Organic Seed: An Emerging Industry, A Pressing Need

OFRF-Funded Project Summaries

Integrating songbird conservation and insect pest management in organic California vineyards
Effectiveness and economic impact of weed control systems in organic garlic production
Organic certified potato seed production in the Midwest
Determining habitat requirements for natural enemies of farm pests
Participatory plant breeding to improve sweet corn for organic farmers
Managing farm habitat for wild pollinators
Crop Planning for Organic Vegetable Producers: A Practical Skills Handbook
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Why Seed Matters
For over 20 years, Seeds of Change has offered the largest selection of certified organic seeds in the industry, including heirloom, traditional, and rare seeds. Our seeds are produced through a network of certified organic family farms and professional growers. Through these partnerships, Seeds of Change continually cultivates, studies and develops seeds with the goal of producing the finest certified organic, open-pollinated varieties to share with our fellow gardeners and farmers.

We bring this same philosophy to the dinner table, too. The Seeds of Change line of Certified Organic foods and chocolates were inspired by the notion that great taste and sustainability go hand in hand.

To learn more about where we’ve been and where we’re going, visit seedsofchange.com.
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Greetings Organic Producers and Supporters

Back in 1980, I carried around 3x5 cards, each one representing an organic farming supporter. I used them to organize public support for the USDA’s Report and Recommendations on Organic Farming. Later, in 1990, we shared one ancient computer (yes, there were ancient computers even in 1990!) to publicize the National Academy of Sciences (NAS) report Alternative Agriculture. Earlier this summer, the newest NAS report on sustainable and organic agriculture declared that both incremental and transformative change is needed to move American agriculture forward. Three decades, three federally-sanctioned books and, finally, organic research and education priorities are taking root. Thanks to you.

We’ve come a long way. Throughout the Organic Farming Research Foundation’s first twenty years we have worked to take incremental steps to build programs, but always with the big picture in mind, advocating for transformative shifts in thinking to grow organic systems.

Like many farmers and organizations focused on organic production, OFRF started modestly. We concentrated — both then and now — on developing reliable, scientific information farmers could use to become more efficient and effective organic growers. We have awarded more than $2.5 million through 300 grants to farmers and scientists working to give farmers essential production and marketing tools.

But we’ve always known our own grantmaking is not enough to transform agriculture to where we know it should be. So we developed a policy team to leverage our work at the federal level, and we created the Organic Farmers Action Network to bring the authentic voice of organic producers to the policy table. Our ground-breaking 1997 report, Searching for the ‘O’ Word, revealed a stunning lack of federal organic research support. This year, through our efforts and those of many other organizations and individuals, the USDA will direct $53 million to organic research. That is the beginning of success and another step toward transformative change.

OFRF has also worked to create new federal programs aimed at helping small family farmers achieve organic certification and increase organic acreage. The Natural Resources Conservation Service now gives conventional farmers and ranchers economic incentives to transition to organic.

These programs have made a huge difference. The number of organic farmers has climbed from roughly 3,000 in 1993 to more than 14,500 today. The number of certified organic acres today stands at 4.1 million. Sales of certified organic products are rising as well and now account for roughly 3.7 percent of U.S. food sales. Organic agriculture represents a tremendous economic opportunity for family farmers and ranchers and the communities in which they live.

I look on my twenty years leading OFRF as the most productive and satisfying time in my professional life. We have made steady progress toward the agricultural transformation we all seek. Despite the current recession and partisan gridlock, momentum builds.

Now, as I retire from OFRF, and thirty years after I first organized grassroots support for organic research and education, I thank you for your generous support. While OFRF proudly has led the charge in many areas, no one group or set of individuals can claim preeminence in delivering wins. The organic community’s gains are the product of the whole group working toward a common vision to see organic become the leading form of agriculture.

With that community and common vision in mind, I want to introduce you to OFRF’s new executive director, Maureen Wilmot. Maureen has the undivided support of the OFRF board of directors and staff. As our deputy director over the past year-and-a-half, she has shown clear vision and determination to advance organic agriculture. I know she will carry that commitment forward as the Organic Farming Research Foundation’s new executive director. I hope you will work with her and OFRF to continue building our vision of an organic future.

— Bob Scowcroft

P.S. Don’t let the agro-industrial complex get you down. Never give up organizing for a better world. Thanks.
A few days ago I was asked, “What makes you want to get out of bed every morning to work with organic farmers?” Actually, it’s my black Lab waiting to get the paper and my squawking chickens waiting to be fed that get me up every morning. While I only have five hens, this small contribution to the fresh food my family enjoys every day does give me a feeling of responsibility and a tremendous sense of satisfaction. But the number one reason I get up every morning to support organic family farmers can be traced to dinner at our house a few years ago. When my oldest son was in fifth grade, his best friend, Jake, was having dinner with us. As Jake was reaching for his third helping of freshly shelled organic English peas, he looked up and said, “These are the best peas in the world. Will you give my mom the recipe?”

It is the recipe for the best peas in the world that led me to the Organic Farming Research Foundation. Working for OFRF has unveiled a new world to me. It has allowed me to take an important lifestyle choice and turn it into a passionate career path. It has become completely clear to me that OFRF has played an important and crucial role in transforming agricultural practices and policy in this country. But the transformation is far from over. Farming in America needs to continue to change. OFRF is poised to help make that change.

Building on the work and vision of founding Executive Director Bob Scowcroft, the leadership of the board of directors and the expertise and dedication of staff, OFRF is embarking on an exciting path. OFRF seeks to build a vibrant base of organic champions in the fields around the country, and on Capitol Hill in Washington, D.C. Our integrated strategy of grant making, policy, and education initiatives supports organic farmers’ immediate information needs while moving the public and policy makers toward greater investment in organic farming systems. During the next two years, OFRF will focus on these areas: Seed Matters, the 2012 Farm Bill, and the Multiple Benefits of Organic Farming Report and Communication Campaign.

Through the new Seed Matters project, we will financially support organic seed and breed development through our research and education grants. Continuing to provide organic farmers needed information to encourage success on their farms remains our mission. You will read more about recent organic seed developments and the importance of organic seed research elsewhere in this Information Bulletin.

In 2011, we will launch our 2012 Farm Bill campaign focused on increasing investment in organic family farms and creating new opportunities for organic farmers. OFRF’s policy program uses a two-pronged strategy of grassroots mobilization and direct advocacy to bring the organic farmer’s voice to national policy debates and to integrate organic into agriculture policy. We will call on Congress to continue its positive investment in organic agriculture. It is an investment in America’s family farmers and in the rural communities across the country that see great potential for growth in the burgeoning organic industry.

To realize our vision of an organic future, OFRF recognizes the need to increase the number of people invested in organic. This means deepening our commitment to current certified organic farmers, assisting a greater number of conventional farmers as they transition to organic, and marrying our efforts with those in the larger conservation community and beyond. Our new Multiple Benefits of Organic Agriculture Project will analyze existing scientific data documenting benefits like cleaner air and water, more healthful food, and an economically strong family farm base. Our initial findings, to be released in April 2011, will be an authoritative reference for U.S. research and discourse and will be supported by a strategic communications campaign. This campaign will allow us to engage non-traditional allies to work with us to support organic farming.

While these are ambitious goals, they are absolutely necessary to ensure that more people are enjoying “the best peas in the world.” The more we can create a world where organic farmers are successful, the more people will have the opportunity to eat organically grown food. And that is the recipe I’m giving to Jake’s mom.
From its beginning, the National Organic Program envisioned a time when planting with organic seed was the universal practice for organic growers.

Some might question why organic seed matters so much. If you only consider pesticide exposure, it seems unlikely that a tiny seed is going to carry much toxic residue. It is even less likely that those toxins would end up in the vegetables produced by those seeds. On its face, it seems like a reasonable observation, but when you probe a little deeper, you realize that organic systems concern themselves with more than just pesticide exposure.

Organic systems aim to work with nature at every level beginning with seed. Seed, after all, is the foundation for all plant production. It carries the genetic roadmap that ensures survival, not only for the plant, but for the people who will consume it. When farmers seek to maximize production in harmony with nature, they turn first to the strongest, most resilient seed they can find.

This seed is likely to be produced by a plant that has thrived in soil similar to the soil on their farm. It has thrived in a similar climate and adapted to produce plants that can resist the many natural pests and diseases in their region that can reduce yield. Often, seed is selected for plants producing vibrant color; extraordinary taste, and sometimes, even, unusual shape. In essence, farmers rely on natural selection, and the diversity that results, to help develop seed stocks that will thrive in their organic system.

As we have learned through scientific observation of breeding processes, there is no "one size fits all" in the natural world. Where one plant variety thrives, another withers. Nature has shown repeatedly that adaptability is a dependable route to survival. Seeds tuned to organic systems — seeds that are bred for sensitivity to place and region-specific growing conditions — are central to success.

To ensure plant diversity, organic growers recognize that increasing attention to the breeding and development of varietal abundance in organic seed stocks is essential. In fact, it is a pressing need. Breeding programs supported by the federal government and corporate interests have shifted focus away from traditional breeding programs. They focus on a comparative handful of commercially universal traits, including a heavy emphasis on genetically engineered seed. As a result, plant diversity is in sharp decline. If this shift continues, the eventual outcome will be the severe reduction in the diversity nature tells us is essential to plant survival. Over time, an ongoing commitment to monoculture, with its emphasis on a handful of genetically engineered varieties, will place our food supply at risk.

