version for citations.

## Women's Workshops ...

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Paula joked with the group. "You would be amazed at what you can learn from YouTube videos!"

### Palmer Workshop

In north central Kansas, the workshops included sessions on pollinator protection and on-farm habitat and growing vegetables in high tunnels, with farm tours of Lucinda Stuenkel's grain and livestock farm and Jay Schliechter's high tunnels near Clay Center.

A healthy food system also requires healthy pollinator populations. Joanna Voigt, beekeeper and KRC's communications and pollinator program coordinator, said that more than 85 percent of plants on the planet require pollinators. One in three bites of the food we eat require pollinators. "In the US, honeybees alone contribute \$17 billion in pollination services, and native bees contribute an estimated \$3 billion in pollination and agricultural services," Voigt said.

Pollinators are declining around the world at a rapid rate: North American bumble bees have declined 93 percent since the 1900s. What can farmers do? Farmers can retain or restore natural habitat, such as windbreaks, fallow fields, edges and ponds. Farmers can also create pollinator habitat, such as foraging habitat and nesting sites and eliminate or reduce pesticide use.

Another way to diversify habitat and crop production is by adding high tunnels, which help farmers looking to grow specialty crops and extend their growing season. Tom Buller, longtime organic farmer and K-State Research and Extension's Douglas County Horticulture Agent, presented the benefits of growing under cover: High tunnels help with moisture control, wind protection, provides a market advantage through

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# Women in Farming News

## Women's Workshops...

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a longer growing season, and boost yield and quality of production. "In the vegetable farming world, there is a saying, 'you have to have things early, late, and ornate,'" Buller said.

Buller admitted challenges - including wind, soil salinity and expense - must be addressed. But, he cited the success of many farmers in adding high tunnels, including one farmer who increased from four pounds per tomato plant from field tomatoes to 18 pounds per plant per tomato plant by using high tunnels, black weed mats, and staking the plants.

To help with expenses, Buller said NRCS has funding through EQIP program for high tunnel purchase. Buller worked for KRC prior to moving to Extension and authored "Growing Under Cover: The Kansas Grower's Guide." Print copies are available from KRC, and online at KRC's website.

Attendees spent the afternoon touring two local farms. The first tour was of Sunny Day Farms, a grass-fed and grass-finished beef operation run by Lucinda Stuenkel. Attendees saw firsthand how she plants cover crops for forage and has separated her pastures into paddocks to rotate her cattle. Stuenkel shared several of the innovations she has added to her operation to help her move and control her cattle, including her calving barn's gentle traps. She also explained that she changed the timing of calving season to avoid dealing with calves being born in cold weather.

Attendee Cheyla Clawson helps her husband with his family's cattle operation. She was struck by Stuenkel's insistence that, with patience, she can move her cattle without prodding or exerting force. "We have done things the same way for years, but maybe we don't have to keep handling our cattle in the same manner we have been," Clawson said.

Fifteen miles away, the attendees next toured Jay and Linda Sleichter's farm. On less than five acres, the family has six high tunnels and grows fresh produce nearly year-round, including hundreds of tomato plants. The family sells produce at several nearby farmers markets, and last year added a CSA delivery program. "We drop baskets of produce off each week to our customers," Jay said. "After our first season, we had a waiting list."

As Buller said in his morning presentation, one benefit of growing in high tunnels is wind protection. The attendees saw this firsthand as the wind tore across the property, but inside the tunnels, the tomato plants were strung securely and remained still. Jay told the attendees that the family does grow vegetables not under cover, but the majority of the farm's profits came from selling produce grown in the high tunnels. "Our most profitable crops are tomatoes," Jay said.

The 2017 Women in Farming workshop series is made possible by a mini-grant from the United Methodist Church Great Plains Conference, and additional funding from the Kansas Center for Sustainable Ag and Alternative Crops, and the Kansas Rural Center.



*Touring Lucinda Stuenkel's  
Sunny Day Farms*

# State Policy News

## Legislative Wrap-Up

*continued from page 4*

million for the Senior Care Act. \$1.2 million was added for the State Water Plan primarily for streambank stabilization. There was no securitization of tobacco settlement funds.