Organic growers, working in concert with the natural world, seek to counter this alarming trend. For them it is clear: seed does matter. They understand that renewed investment in traditional breeding programs emphasizing organic systems is essential to achieving a truly resilient food production system.

In the series of articles that follow, we will address in more detail the growing challenges and emerging opportunities surrounding the breeding, protection, production, and availability of organic seed.
In early 2010, the Organic Farming Research Foundation was among three organizations receiving recognition for their work to protect, develop, and promote organic seed systems. This recognition came as a generous gift from the Clif Bar Family Foundation totaling $500,000 over five years. These funds will support a special organic seed protection and development initiative known as Seed Matters. OFRF and its partners — the Center for Food Safety and Organic Seed Alliance — will share these funds to actively protect and promote organic seed.

Seed Matters Partners

Center for Food Safety

Protecting Organic Farms From Genetic Contamination

The Center for Food Safety believes in a vision of the future of food — one that is “organic and beyond.” As part of this program, CFS defends against threats to, and attempts to weaken, the national organic standards, actively engaging the National Organic Standards Board, and working in Congress and in the courts when necessary. CFS also believes in food and farming systems that go “beyond organic” and are local, biodiverse, appropriately scaled, socially just, humane to animals, and carbon neutral. Since CFS believes that the organic standards should underlie all American agriculture, we work actively to halt the spread of those methods that are “prohibited” by these standards including genetic engineering, sewage sludge, and irradiation. Especially in the arena of genetically engineered seed, CFS has been at the forefront of halting these prohibited methods.

Organic Farming Research Foundation

Providing Grants for Organic Seed Research and Education

Funding research to improve organic production and marketing methods is central to the Organic Farming Research Foundation’s mission of fostering the improvement and widespread adoption of organic farming systems. Historically, one of our research priorities is encouraging development of new, more resilient seeds and breeds. Over the last 11 years, we’ve invested $430,000 to support 27 breeding or seed-related projects. Support received through the Seed Matters initiative will enable us to accelerate our support of essential organic breeding work. Already, OFRF has issued its first round of seed related research grants through the initiative (see page 26 for our 2010 grants list) and is poised to approve second round grants in the spring of 2011. OFRF’s objective in providing seeds and breeds funding is to ensure that farmers have access to a diverse selection of high quality organic seed for all of their crops.

Organic Seed Alliance

Promoting Organic Seed Integrity

Organic food integrity begins with organic seed integrity. Organic Seed Alliance’s research, education, and advocacy programs support the ethical development and stewardship of organic seed. OSA’s advocacy program confronts the threats to organic seed, including seed industry consolidation, contamination by genetically engineered crops, and restrictive intellectual property rights, while creating and promoting decentralized, regional seed systems. OSA’s research and education programs are building networks of farmers and plant breeders that develop and preserve superior plant varieties for organic systems. OSA also provides farmers with access to shared knowledge, resources, and infrastructure needed to successfully grow organic seed. As a Seed Matters partner, OSA acts as an educator and convener to increase skills, knowledge and awareness of the benefits of organic seed and on-farm, public, organic breeding.

For more information, visit centerforfoodsafety.org

For more information, visit OFRF.org

For more information, visit seedalliance.org
that organic farming carries its own set of seed challenges. He summed up his feelings by saying, “If we can’t get the seed right today, the rest of it will be wrong tomorrow.”

While seed and genetics are fundamental to food production, organic seed has yet to gain solid footing as a structural element in organic farming systems. Despite the significant improvements in organic production methods and growth in the organic market since the Organic Foods Production Act was signed 20 years ago, organic seed systems have struggled to survive much less celebrate success. What this means is not only are we losing a key input in the organic integrity chain, but more profoundly, we are lacking the advancement of genetics that have the potential to fundamentally shift organic systems in a positive direction.

The USDA National Organic Program (NOP) requires the use of organic seed, with the exception that conventional untreated seed may be substituted when “an equivalent organically produced variety is not commercially available” (§205.204). Information regarding actual on-farm use of organic seed as well as the rate of allowances (also referred to as derogations) made for conventional seed substitution is unavailable, as to date there is no system for reporting or tracking this data. This lack of reliable data is one of the greatest barriers to the success of organic seed systems. In 2008, after considerable public comment, plus input from certifiers, seed companies, and farmer advocacy groups, the National Organic Standards Board (NOSB) recommended the creation of a “two-way” national database. This data would inform growers of organic seed availability, identify non-equivalency and lack of organic seed availability by tracking the allowances given by certifiers to farmers to plant conventional seed. So far, the NOP has made no formal response to this specific recommendation or to other guidance on seed matters made by the board. (See sidebar, “NOSB Guidance on Organic Seed.”) Instead, the industry relies on anecdotal accounts of seed availability from certifiers, seed companies, and farmers to track organic seed use. Good regulation requires good information, and in the U.S., the industry is seriously lacking information on organic seed.

Nevertheless, anecdotal information coupled with other independent data sources make clear that the organic industry is nowhere near universal organic seed usage. In the Organic Seed Alliance’s State of Organic Seed (SOS) 2010 survey of organic farmers across the country, only 20 percent reported that they are using organic seed. The remaining 80 percent of respondents most often pointed to a lack of varietal availability or appropriate genetics (equivalency, in NOP language) as the number one reason they were not using organic seed. Analysis of the survey data suggests that facts on the ground are likely worse, because producers who are having trouble sourcing organic seed would be less likely to complete the survey. Regardless, we know that farmers

The day after the State of Organic Seed Symposium last February, a farmer approached me in the hallway of the Upper Midwest Organic Conference. He was not a newcomer to farming by a long shot, but he was relatively new to organic. He’d been sitting in on a workshop session summarizing challenges in organic seed, and he told me that seed issues were one of the things that drove him out of conventional farming and towards organic. He ticked off the list of reasons why: disappearance of independent seed dealers, dwindling seed choices, and pressures to buy the “GMO herbicide-seed package deal.” While he initially thought seed issues would be easier in organic, he had begun to understand

1The Organic Seed Alliance initiated a State of Organic Seed project in order to improve the organic community’s understanding of seed issues, and as a project tool implemented a national survey of organic producers. The survey received 1,027 responses—just over 10% of organic crop producers from 45 states.
Seed companies say that farmers’ hesitation to purchase organic seed is the primary reason why they are reluctant to increase organic seed investment.

Sales data points to cases where farmers purchase conventional seed instead of organic varieties that are essentially equivalent or even the exact same variety. Farmers admit that, regardless of the rule, they factor “cost” into their assessment of “commercial availability.” Forty-one percent of the farmers responding to the SOS survey reported that price has been a “moderate” to “significant” factor in their decision to plant non-organic seed.

This creates a conundrum. Seed companies say that farmers’ hesitation to purchase organic seed is the primary reason why they are reluctant to increase organic seed investment. For seed companies, developing organic seed lines requires significant commitment and outlays due to adding organic infrastructure, higher production costs, plus the cost and added expense of certification for organic handling. Farmers, on the other hand, struggle with the real problem of inadequate seed supply, especially in particular crops and sectors. Forage growers, for example, often cannot find an adequate organic seed supply. While there may be a few dozen carrot varieties produced organically, the diversity of regions, farms, farmer needs, and consumer preferences requires considerably greater diversity than currently exists.

Risk is another problem for organic producers. Switching from a conventional variety that works “well enough” to an organic variety that costs more but is untested is not an easy decision for a farmer to make, especially when their livelihood and reputation with customers are at stake. While certifiers understand this, and commonly recommend that farmers conduct a thorough search and document their efforts to find organic seed from additional sources, they rarely encourage (and are not legally bound to require) that the farmer plant small test plots of organic varieties to trial their efficacy as a way to ease the transition. Only 32 percent of farmers in the SOS survey reported that their certifier had recommended variety trials, yet this is a basic activity that would clearly give farmers valuable information. Trials are a useful tool for all farmers looking to improve their systems, and resources exist to help farmers plan and manage organic variety experiments — groups such as Organic Seed Alliance and Practical Farmers of Iowa can help guide farmers through this process.

Organic certifiers are perhaps in the least enviable position. While many certifiers are aware that the NOSB has developed recommendations for increasing seed usage, they have received neither guidance from the NOP nor training about organic seed that might better serve the operations they certify. When a farmer shows the certification inspector three catalogues and then shows a sales receipt for a conventional seed variety that those catalogs don’t have organically, it is difficult for a certifier to do anything other than permit the allowance to use non-organic seed.

So, how can the industry get beyond these fundamental issues?

First, we have to understand the value of organic seed. Farmers know that plant genetics are the first front in addressing environmental biotic and abiotic challenges like pests, diseases, weeds, and climate stress. Organic seed has the potential to be bred specifically for adaptation to organic conditions. Research shows that varieties do not perform equally across conventional and organic production systems.2 Vibrant public breeding programs and a healthy organic seed industry can provide organic farmers and their customers with more productive, nutritious, and resilient crops. This will only happen if the farmers participate by trialing and using organic varieties and by not avoiding organic seed based upon cost premiums that are in line with the cost premiums they themselves earn over conventional product.

Organic food companies have a role as well, particularly by encouraging farmers to use organic varieties. When processors require farmers to use specific varieties, it may be feasible to work with the seed company that owns those varieties to produce the seed organically. For example, a frozen vegetable processing company is likely to require that their producers use a particular variety of green bean. At times, that variety may not be available organically in sufficient quantities. But if those companies were to engage the seed producer and explain that their growers would be using hundreds of pounds of this green bean seed, the market would respond — not only the conventional suppliers, but other innovators competing for a piece of that market. The organic food industry can also play a key role by investing in public breeding initiatives and other research in organic seed. Commodity check-off programs, which support research and development in conventional agriculture, are not available.

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in the organic sector so our industry needs to find innovative ways to invest in research based on our understanding of the value it brings to our products and customers.

Finally, it is time for the NOP to begin responding to the National Organic Standards Board’s recommendations on commercial availability of organic seed. Organic farmers and certifiers lack information and guidance, and without decisive action from the federal program, it is no wonder that some farmers question why they should bother trying to source and use organic seed.

The development of a viable organic seed sector has the potential to provide much more than simply closing an allowance in the NOP rule. Organic producers have fewer “spray-on solutions.” As such, seed is their first front for countering environmental challenges from pest outbreaks to plant diseases to adverse weather. Farmers know this to be true. In the State of Organic Seed Survey, 83 percent agreed that varieties bred for organic system management are important for the overall success of organic agriculture.

Achieving success will require working together to create strong organic seed breeding programs to develop varieties that will stand up to the demands of organic farming systems. It will require advancing a regulatory structure dedicated to supporting organic seed as a system goal. It will also require development of data tracking tools to assess seed usage and to help farmers locate viable seed options. By addressing these needs, we will foster the emerging organic seed industry and provide organic family farmers with the confidence they need to move toward 100 percent reliance upon organic seed.

Matthew Dillon is an advisor to Clif Bar Family Foundation (CBFF) and coordinates the initiative for CBFF.

“Further Guidance on Commercial Availability of Organic Seed”

NO SB Recommendations to the National Organic Program

In September 2008, the National Organic Standards Board (NOSB) approved recommendations created by a joint committee on organic seed issues.

The board stated: Only a small proportion of the seed currently used by organic farmers is certified organically grown seed.

The board also noted: Many [accredited] certifying agents (ACAs) do not believe they have been given viable guidelines for their role in verification procedures, regarding seed, and that the goal of their guidance was to bring clarity to the issue and accelerate the utilization of organic seed.

In addition to the call for a “two way database” to track information on seed availability and needs, the NOSB made specific recommendations to certifiers, to National Organic Program regulators, and to certified growers.

Following are a few examples of the NOSB recommendations on organic seed made to each group:

To the National Organic Program:
Emphasize to ACAs that organic seed usage by clients must be monitored and improvement in percentage usage is expected and must also be monitored. Documentation of the levels of organic seed usage and evidence of improvement in the percentage vs. total seed usage by the ACA’s clientele should be audited as part of the NOP accreditation reviews.

To organic certifiers: Maintain and submit upon request to the National Organic Program documentation of the organic seed usage status (current percent levels as compared to historical levels of usage by acreage) of each certified operator.

Organic growers were advised to keep records when requesting an allowance to use non-organic seed that included detailed information that goes beyond the current requirements, such as the attributes of appropriate form, quality, and quantity ... description of the site-specific agronomic or marketing characteristics ... written description of trials comparing organic and non-organic seeds or planting stock (if they want an allowance based on non-equivalency).

Finally, the board also encouraged processors and buyers of organic crops who require that certain varieties be produced to provide the organic seed or planting stock to their producers or to provide the producer with documentation of the lack of availability of such varieties.

The full text of the NOSB organic seed recommendations is available on the USDA-AMS website, and can most easily be found by doing a search for “Further Guidance on Commercial Availability of Organic Seed.”
In the Marketplace

A Seed Seller’s Perspective On Industry Needs

By Erica Walz

For companies that breed, produce, and sell organic seed, it can be a rough road managing the risks and logistics required to bring a new organic variety to market. Erica Renaud has managed those risks and logistics first-hand. With her perspective in both the international organic seed trade and activism in the seed movement, she can identify a number of challenges to the evolution of organic seed development in the U.S., and has some thoughts on turning those challenges into opportunities.

Renaud agrees with others in the seed movement that development of a seed database is a critical step to the future success of the organic seed industry. In addition, she points to several other structural and regulatory gaps.

“We don’t have the most basic things. We don’t have an effectively functioning seed database. We don’t have a bioregional structure for evaluating seed equivalency and availability. We don’t have methods in which to train organic inspectors about the availability of organic seed and about seed treatments. And we don’t have any indicators for success, such as: what are the goals and dates to achieve implementation of the National Organic Program’s seed regulatory clause,” says Renaud.

Improvements in these crucial areas, she says, could help advance organic seed use in the U.S.

From the seed breeders’ perspective, the seed database issue is a particular frustration. It is not quite correct to suggest there is no database. A group of organic seed companies did band together and provide funding to the Organic Materials Review Institute (OMRI) to support an OMRI-hosted organic seed database. This database currently serves as the primary U.S. organic seed information resource. It is used by seed distributors to list seed and by growers to source seed. The primary concern is its limited functionality due to lack of support. Initially, the OMRI seed database was to be funded by the industry with seed retailers entering their own data and paying per variety listed to support the service. But with no mandate to do so, and no designated data manager, ultimately, it has been managed by the retail companies who enter varieties that they have available. If a variety runs out, they’re supposed to remove it from the list, but it has not worked out that way.

The seed companies complained that the initial funding plan (paying per variety listed) was too expensive. Subsequently, the fee to use the database was changed to $60 a year per seed company, a system this has not provided funding sufficient to either maintain the database or support staffing. As a result, the database, while useful to a degree, is incomplete, with some companies forgoing participation altogether. This is not a recipe for a successful information resource.

“If a company chooses to list a variety, they can. If they don’t want to, they don’t. If the variety sells out, they are responsible for removing the variety, but in most cases they don’t. This leaves the grower, the certifier, and the other seed companies confused about what is really available,” says Renaud.

The seed breeders see another obstacle to organic seed market development. This roadblock involves the rules regarding who can enter seed data. Seed distributors are the only ones who can list seed, because they conduct retail sales. Seed breeding and producing companies cannot list varieties, and so growers are not aware of all of the germplasm that has been developed and is potentially available in organic form.

“So companies have a broader assortment of organic varieties that they’ve produced that are applicable because they’ve been screened in North America, but the organic customer doesn’t know that a seed breeding company might have, say, 175 varieties available because only 75 of them have been listed by distributors,” says Renaud. “So the discussion has been: do you improve this database or do you replace this database.”
In looking for a remedy, Renaud points to the European model. In the European Union (E.U.) organic regulations mandate that each E.U. member country create its own organic seed database. With that mandate comes financial support to develop and maintain organic seed data. While the quality of the databases varies from country to country, Renaud believes the E.U.’s commitment to organic seed information has been a huge factor in its greater level of development in the organic seed industry and greater organic seed availability for E.U. producers.

“For one, they have a lot more seed companies, and they have different kinds of seed companies. In the U.S., we have a lot of E.U. and Japanese subsidiaries, and we have Monsanto. While we have a lot of lettuce and corn seed companies, they have a lot more companies that have diverse portfolios of unique breeding and production. The E.U. also has a much more rigorous variety registration process. While this has some limitations, in the case of equivalency, this registration process ensures strict documentation of varietal trait characteristics, which helps in the equivalency determinations,” she says.

In addition to mandated, financially supported organic seed databases, another structural support the E.U. has offered to the organic seed industry is the development of “expert groups” that review seed availability regionally. These expert groups are comprised of multiple stakeholders, such as growers, researchers, and company representatives that can critique whether a derogation (an allowance to use conventional seed) is appropriate or not.

“This has allowed them to develop crop groups, or species-specific closures to derogations by region,” says Renaud.

So in France, for example, all organic growers must use organic cucumber seeds, because an expert group has reviewed that crop group and they have determined that the derogation can be closed because there is a broad enough assortment of sufficient cucumber varieties available in organic form. The derogation closure stimulates companies to produce organic cucumber varieties to meet anticipated market demand. Every E.U. member state is required to submit an annual status report to the E.U. stating by crop group and by region the number of derogations allowed and explaining why.

As to how an “expert group” arrangement might work in the U.S., Renaud suggests the possibility of capitalizing on current USDA structures, such as the regionally-based Sustainable Agriculture Research and Education (SARE) system.

“It really has to be thought through what is appropriate here, but one thing to look at is we do already have the SARE model,” she says. “By one method or another, equivalency has to be measured by bioregion. Granted, what would happen in the Southwest, as far as the level of detail involved in reviewing varieties would be magnitudes greater than what would happen in the Midwest. In a state like California, it could almost be looked at by county or by valley.”

As another focal point for reform, Renaud points to interpretation and enforcement of the organic seed regulatory clause in the National Organic Program (NOP) rules. She says weak guidance and inadequate enforcement is retarding seed development. Enforcement is left to the organic certification agencies, or ACAs, which are responsible for developing capacities within their organization to monitor organic seed use.

Renaud says one problem is that each ACA has a different mechanism for evaluating organic seed use. As a result, interpretation and enforcement varies from one organic certifier to another. Another problem is that because each ACA is its own entity, in some respects they compete with one another. As such, Renaud believes they are conscious that if they make organic seed enforcement too difficult, they will lose some clients and increase their own workload. Also, inspectors have varying levels of knowledge around seed varieties, which increases the difficulty in making decisions on allowances.