The Kansas Supreme Court ruled that the new school funding formula can go into effect July 1, so that schools could remain open. But this is not a judgement on the equity or adequacy of this act. Oral arguments were heard by the court on July 18, but our schools – already enrolling the state’s children for the fall semester - are waiting to hear whether the school formula passed provides enough dollars.

While the elected Kansas State Board of Education requested an additional \$885 million over two years, this new school funding formula added only \$300 million. The first year of this new school plan is \$195 million and the Court may require the 2018 Kansas Legislature to allocate more funds for 2019 and beyond. There is some limit on how quickly a school district can handle significant increases in funding. The Court will continue to maintain jurisdiction over this lawsuit and monitor any additional funding.

**Summary.** Despite the big turnaround on the tax situation, the 2017 Legislature did not do much for Kansas in terms of the environment and our natural resources, and food or farm issues. This year’s

Legislature enacted the fewest amount of laws in the last five years, with no significant legislation helping our ecological or environmental standing, nor future generations.

There was a small achievement for water (i.e. the extra \$1.2 million in State Water Plan funding of which \$1 million will go to streambank stabilization) but this may be at a cost to future years water plan funding. And there was no acknowledgement of climate related realities and how they are changing our world, calling for a change in policy and programs to help us react, adapt, and build for the future. While lawmakers heads were focused on taxes and budgets, the state experienced back to back wildfires, a late season snowstorm and more manmade earthquakes across Kansas.- all evidence of a “new normal.”

The State’s Local Food and Farm Task Force presented its second report last January, once again calling for the state to invest in the research and programs to increase fruit and vegetable production in the state, and recommending that the State Department of Agriculture establish a Local Food and Farm Advisory Board. But the research and extension request was lost in the chaos of the budget/revenue struggles. No action has been taken, that we know of, by the state agriculture department. The good news is that people are organizing at the community and county level to help each other (31 counties now

have local food councils and more are in progress). That grassroots effort may be best for statewide progress. However, state support is still needed to provide the kind of research and education that will enhance specialty crop production relevant to Kansas.

Beginning farmer programs and land link programs (i.e. efforts to link retiring or selling farmers to new or beginning farmers) can be found around the country, but Kansas does not have a current program in place to officially encourage land access for new farmers, such as tax credits for retiring farmers to lease or sell to a beginning farmer.

There is much to be done here in Kansas and across the country. We are far from being out of the economic woods in Kansas. Conservative power brokers who still believe that cutting taxes jump starts the economy or helps working families, and that privatization of everything from schools to health care to prisons and beyond is the right direction for the economy are regrouping for another assault. But now that we have turned a corner, we can perhaps focus on some of the critical public policy debates and opportunities ahead of us.

In the Fall issue of Rural Papers we will cover potential 2018 Policy opportunities.

Contact Paul Johnson at [pdjohnson@centurylink.net](mailto:pdjohnson@centurylink.net) and Mary Fund at [mfund@kansasaruralcenter.org](mailto:mfund@kansasaruralcenter.org).

### KDA Offers 2017 Organic Certification Cost Share Program

The Kansas Department of Agriculture has funds available for the National Organic Certification Cost Share Program (NOCCSP), allowing farms, ranches and businesses which produce, process, or package certified organic agricultural products to be reimbursed for eligible expenses.

The NOCCSP allows state agencies to provide reimbursement to certified organic operators for up to 75 percent of the operation's total allowable certification costs, up to a maximum of \$750 per certification scope in the areas of crops, livestock, wild crops and handling (i.e., processing). The current period of qualification for organic operations seeking reimbursements is from Oct. 1, 2016, through Sept. 30, 2017, and applications will be accepted through December 15, 2017.

The application for the cost share funding, as well as other information about the program, is available on the KDA website at [agriculture.ks.gov/organic-costshare](http://agriculture.ks.gov/organic-costshare). Reimbursements will be on a first-come, first-served basis, based on receipt of the completed application packet, until available funding is exhausted.