“Some ACAs operate nationwide or even internationally, and so they’re inspecting in areas where varieties function completely differently in one agro-climate as compared to another one. So when a grower indicates, ‘that variety doesn’t work for me ... I have to use this other variety,’ certifiers don’t feel confident that they can actually make that call, says Renaud. “It’s clear that putting all the onus on the certification body to make decisions around allowable derogations is just too much.”

This is where, in the E.U., again, the expert group comes in. If a certifier is unclear about whether to allow a derogation or not, they can go to the expert group in their region and for the particular crop and ask if the variety is equivalent or not, and whether there is an alternative for the grower.

“You don’t want to alienate growers by forcing them to use varieties that aren’t appropriate, limiting their on-farm genetic diversity, and/or bankrupting them,” says Renaud. “That’s why you need the diverse stakeholder group, because I’ll have a perspective, you’ll have another perspective.”

Finally, on the steps to achieve implementation of the seed clause as outlined in the National Organic Program rule, Renaud returns again to the E.U. model.

“The E.U. mandates in their organic regulation the interpretation and prescribed steps to carry out their organic seed clause. We do not have this. This is our biggest dilemma as a seed industry. Until the NOP develops a set of policies and practices to implement the organic seed rule, we continue the dance of uncertainty,” she says.
In December 1997, then USDA secretary Dan Glickman proposed making genetic engineering an acceptable method for use in organic farming. Close to two hundred thousand public comments vehemently opposing this idea flooded the agency. As a result, the final organic standards prohibited genetic engineering as a production tool. At the time, the USDA said this prohibition was based on market considerations related to simple consumer preference — that buyers of organic would not pay a premium for organic if these foods were genetically engineered. True enough, but this rationale evaded the fundamental issues that consumers have with genetic engineering in food systems. There are profound environmental, health, and ethical reasons why the organic movement opposes this technology. Over the past decade, the consequences of genetically engineered (GE) crops have been widely observed and documented. These consequences range from alterations in soil biology to genetic contamination of wild plants and non-GE crops, to the creation of so-called “super weeds.” As a result, public resistance to genetically engineered crops over time has only become more compelling.

Promoters of GE crops would have us believe that genetically altered crops help resolve food production problems. Super weeds are worthy of discussion, here, as they serve as a colossal example of how this argument fails. Worldwide, more than 80 percent of all GE crops are designed to tolerate mass spraying of herbicides, mostly Monsanto’s weed killer RoundUp®. As a result, in the United States alone, this increases the amount of herbicides used on crops each year by one hundred fifty million pounds over what would be sprayed on the same acreage if non-GE crops were planted. The massive spraying of RoundUp® over the last decade has led to the evolution of weeds that are now resistant to RoundUp® and are choking millions of acres of farmland around the country. Worse yet, as RoundUp® becomes non-functional, companies are pushing GE crops resistant to even deadlier herbicides. Dow is seeking USDA approval for 2,4-D-tolerant corn and Monsanto is pushing Dicamba-resistant soy. These herbicides are by orders of magnitude more toxic than glyphosate-based RoundUp®, and the potential release of these crops is cause for alarm. This is planned obsolescence at work. Sooner or later, weeds will evolve resistance to these herbicides as well and be nearly impossible to eradicate with any chemical treatment. Meanwhile, the pesticide companies will have made their profits. Clearly, a battle for the future of food production in the United States is underway, between the organic movement, which is devoted to eliminating these dangerous toxins from our farms and food, and pesticide companies who are employing genetic engineering to boost the sale and use of the chemicals that are the foundation of their business.

The GE problem is not limited to chemical pollution. There is also the problem of biological contamination. GE crops are not just another “tool” in the agricultural tool box: they have the potential to contaminate all the other tools. The battle against genetically engineered seed is critical to protecting the integrity of organic seeds, food, and farms because of the genetic contamination threat inherent in GE technology. The contamination risk is made worse by the aggressive practices of biotech companies, in particular...
Monsanto, and the many points where contamination of organic and other non-GE crops may occur. It should be noted that organic producers are not alone in opposing GE seeds. Conventional farmers who plant non-GE crops experience similar genetic contamination risks. Inadequate regulatory oversight by the USDA and EPA contributes to this risk, which is particularly acute in foundational crops like corn and soybeans and is increasingly evident in canola. In areas where GE canola dominates the landscape, organic canola has become virtually impossible to produce because contamination is almost guaranteed.

Meanwhile, Monsanto and its fellow biotech companies have sought to commercialize GE wheat, alfalfa, sugar beets, rice, bentgrass, and “biopharm” crops (crops that have been engineered to produce pharmaceutical drugs). Imagine the impacts on organic farmers if these crops had become as widespread as GE corn, soybeans, and canola. But they have not been successfully commercialized. Why not?

In the past several years, the Center for Food Safety (CFS) and its coalition partners have used groundbreaking legal victories, market pressure, and grassroots campaigns to successfully halt the sale and plantings of these new GE crops at the agency level or in the courts. This past April, CFS, representing alfalfa farmers and the organic dairy industry, battled Monsanto in the U.S. Supreme Court. In June, the Supreme Court announced its decision in which CFS and the organic community were victorious in maintaining the national ban on the planting and sale of GE alfalfa — so it remains illegal to sell or plant this crop. Perhaps most importantly, the Supreme Court officially recognized that the threat of “biological pollution” — specifically the potential of GE crops to contaminate organic and conventional crops — was a justified and sufficient legal basis for farmers to sue the government and those corporations responsible.

CFS recently achieved another series of victories in the courts, once again representing farmers, by winning a ban on the sale and planting of GE sugar beets. As a result of this and other legal victories, new case law on GE crops has finally been established. Perhaps most notably, these decisions — including the Supreme Court ruling — have established that biological contamination of non-GE crops, whether conventional or organic, can be considered harm under the law. In addition, the courts held that the government can no longer ignore the negative environmental impacts on organic farmers if these crops had become as widespread as GE corn, soybeans, and canola. But they have not been successfully commercialized. Why not?

What are we facing next? As noted, Dow and Monsanto are pushing the approval of crops that can tolerate even more toxic pesticides. These plans must be challenged. The courts and Congress need to maintain pressure on USDA and EPA to stop them from serving the interests of the large biotech companies and hold them to enforcing the laws and regulations intended to protect the environment, farmers, and consumers.

As legal and Congressional efforts to halt the expansion of GE crops continue, the organic movement stands in the forefront of public education efforts that cut through the misleading public relations campaigns trumpeting GE crops — that they increase yield or nutritional value or decrease chemical use. These are myths. Organic and GE crops, at least as they exist today, cannot coexist. They represent opposing paths for the future of food. Moreover, because of the potential for cross-pollination and resulting contamination, GE crops are not good neighbors. If not halted, they can and will destroy the integrity of organic systems.

As it increases chemical and biological pollution, genetic engineering has also led to the control of the world’s commercial seed supply by a few chemical/biotech companies. Monsanto alone owns about a quarter of the world’s commercial seeds. Dupont, Syngenta, Dow and Bayer own another quarter of the world’s supply. These companies acquired this control of half of the world’s germplasm by buying up smaller seed companies and developing patents over their genetic resources. Proposals for the future include development of “terminator” technology that renders seeds sterile after one growing season. This sinister technology threatens both the availability and integrity of organic seeds. Unless this corporate monopolization of seeds is halted, only a few so-called “super seed” varieties will be available to the world’s farmers. This destruction of seed biodiversity represents a kind of monoculture on steroids. Ultimately, it poses a serious threat to the world’s food security.

Fortunately, there is some progress in halting the monopoly on our seeds. Responding to public pressure, including a direct meeting between CFS and current USDA Secretary Vilsack on this topic, the agency and the anti-trust division of the Department of Justice are now investigating concentration in the seed industry. The investigation reportedly places emphasis on examining Monsanto’s practices and tactics. The last of a series of public meetings was set for December 2010 in Washington, D.C. A positive outcome would result in legal actions.
to divest Monsanto of some of its seed holdings. Another positive development is that the legal and grassroots actions already described have halted Monsanto’s expansion into new crops. As a result of these actions and other market forces, the company has lost the majority of its stock value in the last year and is in a poor economic position to acquire more seed companies.

While some headway is being made at halting corporate monopoly on seeds, halting the patenting of seeds is more problematic. First a little history. The idea of patenting plant material was initially brought before Congress as early as 1905 by seed dealers eager to acquire intellectual property rights over their new hybrids. For decades, Congress consistently resisted such proposals — lawmakers rejected the idea of patenting as it would make the saving and sharing of seed and research on this germplasm illegal.

However, seed dealers and researchers continued pressure on policymakers for some form of plant protection. Finally, in 1970, Congress passed the Plant Variety Protection Act (PVPA) which allowed for a plant breeder to obtain a Certificate of Protection (COP) for a new plant variety. A COP is not a patent. Rather, it provides up to 20 years of protection giving the breeder control over the sale of that variety and, unlike a utility patent, a COP allows the farmers to save seeds on their own farms and permits unrestricted research on the new protected seed variety.

Then, in 1985, the U.S. Patent and Trademark Office under the Reagan Administration allowed a patent on a sexually reproducing plant, for the first time making seeds and seed reproducing plants patentable. It based its decision on the 1980 Supreme Court Chakrabarty decision which allowed the patenting of a genetically engineered microbe. These patents (under a policy that was never approved by Congress) prevent a farmer from seed saving, bar small-scale sales of the seed, and prevent research on a patented seed variety unless the farmer or researcher is willing to pay the patent holder. In 2002, in a U.S. Supreme Court case (J.E.M. Ag Supply, et al. v. Pioneer Hi-Bred Intl., Inc.), the Court held (in an opinion written by former Monsanto attorney Justice Clarence Thomas) that even though Congress had never approved the patenting of seeds and had specifically decided against it in favor of the PVPA, it remained legal for the Patent Office to patent seeds because Congress had not passed a law specifically prohibiting it. As a result of this patent decision, several thousand plant varieties have now been patented. This includes both genetically engineered and conventional hybrid varieties.

Before the 1985 patent decision, farmers were able to save their own seed and even sell it to other farmers without fear of legal prosecution. Since the patent office decision, companies like Monsanto who have been granted patents on seed have the right to sue farmers for saving this seed, regardless of whether they have done so intentionally or unintentionally due to genetic pollution caused by pollen drift or other causes. Monsanto alone has threatened thousands of farmers with litigation, collected patent fees from large numbers of farmers, and taken more than a hundred to court. Their persecutions and prosecutions have led to farmers paying tens of millions of dollars to the company.

Public interest groups including CFS have successfully challenged individual plant and animal patents. We have seen successful challenges to patents on basmati rice, broccoli, and other crops. However,
the real solution to the patenting problem is for Congress to effectively reverse the 2002 Supreme Court decision and pass legislation affirming that the PVPA is the sole means for protecting property rights in seeds in the U.S. Farm, food safety, and environmental groups have attempted to work for approval of such an amendment but without success. There needs to be a major push towards this goal in any patent reform legislation being considered by Congress or, alternatively, in the next farm bill. Finally, it is vital that, nationally and internationally, the U.S. stand as a partner in declaring a permanent ban on terminator technology. Currently the USDA is part owner of the major patent on terminator technology. This is politically and ethically repugnant.

The next few years will be crucial in saving organic seeds and biodiversity from control and manipulation by major corporations. With so much to lose, the organic movement must take the lead in challenging new GE crops. We also need to wrest control of our seeds from the major chemical companies, forever ban the patenting of seeds, and prevent the destruction of their fertility through terminator technology.

On the Farm

Charting a Course for Seed Self-Determination

by Kristina Hubbard

In 2005, when Monsanto purchased Seminis, the world's largest vegetable seed company, organic farmers found themselves facing an ethical quandary. Do they continue purchasing seed varieties they had relied on for years, now owned by a multinational biotech giant, or do they scramble to find alternatives that work as well on their farm?

Count Judy Owsowitz of Whitefish, Montana, among those organic farmers who chose to abandon Seminis varieties. Owsowitz was also not alone in asking seed companies she purchased from to stop doing business with Seminis, citing Monsanto's commitment to genetic engineering and open hostility toward organic. Some seed companies did drop their Seminis line. Others could not afford to do so and, in some instances, alternatives weren't readily available.

Five years later, Owsowitz is still working to replace an estimated 20 percent of varieties that she dropped following the acquisition.

“The biggest losses,” she says, “have been varieties that have a short growing season and traits for cold tolerance and cold soil emergence. Alternative varieties I've come across do nothing for Montana's organic farmers.”

Owsowitz's experience is not unique. Responses to a nationwide survey conducted by Organic Seed Alliance in 2010 indicate the organic sector is underserved in genetics specifically adapted to organic cropping systems, regions, and market niches. For varieties of organic seed that are available, many farmers are challenged by a lack of sufficient quantity.

While problems surrounding organic seed are complex, consolidation in the seed industry stands out as a major contributor to the basic lack of availability of organic seed. Companies have rapidly consolidated in the last 40 years, absorbed by transnational firms with chemical and biotechnology interests. The result has been less competition and choice in the marketplace and a lack of infrastructure to provide for the diverse needs of organic farmers.

“The organic industry wasn’t particularly well served to begin with,” says University of Wisconsin plant breeder Bill Tracy. “But consolidation has removed commercial cultivars that organic growers really liked and made them less accessible. There’s no question consolidation has increased the problem.”

Some of the worst concentration exists in major field crops. Three firms account for 75 percent of corn seed sales nationwide. Genetically engineered
traits, namely RoundUp Ready® and Bt, have facilitated concentration of market power. For instance, nearly all conventional U.S. corn, soybean, and cotton acreage is planted to genetically engineered varieties controlled by Monsanto.

Dozens of mergers and acquisitions followed the expansion of agricultural biotechnology. Many smaller companies could not compete with large firms that owned much of the genetic resource base in seed. Licensing genetics from these firms was costly, creating a barrier to new private research firms. At least 200 independent seed companies have been acquired or gone out of business in the last thirteen years, including companies interested in providing for the organic and conventional seed market.

Concentration is a consequence of weak antitrust law enforcement that should have stopped anticompetitive mergers and acquisitions.1 It is also a consequence of Supreme Court decisions that allowed agricultural biotechnology and other plant products to be patented. Together, these factors led not only to concentrated market power but concentrated ownership of plant genetic resources — the lifeblood of plant breeding.

Tracy explains the current role of intellectual property rights. He says intellectual property rights developed by plant breeders — which include plant patents established in 1930 for asexually reproducing plants and hybrids and protection certificates established by the Plant Variety Protection Act (PVPA) of 1970 — all protect varieties but do not protect genes. That is, people can use protected varieties to develop new ones. Congress was clear in its intent to avoid hindering innovation by including two important exemptions in the PVPA: 1) researchers can use PVPA protected varieties to further innovation; and 2) farmers can save seed from protected varieties.

A 2001 Supreme Court decision, however, held that utility patents — patents for inventions — could not only be applied to your toaster at home, but to sexually reproducing plants. “Now utility patents can tie up everything,” Tracy explains. “And that is the intent. It’s certainly a chilling force. There’s germplasm I wouldn’t touch as a plant breeder because companies could assert their rights under the patent.”

Patents therefore have the potential to hinder innovation by removing valuable plant genetics from the pool of resources breeders rely on. Breeders are restricted or prohibited from using patented varieties, traits, or tools unless onerous licensing agreements are signed and expensive royalties paid. Or, as Tracy describes, some breeders are simply restricted by their own fear of being sued.

Farmers also live with this fear, as patents eliminate their right to save seed. Saving seed provides farmers both agronomic and economic benefits. They can select seed from plants that performed best in their local climate while saving money on new seed purchases for the next growing season. Monsanto has pursued thousands of farmers in patent infringement investigations for allegedly saving seed, and over a hundred have been pushed into court and forced to pay thousands — or even hundreds of thousands — of dollars to the company.

Patent holders like Monsanto enforce their patents through technology

1Kristina Hubbard’s landmark report, Out of Hand: Farmers Face the Consequences of a Consolidated Seed Industry, examines consolidation trends in the seed industry, and the Dept. of Justice’s investigations into alleged anticompetitive conduct.
agreements. These agreements recently started showing up on Seminis vegetable seed packets, bringing Monsanto’s presence in the vegetable market — and the company’s aggressive enforcement of patents — into stark relief. Simply opening a packet of the popular Big Beef tomato seed variety now enters the grower into a licensing agreement with Monsanto.

In 2010, the U.S. Department of Justice focused on these and other licensing agreements as part of an investigation into competition in the seed industry. These are historic, ongoing investigations, and the focus should be broadened to examine the consequence of utility patents on plants that are slowing innovation. Congress could help by clarifying in law that the PVPA should be the sole intellectual property protection for sexually reproducing plant varieties, as was the original Congressional intent, ensuring that breeders have access to more varieties for research and that farmers can save seed. The PVPA provides patent-like protections for plant developers, including exclusive rights to propagate and market the variety for 20 years, yet also provides reasonable exemptions for researchers and farmers so that innovation can occur.

But, even if those two things happened, positive movement in these areas is not enough to ensure organic farmers have access to quality organic seed. Organic farmers still rely on a private seed industry highly concentrated by firms with non-organic interests. And the public sector, historically the most important source for regionally adapted seed, lacks the ability to provide for the organic market in the face of dwindling funds for traditional plant breeding and the related increase in private dollars funding research.

Bolstering public funding for plant breeding and keeping this research in the public domain would go a long way toward building organic seed availability. But there are opportunities the organic community can seize right now, without government action. We can work collaboratively to build the infrastructure for developing and distributing organic seed.

Owsowitz, who dumped Seminis after its acquisition, sees farmers like herself as part of this solution. She recognizes that consolidation is a deep-seated trend in the seed industry, having seen competition and variety options decline before Monsanto entered the vegetable scene. Seminis dropped more than 2,000 varieties (25 percent of its product inventory) in 2000 to cut costs, leaving farmers in a lurch even back then.

“That’s why I’m selecting seed for certain traits from my own fields,” Owsowitz says. Owsowitz is developing vegetable varieties on her farm that survive northwestern Montana’s short growing season and cool temperatures. Each year she selects seed — most notably from spinach, pumpkin, and pepper plants — that demonstrate desirable traits in her organic system. Each year she sees more advantages.