Beginning in fiscal year 2017, the United States Department of Agriculture has transferred the authority to administer USDA's two Organic Certification Cost Share Programs from the Agriculture Marketing Service to the Farm Service Agency. FSA awards the NOCCSP funds to eligible state agencies that serve as administering entities who work directly with organic operations to reimburse organic certification costs.

KDA is committed to serving all Kansas farmers and encouraging economic growth of the agriculture industry, which is the state's largest economic driver.

Questions regarding cost share funds for organic certification may be directed to KDA economist Kellen Liebsch at [Kellen.Liebsch@ks.gov](mailto:Kellen.Liebsch@ks.gov) or 785-564-6726. Additional information can be found at the USDA National Organic Program website at [www.fsa.usda.gov/programs-and-services/occsp/](http://www.fsa.usda.gov/programs-and-services/occsp/).

### KRC Farming that Benefits Pollinators workshop...

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of microbes, fungi, and bacteria are the ultimate goal and New's slides demonstrated this.

Robin Griffeth, Griffeth Family Farm, Jewell, also focuses on increasing soil health through the use of cover crops. Like several of the other farmers and people at the workshop, Griffeth has been inspired by Dr. Jonathan Lundgren, former USDA-ARS research scientist. The award-winning entomologist now runs his own regenerative, research farm in South Dakota. His knowledge of the impacts of neonicotinoids on pollinators and other beneficial insects has been a primary source of information and inspiration for those wanting to move away from using neonicotinoids and other pesticides. Griffeth grows sunflowers, in addition to other crops, and makes a concerted effort to track down sunflower seeds that are not treated with neonicotinoids, after learning of the impact on pollinators.

Access to non-neonicotinoid-coated seeds was a topic of discussion more than once during the day. Farmers are finding that if they call their seed dealers far enough ahead (possibly up to a year ahead of planting), they are sometimes able to get non-treated seeds. This includes Pioneer Seed. The more farmers ask for non-coated seeds, the more available they will become. A few local and regional seed companies sell non-coated seeds, as well. Growing public varieties is an option and allows for farmers to save seeds.

Coping with the pressure of being judged by neighbors and peers for doing something different on the farm was another topic discussed by the farmers. As Fuller put it, "Peer pressure is huge. It's huge." Nevertheless, these farmers are committed to farming in ways they feel will carry themselves and their farms and families into the future.

Other speakers during the afternoon included Angela Anderson, Kansas Wildlife Federation,

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# Sustainable Farm and Food News

## KRC Farming that Benefits Pollinators Workshop...

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who talked about the resolution that she authored which focuses on restricting neonicotinoid use, and which has been adopted by the National Wildlife Federation. To read the resolution, visit <http://www.nwf.org/Who-We-Are/Affiliate-Partnership/Resolutions/Resolutions/2017/2017-02.aspx>.

Joanna Voigt, Kansas Rural Center, discussed pollinators, their importance to farms, food, ecosystem health and biodiversity, and how neonicotinoids are impacting pollinators worldwide. She pointed to farming practices that use agroecological and regenerative principles as means to dramatically decrease pesticide use on the farm. These practices also incorporate habitat, which is critical to pollinator populations.

Retired Colonel Gary LaGrange talked about his Servicemember Agricultural Vocation Education (SAVE) Farm, near Manhattan, Kansas, which is a pathway to farming for veterans and servicemembers. Beekeeping is a significant part of the curriculum, and making and selling beekeeping equipment provides revenue for the farm. For more information on this exceptional farm, see <http://www.thesavefarm.org/>.

Sarah Zukoff, PhD, K-State Research and Extension, Entomologist, provided information on the efficacy of neonicotinoids in soybeans and other crops in Kansas and information on how to attract beneficial insects to the farm. Zukoff pointed out that neonicotinoids were the first new class of systemic insecticides introduced in over 50 years, and are considered safer than earlier insecticides. But this was before some of the research came in on efficacy of seed coatings and harm to pollinators and soils.