Organic Seed Alliance is helping farmers like Owsowitz restore the skills needed for seed production. With our partners, including four land grant universities, we are establishing decentralized, farmer-oriented seed production networks across the U.S. These collaborative networks, such as the Northern Organic Vegetable Improvement Collaboration, provide farmers access to shared knowledge and resources, including seed growing equipment. Program goals include developing varieties optimal for organic systems and safeguarding invaluable plant genetic resources.

As an organic community, we need to keep challenging threats to the integrity and expansion of organic agriculture, especially consolidation. But we also need to devote attention to positive solutions, including organic seed systems that restore farmers’ role and rights, ensure new varieties are available and shared for breeding purposes, and provide a diversity of healthy food now and into the future.

Kristina Hubbard is the Director of Advocacy for Organic Seed Alliance, and is the author of Out of Hand, a report that examines the implications of consolidation on farmers.
AWARDING GRANTS FOR SEED AND BREEDING RESEARCH is central to the Organic Farming Research Foundation’s effort to support the improvement and widespread adoption of organic farming systems. In 1999, OFRF funded its first organic seed project, an effort by Walter Goldstein at the Michael Fields Agricultural Institute to breed white, red, blue, and yellow field corn varieties under organic conditions. Since then, OFRF has funded an additional 26 breeding or seed-related projects, resulting in an overall investment to date of $430,000 in this area of study.

OFRF is now placing even greater emphasis on research into developing new organic seeds and breeds through the Seed Matters initiative. Our first round of grants totaling more than $50,000 was awarded last fall. (Please see our 2010 grants list on page 26.) A second grant round is planned in spring 2011, and while the spring proposal deadline has already passed, we strongly encourage researchers to consider submitting proposals for funding in fall 2011. The proposal deadline for the fall grant cycle is May 16, 2011.

Seed Matters enables OFRF to continue its support of organic seed breeding efforts through dedicated funds. We’re placing a high priority on funding research in the following areas:

- Systems approaches to managing seed-borne diseases
- Systems approaches to managing insect or nematode damage to seeds or seedlings
- Participatory plant breeding activities
- Developing organic seed storage strategies that reduce damage from insects or mold
- Developing strategies for maintaining integrity of organic seed.

Visit ofrf.org for a detailed request for proposals (RFP) on our Seed Matters initiative. OFRF will also continue funding education and outreach projects, and a detailed RFP on these projects is also available on our website.

Some of the highlights of organic seed and breeding work that OFRF has funded include:

- Start-up funding for Washington State University’s organic wheat breeding program was awarded to Stephen Jones over three years (2001-2004).
- A one-year grant was awarded to Ronald Hammond at Ohio State University for evaluation of glandular-haired, potato leafhopper resistant alfalfa for organic farming systems (2004).
- Three years of funding was awarded to Dave Christensen, Seed We Need, Montana, to develop corn borer-resistant corn for organic farming systems (2006-2008).
- Two years of funding awarded to Eric Nelson at Cornell University to study suppression of Pythium damping off with compost and vermicompost (2007-2008).
- Work with our Seed Matters partner, the Organic Seed Alliance (OSA) since 2004, funding numerous OSA research and education projects, including publication of seed production guides for carrot, lettuce, beets/chard, and forthcoming guides on sweet corn, carrot, and tomato breeding.

Visit our Funded Projects pages at ofrf.org for detailed information on our grants awarded and project results. And please feel free to contact me at 831-426-6606 or jane@ofrf.org if you would like to discuss your project idea or funding proposal.
In this issue of our Information Bulletin, we’re posting shorter summaries of OFRF-funded project results than we have in previous newsletters. Our goal is to create concise pieces for you to read. However, we continue to post detailed summaries of project results in both web page and pdf formats on the OFRF website (ofrf.org). As always, we also post the complete project results as they are submitted by each project investigator. We believe in providing you with complete access to the results of work funded and performed through OFRF’s grantmaking program. Please visit our Funded Projects pages on the web at ofrf.org for more information.

Another new development is OFRF’s monthly email newsletter, Organic Link, which contains our latest project results and other useful organic policy and industry news. You can subscribe by visiting ofrf.org.

Meanwhile, please feel free to tell us how we’re doing. Do you like these shorter summaries? Is this information useful to you? We look forward to hearing any feedback about our print and online content. Contact us at: info@ofrf.org.

Research Project Summaries

Vineyard Research Shows Pest Management Value of Songbird Nest Boxes

An increasing number of winegrape growers on California’s North Coast are placing songbird nest boxes in their vineyards, primarily to help conserve cavity-nesting bird species. To date, no studies have systematically analyzed the role of these cavity-nesting birds in suppressing vineyard pests such as leafhoppers, sharpshooters, and moths. The objective of this study was to test whether biocontrol of moth, leafhopper and sharpshooter pests is enhanced through conservation of insect-eating birds by erecting songbird nest boxes. Study results showed that occupied nest boxes led to an increase in numbers of insect-eating birds in the vineyard, most notably the Western Bluebird. Numbers of birds doubled in nest box areas early in the season and there was a 2.6-fold increase late in the breeding season when fledglings were seen foraging with adults throughout the vineyard. Observations of bluebird foraging distances from the nest boxes were relatively consistent and demonstrated active foraging both close and far (over 65 meters) from nest boxes. Study results suggested that bird conservation practices may be a win-win scenario for organic winegrape growers. For more information visit the ofrf.org > funded projects > insect pest management page. Project title: Integrating songbird conservation and insect pest management in organic California vineyards. Investigator: Julie Jedlicka, University of California, Santa Cruz, CA. OFRF funding awarded: $15,000, Fall 2008.

Garlic Producer Closes In On Successful Weeding Strategies

Organic gourmet hardneck garlic is an excellent niche market, high value crop that can be profitably grown on a few acres, but it is also extremely labor intensive. The most labor intensive aspect of organic garlic growing is weeding. Even moderate weed coverage can severely reduce garlic yield and bulb size. Since garlic is a nine month crop, the organic farmer must combat multiple flushes of weeds. To help organic farmers choose suitable weed control, Susan Fluegel and her partners at Grey Duck Garlic Farm evaluated the effectiveness of four different weeding methods on two varieties of organic hardneck garlic, German Red and Georgian Crystal. The two main treatments were pre-planting solarization and stale seedbed. The subplots were garlic variety (German Red or Georgian Crystal) and post-planting weeding method (flame or hand). Fluegel evaluated weeding time, weed coverage, garlic bulb weight (total yield), garlic bulb size, and the economic feasibility for all weed control methods. Her results showed that the most economically effective weed control method, as measured by cost of weed control per pound of garlic, was stale seedbed followed by hand weeding. For more information visit the ofrf.org > funded projects > weed management page. Project title: Effectiveness and economic impact of weed control systems in organic garlic production. Investigator: Susan Fluegel, Grey Duck Garlic, Moscow, ID. OFRF funding awarded: $10,362, Spring 2008.
**Midwest Study Highlights Viability of Organic Certified Potato Seed Production**

Unlike most crops, potatoes are propagated from seed potatoes or tubers rather than from true seed. Infected potato plants transmit many pathogens to progeny through seed tubers, posing a significant disease management problem. Use of certified seed potatoes, which meet low tolerances for disease, significantly reduces tuber-borne diseases in potatoes and has measurable economic benefits for growers. The project goal was to assess the feasibility of certified seed potato production on organic farms in Wisconsin. Researchers evaluated two strategies aimed at reducing aphid landing within potato crops to limit the spread of Potato Virus Y (PVY), an aphid-transmitted virus which causes the majority of rejections from potato seed certification in the state. These strategies were: 1) surrounding seed potato plots with borders or intercrops of winter wheat (or intercrops of red clover); and 2) spraying potato plots with mineral oil. While the two years of field trials showed no effect of the two strategies for limiting the spread of PVY, researchers saw that the majority of potato lots met certification standards for PVY: 121 of 135 lots in 2007 (89.6%) and 100 of 118 lots in 2008 (84.7%), confirming that certified seed potato production is feasible for Wisconsin organic potato growers. For more information visit the orff.org > funded projects > disease management page. **Project title:** Organic certified potato seed production in the Midwest. **Investigator:** Amy Charkowski, University of Wisconsin-Madison, WI. **OFRF funding awarded:** $29,484, Spring 2008 and Spring 2007. *This project was funded in partnership with EPA Region 5.*

**Managing Natural Habitat Can Aid Organic Pest Control**

Maintaining a healthy population of beneficial insects that serve as natural enemies to crop pests is an important component of pest management for organic farmers. To gain benefits, an understanding of beneficial insect habitat requirements is needed. In this project, researchers worked with growers in the Salinas Valley and surrounding areas to understand how landscape factors around the farm contribute to natural pest control. The team selected 18 organic broccoli farms representing a gradient of landscapes ranging from less than 5% to more than 80% natural habitat within a 3 km radius of the farm. Cabbage aphids are a major broccoli pest, and in this study researchers focused on syrphid flies as natural enemies of cabbage aphid because their larvae are by far the most abundant aphid predator in broccoli. Project results demonstrated that natural habitat does indeed provide a pest control service to farms. This research has established that farms having a substantial amount (>50%) of natural habitat in the surrounding landscape have essentially double the biological pest control found on farms with less than 15% nearby natural habitat. For more information visit the orff.org > funded projects > pest management page. **Project title:** Determining habitat requirements for natural enemies of farm pests. **Investigator:** Rebecca Chaplin-Kramer, University of California, Berkeley, CA. **OFRF funding awarded:** $8,770, Spring 2008.

**Midwest Breeding Project Aims for Cold-Tolerant Sweet Corn**

In the upper Midwest, fresh market sweet corn is an important part of many diversified organic vegetable operations. Organic sweet corn growers face many challenges, including cold, wet soils that harbor seed-killing pathogens, weed competition, insect damage, and diseases. Organic farmers need varieties with superior cold germination, early vigor to out-compete weeds, husk protection against insects, disease resistance, and, of course, high eating quality. The purpose of this project is to develop sweet corn germplasm that answers these needs. In this project, the researchers worked within a participatory plant breeding model which allows the farmers to have complete control over the selection process. The primary objectives of this long-term project are to develop improved sweet corn germplasm for organic farmers, to evaluate the participatory plant breeding model, to improve farmer skills and involvement in on-farm breeding, and to train graduate students in participatory plant breeding for organic systems. While quantitative results were not obtained from the first two years of selections in 2008 and 2009, the team was encouraged by the progress made. Work will continue under the Northern Organic Vegetable Collaborative (NOVIC) for four more years. For more information visit the orff.org > funded projects > organic farming systems page. **Project title:** Participatory plant breeding to improve sweet corn for organic farmers. **Investigator:** William F. Tracy, University of Wisconsin-Madison, WI. **OFRF funding awarded:** $14,795, Fall 2008.
Education & Outreach Project Summaries

Pollinator Guide Helps Native Bees and Organic Farms

Wild pollinators can provide important pollination services for many food crops. Wild bees in particular can significantly augment, and sometimes even replace, pollination provided by the European honey bee. For some crops, wild bees are even more effective pollinators than their honey bee cousins. By understanding the landscape and conservation needs of wild bees and other native pollinators, organic farmers can manage wild pollinator habitat and enhance pollination services on their farms. The Xerces Society for Invertebrate Conservation has developed a comprehensive toolkit for native pollinator conservation on organic farms: Organic Farming for Bees — Conservation of Native Crop Pollinators in Organic Farming Systems, partially funded by OFRF. The toolkit provides materials designed to help organic farmers conserve native pollinators and take advantage of the crop pollination services they can provide. By establishing management protocols for wild bees, wild pollinators gain new opportunities for success and a new place in agricultural ecosystems. This is a win-win situation, providing growers with better pollination and new habitat for native species. The toolkit is available free on the OFRF website. For more information visit the ofrf.org > funded projects > farmer education page. Project title: Managing farm habitat for wild pollinators. Coordinator: Scott Black, The Xerces Society for Invertebrate Conservation, Portland, OR. OFRF funding awarded: $8,000, Fall 2008.

Canadian Organic Growers Releases New Organic Production Guide

Canadian Organic Growers (COG) has over the years developed many practical, high quality production guides for North American organic producers. Crop Planning for Organic Vegetable Producers, the latest addition to their Practical Skills Handbook series, was developed with support from OFRF and is now available from COG. Crop planning is complicated, but this handbook presents planning in manageable and logical steps, with good reasoning behind why each step is important and what will be gained by going through the process. It provides readers with how-to guidance including templates, examples, a case study running throughout, and real-life success stories. The book is co-authored by Frédéric Thériault and Daniel Brisebois, two of the five farmers who run Tourne-Sol Cooperative Farm near Montreal, Quebec. The farm has grown from 30 to 250 CSA customers plus farmers market sales. Crop planning has played a key role in the success of their operations. The handbook is available for $22. For more information visit the ofrf.org > funded projects > farmer education page. Project title: Crop Planning for Organic Vegetable Producers: A Practical Skills Handbook. Coordinator: Kristine Swaren, Canadian Organic Growers, Ottawa, ON, Canada. OFRF funding awarded: $7,125, Fall 2008.

Minnesota Reports Provide Real-World Data on Organic Farm Performance

Although the adoption of organic farming practices continues to grow at a great rate, assumptions and assertions, both positive and negative, about the profitability of organic farming persist. Real-world, farm-level data about organic farm performance are still scarce. Several years ago, a group of partners led by the Minnesota Department of Agriculture recognized that multiple audiences would benefit from access to data about organic farm performance: organic producers who want to assess their enterprise performance and benchmark against similar farms; conventional farmers who can use the information as they
consider whether to convert to organic; lenders who need data to evaluate loan requests; agencies, organizational leaders, and elected officials and their staff members who can use the information as they craft programs that address organic farmers’ experiences and needs. This project contributed to better understanding of the productivity and financial performance of nearly 75 fully organic and split-production farms in Minnesota. Two publications, 2007 Organic Farm Performance in Minnesota and 2008 Organic Farm Performance in Minnesota, delivered organic farm economic data into the hands of thousands of other interested farmers, researchers, lenders, and other decision makers across the country interested in learning more about the economics of organic farming. For more information visit the ofrf.org > funded projects > farmer education page. Project title: Organic Farm Performance in Minnesota Report. Coordinator: Meg Moynihan, Minnesota Dept. of Agriculture, Minneapolis, MN. OFRF funding awarded: $6,725, Spring 2008.

Organic Seed Production Guides Help Fill Knowledge Gap

A lack of quality and sufficient quantity of organic seed are recognized as weak links in organic systems and has resulted in ongoing exemptions from the National Organic Program seed regulations. While organic seed production is a developing industry and viable opportunity for organic growers, there is very little available information and educational support on organic seed production methods. Organic Seed Alliance (OSA) has released three new publications on the Principles and Practices of Organic Lettuce, Beet, and Carrot Seed Production. The three guides complement OSA’s other educational publications, filling a gap in information on organic seed production practices. Access to this information will increase the success of organic seed producers and the development of a vital organic seed market. The objective of the guides is to strengthen a weak link in organics by bridging an information gap in the methodology of organic seed production, thereby facilitating increased availability of quality organic seed. The guides are free and available on the web. For more information visit the ofrf.org > funded projects > farmer education page. Project title: Production guides for organic carrot, lettuce, and beet seed. Coordinator: Micaela Colley, Organic Seed Alliance, Port Townsend, WA. OFRF funding awarded: $13,614, Spring 2008.

Organic Farmers Flock to Farm Walk Series

Tilth Producers’ primary goal is to help Washington’s organic family farms thrive. Growers who understand how to farm organically — how to maintain soil and water quality, maintain biodiversity, meet national and state requirements, create value-added products, and how to market their products — will have better financial success and greater sustainability. Since 2004, Tilth Producers’ Farm Walk program has provided educational opportunities that provide research-based, localized, hands-on training to Washington organic and aspiring organic growers. In 2009, the 6th Annual Farm Walk series continued to provide unique peer-learning opportunities to Washington growers by convening farmers and researchers to discuss topics identified by organic farmers as a priority for education. The Farm Walks drew more than five hundred organic farmers and others interested in learning more about the diverse organic farming operations throughout Washington State. A resource booklet was created before each farm tour that included information about the host farm, specific agricultural issues under consideration at that farm, and current, relevant research. For more information visit the ofrf.org > funded projects > farmer education page. Project title: Tilth Producers of Washington Farm Walks. Coordinator: Nancy Allen, Tilth Producers of Washington, Seattle, WA. OFRF funding awarded: $6,100, Spring 2008.
In the first half of 2010, the agriculture news beat could not stop writing about plans for the next farm bill — just two years after enacting the current law. Fueled by comments and plans from then House Agriculture Committee Chairman Rep. Collin Peterson (D-MN), farmers testified at field hearings, witnesses took the stand on Capitol Hill, and interest groups across the country began making plans and demands for the 2012 Farm Bill. The longer Congress waited, Peterson’s reasoning went, the harder it would be to find and keep the existing money to fund a new bill.

Plans for an early farm bill stopped short with the November 2010 elections and the change of political party power in the House of Representatives. The new House Agriculture Committee Chairman, Oklahoma Republican Rep. Frank Lucas, says he is in no rush to write a new farm bill in 2011. He has said, however, that he may initiate a new round of hearings. The Senate, which usually acts after the House, never had as ambitious a timeline as Rep. Peterson did.

Regardless of the political party in power, the biggest factor framing the next farm bill debate will be money — and the lack of it. Faced with a $1.2 trillion deficit and a boisterous Tea Party movement, lawmakers will likely balk at funding new farm bill initiatives and may cut existing farm programs.

Organic by the numbers

What does this tough budget climate mean for organic agriculture? Let’s crunch some numbers.

Total federal spending in 2010 was projected at approximately $3.6 trillion. The majority of these funds support defense programs, social security, Medicare, Medicaid, and the Children’s Health Insurance Program. In 2010, the U.S. Department of Agriculture’s budget was approximately $134 billion — or 3.7 percent of the total federal budget. Within the USDA’s budget, organic agriculture accounted for less than one percent. While organic may be small potatoes in the bigger budget picture, it is not shielded from spending cuts.

In addition to the difficult budget environment, funding for organic programs, as well as many local and regional food system, beginning farmer and rancher, and rural development initiatives, is threatened because funds for these programs are slated to expire in 2012. Finding money to continue existing funding will be a tremendous challenge. Growing support for organic agriculture will require lots of farmer involvement if the case for funding organic is to be won.

What programs are threatened?