Zukoff co-authored a report published by 12 universities that explored the efficacy of neonicotinoids in soybeans. The report concluded that there are few to no benefits to farmers in using neonicotinoid-coated soybean seeds in nearly all circumstances. She spoke of a two to three week efficacy once the coated seed is planted that does not coincide with the timing of the primary pests. Neonicotinoid seed treatment, she concluded, is unnecessary in Kansas unless you know you definitely have a problem. Spending your dollars

on Integrated Pest Management that helps determine the need for pesticides and spraying once the need is identified is a better economic investment. Zukoff also talked about the vast number of beneficial insects as compared to insect pests, and discussed strategies for attracting them.

Several presentations, and the resources on alternative farming practices and the impacts of neonicotinoids on pollinators, are available on KRC's website.

The workshop was hosted by the Kansas Rural Center with funding from The Ceres Trust.

For more information on KRC's pollinator work contact Joanna Voigt at [jvoigt@kansasruralcenter.org](mailto:jvoigt@kansasruralcenter.org).



*Touring Shane New's Farm near Holton, Kansas*

# Resources

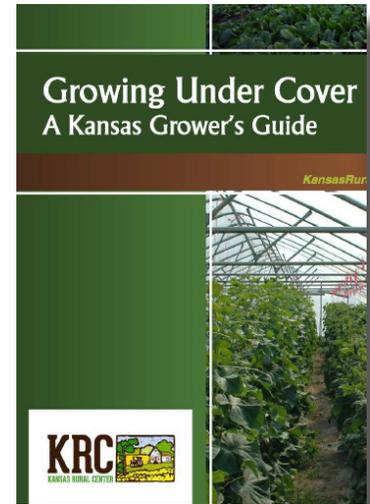
## Growing Under Cover - A Kansas Grower's Guide Now Available

Written by Tom Buller, Kansas Rural Center; Dr. Cary Rivard, Kansas State University, Fruit and Vegetable Extension Specialist; and Kim Oxley, Research Extension Associate, Kansas State University; *Growing Under Cover: A Kansas Grower's Guide*, provides success stories from Kansas farmers who use tunnels on their farms, additional general management strategies, and specific cropping advice for some of the most successful crops grown in high tunnels in Kansas. This is the second of two Growing Under Cover publications from KRC.

This is a great resource for growers who are looking to start growing in high tunnels, as well as those who already have a high tunnel and are seeking to optimize its use. It will also provide a foundation for growers seeking to understand the basic management practices and needs of various crops within high tunnels.

The publication is available online at the KRC website at <https://kansasruralcenter.org/growing-under-cover-2-is-here/>. A limited number of hard copies are also available. Contact [info@kansasruralcenter.org](mailto:info@kansasruralcenter.org) to request a copy or copies. A full color pdf is available for download or printing, and a black and white pdf is also available.

The report was funded by USDA SCBG through the Kansas Department of Agriculture. *Growing Under Cover Volume I: Guide to Poly-tunnel Options for Kansas Growers* is also available on KRC's website at [www.kansasruralcenter.org/our-publications/](http://www.kansasruralcenter.org/our-publications/).



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## Calendar

Aug. 30 KOP/NFO FARMSTARTS Workshop Klinefelter Barn Conference Center, 1724 230th Road Hiawatha, Kansas. 8:30 am to 4 pm. Contact Ed Reznicek, [amerugi@jbntelco.com](mailto:amerugi@jbntelco.com) or call 785-939-2032.

Oct. 21-22 Mother Earth News Fair, Topeka, Kansas. <https://www.motherearthnews.com/mother-earth-news-events>.

Nov. 17-18 KRC Annual Farm & Food Conference, Manhattan, Kansas. See [www.kansasruralcenter.org](http://www.kansasruralcenter.org).

December 1-2 Kansas Farmers Union Annual Convention, Emporia, Kansas. Look for details later at [www.kansasfarmersunion.com/](http://www.kansasfarmersunion.com/).

See the website for more detailed calendar. [www.kansasruralcenter.org/calendar](http://www.kansasruralcenter.org/calendar).

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