Organic programs that will run out of funding next year include:

- **Organic Agriculture Research and Extension Initiative**: This is USDA’s flagship competitive grants program dedicated to organic research and extension activities. The program funds research projects on organic agricultural systems, ranging from improving weed management and developing organic seed to enhancing environmental sustainability and carbon sequestration on organic farms. The program is very competitive and each year funds only a small percentage of eligible proposals. Currently funded at $20 million annually, this research program must grow to keep pace with organic sector expansion.

- **National Organic Certification Cost-share Program**: This program helps certified organic farmers and handlers offset the costs of certification by providing a small reimbursement of no more than $750 per year. Now funded at $22 million over 5 years, this popular program will need new money to help farmers and processors continue to gain certification.

- **Organic Production and Market Data Initiatives (ODI)**: A small but significant initiative, ODI received $5 million over five years in the last farm bill to fund...
basic USDA data collection on the organic sector. Activities funded include the 2008 Organic Production Survey, the first-ever comprehensive survey of organic agriculture in the U.S., economic reports, and price reporting for organic commodities. Data collection that is on par with the services provided to conventional producers must continue for organic agriculture.

In addition to these programs, Congress in the 2008 Farm Bill recognized organic farms as conservation systems and included organic in two working lands conservation programs: the Environmental Quality Incentives Program (EQIP) and the Conservation Stewardship Program (CSP). Through EQIP, USDA launched the Organic Initiative, an effort to open the program to organic and transitioning farmers by supporting the implementation of conservation practices relevant to organic systems. Many times in the past, EQIP and CSP have been targeted for cuts. With money tight, the threat will only intensify.

**Why should I care about these programs?**

Organic agriculture is primarily a market-driven phenomenon led by conscientious consumers and fueled by dedicated farmers who, despite obstacles and strong incentives to do otherwise, have persisted and thrived. Organic farmers are among society’s agricultural entrepreneurs, leading innovation in their trade and designing the agricultural systems of the future.

Ultimately, protecting and growing funding for organic programs means supporting the nuts and bolts that allow for that entrepreneurship, innovation, and growth. A strong investment in research underpins the growth in any industry — organic included. The same goes for data collection and price reporting in the sector. The resulting data makes it easier for organic farmers to qualify for crop insurance, obtain farm loans, and buy or rent land.

Organic farmers do not get subsidies for being organic, and most organic farmers are proud that they run profitable operations without federal subsidies. The programs listed above help to overcome some of the information and transition barriers to successful organic production. They also take a step in the direction of overcoming the gross inequalities in support and funding between organic and non-organic agriculture.

**Why can’t we just take the money from farm subsidies?**

One of the ugly parts of the policy making process is that nearly everything becomes a trade-off. Unless you’re a big industry wielding the big bucks, you cannot have your pie and eat it, too. There is always someone else who wants to eat part or all of your pie or maybe just make a different pie. Then there are those who don’t care about pie at all and want some other food made with dairy and pork ingredients (likely not organic). Your pie, should it even reach the oven, will likely be an afterthought in an elaborate feast. And let’s not speak of the number of cooks in the kitchen.

When we look at the comparatively miniscule funding levels dedicated to organic, and we look at the several billions of dollars the agency hands out in subsidies to conventional commodity growers, it is natural to wonder why a small part of those billions cannot support organic activities. The thing is, big ag wields big bucks for corn, soybeans, and other commodities. So far, the cooks in the Congressional kitchen seem unable to stop supporting big ag and have made scant room at the table for organic agriculture.

It is too soon to tell whether or not farm subsidies will land on the chopping block. To his credit, Rep. Peterson saw the deficit problem emerging and was studying proposals to reform subsidy programs. But with the Republican leadership on the House Agriculture Committee in strong support of continuing subsidies, it appears unlikely that there will be reform in subsidy policy. Another unknown is whether or not the Tea Party’s anti-government spending rhetoric will spill over into the farm subsidy debate. If there are subsidy cuts, it will likely be because there are cuts mandated across the board, so instead of a trade-off involving only agriculture programs, the trade-off will be between continuing all sorts of programs and reducing the deficit.

**What can I do to support organic agriculture through tough budget times?**

At the Organic Farming Research Foundation, we work to protect and grow organic, but we could never do it alone. Please join the Organic Farmers Action Network (OFAN) today so you can take action to support the gains organic has made. OFAN is a free service that provides information and action alerts about current organic policy issues and opportunities to advocate for organic. OFRF successfully activates its network of farmers and supporters through OFAN, the collective voice of the organic agriculture movement.

As always, we need your help to advance organic agriculture, especially as we approach the 2012 Farm Bill. You can sign up for OFAN by filling out and mailing back the pamphlet in this Information Bulletin or by linking to this page on our website: [http://ofrf.org/action/action.html](http://ofrf.org/action/action.html)
In 2010, The Organic Farming Research Foundation invested $147,138 to gain new organic knowledge.

Grants Awarded by OFRF Spring 2010
Total in competitive grants awarded: $97,105

Research projects
Carol Shennan
3-year grant for $49,132
University of California, Santa Cruz
Integrated soil-borne disease and weed management for organic strawberries.
Funded in partnership with Stretch Island Fruit Company

Sean Swezey $14,235
University of California, Santa Cruz
Integrating biological control in organic Brussels sprouts.

Education/outreach projects
Jennifer Miller $5,100
Northwest Coalition for Alternatives to Pesticides
Boise, Idaho
Expanding farmer-to-farmer learning for Idaho’s organic farmers.

John Tooker $13,638
Pennsylvania State University
University Park, Pennsylvania
Enhancing insect-pest management using cultivar mixtures.

Carol Shennan $49,132
University of California, Santa Cruz
Integrated soil-borne disease and weed management for organic strawberries.
Funded in partnership with Stretch Island Fruit Company

Ray Hicks $2,152
Screven Co. Cooperative Extension
Sylvania, Georgia
Organic cover crop seed production as a sustainable enterprise for the Southeast, year 2.

Jonathan Spero $8,060
Lupine Knoll Farm
Williams, Oregon
Creating two open-pollinated, sugary enhanced sweet corn varieties.

Jo Ann Baumgartner $15,000
Wild Farm Alliance
Watsonville, California
Co-managing biodiversity conservation and food safety on organic farms.

Grants Awarded by OFRF Fall 2010
Total in competitive grants awarded: $50,033

All Fall 2010 grants were made in partnership with the Clif Bar Family Foundation under the Seed Matters funding initiative.

Research projects
Kevin Murphy $14,177
Washington State University
Pullman, Washington
Farmer-based participatory plant breeding for quinoa, buckwheat, and spelt.

Ray Hicks $2,152
Screven Co. Cooperative Extension
Sylvania, Georgia
Organic cover crop seed production as a sustainable enterprise for the Southeast, year 2.

Jonathan Spero $8,060
Lupine Knoll Farm
Williams, Oregon
Creating two open-pollinated, sugary enhanced sweet corn varieties.

Education/outreach projects
Micaela R. Colley $14,815
Organic Seed Alliance
Port Townsend, Washington
Four organic breeding guides: An Introduction to Organic Breeding, and Organic Breeding for Sweet Corn, Carrots, and Tomatoes.

James Nienhuis $11,129
University of Wisconsin-Madison
Madison, Wisconsin
Reducing risk associated with organic snap bean production in Wisconsin.
Together, We Will Grow Our Organic Future.

Twenty years ago, organic farmers faced a huge roadblock. Research into organic production systems was nonexistent. Farmers like California kiwi grower Mark Nielson found themselves struggling to adapt conventional research to organic farms. “It was a hard row to hoe,” says Nielson, “because we were trying to adapt information from conventional systems, with limited success.”

But Nielson and a handful of other agricultural innovators did not give up. Instead, they created the Organic Farming Research Foundation to give farmers the production and marketing tools they need to grow good organic food.

Your investment in OFRF funds our work to help organic farmers thrive.

Their visionary work paid off. The number of organic farmers has grown from about 3,000 in 1993 to 14,500 today. The number of certified organic acres has climbed to 4.1 million acres. This thriving organic movement means more organic food for all of us, less damage to the environment, stronger organic family farms, and more vibrant rural communities.

In the coming year, we will intensify our efforts to develop organic seeds and breeds to improve organic production. We will document the many benefits organic farming provides to our farms, the environment, our communities, and our families. We will call on Congress to invest in organic like never before. Your voice, your leadership, and your support are key elements to our success.

We invite you to join us in this crucial work. Invest in OFRF today. Together we will grow our organic future.

Mark Nielson, Organic Grower

Invest in OFRF Today
to donate online, visit our website OFRF.org

Yes! I will help grow our organic future.

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Or visit ofrf.org to make your donation online
OFRF solicits proposals for research to improve production systems and for education/outreach projects targeted primarily at organic farmers and ranchers. Funding is available to fund research or education/outreach projects on any agricultural production, social, economic, or policy-related topic of concern to organic farmers and/or ranchers.

Special funding is also available for projects in the categories of organic seed quality or crop breeding thanks to a partnership with the Clif Bar Family Foundation.

OFRF encourages farmers, ranchers, and extension personnel to consider applying for funding. We particularly encourage partnerships between farmers and ranchers and professional researchers.

Proposals are considered twice a year. The next deadlines will be May 16 and November 15, 2011. Proposals may now be submitted electronically.

Details on applying are available through the OFRF website at http://ofrf.org/grants/apply.html, or contact Grants Program Director Jane Sooby by phone at 831-426-6606 or by email at jane@ofrf.org.