



Organic AG NEWSLETTER

ORGANIC RESEARCH IN IOWA

Iowa State University's Organic Ag Program:

Iowa State University's (ISU) Organic Ag Program (OAP) began 24 years ago, with one of the first tenured faculty positions at a Land-Grant University focused exclusively on organic agriculture. With the support and help of Iowa's dedicated organic farmers, the program has gained international recognition, with over 150 articles posted on the webpage: <http://extension.agron.iastate.edu/organicag/>

The 2020 and 2021 Field Seasons: Organic Fields Demonstrate Resilience:

The research focus in the OAP has been on nutrient management through crop rotations, cover crops, and livestock integration, along with pest management strategies. In the stressful season of 2020, hit by an inland hurricane (derecho), drought, and COVID concerns, the 23-year-old Long-Term Agroecological Research (LTAR) site in Greenfield, Iowa, demonstrated organic corn yields in the corn-soybean-oat/alfalfa-alfalfa rotation far exceeding the conventional corn-soybean rotation, coming in at 159 bu/acre versus 135 bu/acre in the conventional corn. Organic and conventional soybeans were equivalent at 49 bu/acre. Organic oats ranged from 78 to 107 bu/acre, with greater yields in the longer, more diverse rotation. In 2021, organic oats averaged 111 bu/acre, with higher yields of 137 bu/acre in a 4-yr rotation field. An overview of economic data from the 2014–2018 LTAR seasons, depicted in the virtual Field Day, showed a \$400 per acre greater return in the organic corn–soybean–oat/alfalfa–alfalfa rotation over the conventional corn-soybean rotation. Because the pandemic prevented ISU from holding in-person field days at research farms, a Virtual Organic Field Day was organized to provide a research update and is available here and on the Flanagan State Bank website: https://youtu.be/P_PpIV5EmT4

Weed-Zapper™ Increases Organic No-Till Soybean Yields:

Among the many research projects is the Organic No-Till project, which features organic vegetables in rolled hairy vetch and rye to provide weed management and enhance soil quality, and an on-farm project hosted by the Levi Lyle Farm in Keota, Iowa, where soybeans were planted into rolled rye, comparing two types of rollers, and using a Weed Zapper™ in half of the plots. Yields were greater (56 bu/acre) in weed-zapped organic no-till soybean plots compared to rolled only (33 bu/acre). The Weed Zapper™ is especially useful for over-the-canopy weeds. We are repeating this experiment in 2022.

Iowa Organic Conference Plans for In-Person Event on November 29:

The 21st Annual Iowa Organic Conference will be held on Monday, November 29, at the University of Iowa, barring no new COVID-19 regulations for disallowing indoor events. Participants can register for the event at <https://www.regcytes.extension.iastate.edu/iowaorganic/>. The conference is a joint activity between the ISU OAP and the UI Office of Sustainability. The 2021 theme is mitigating climate change with organic practices, and the keynote speaker, Dr. Jessica Shade, of The Organic Center, will provide evidence of organic benefits. The gourmet organic luncheon, and the trade show of vendors, including organic grain buyers, organic seed purveyors, local food system non-profits, and government offices working with transitioning and certified organic farmers, are always highlights of the conference.

For additional conference information or anything organic, contact:

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NOV 2021

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FSB LOCATIONS

301 W. Falcon, Flanagan

403 State, Benson

2401 E. Washington,
Bloomington

111 N. Fayette, El Paso

500 S. Persimmon, Le Roy

208 E. Gridley, Gridley

NUTRIENT TESTS FOR ORGANIC GROWERS

Crop yields are the result of the interaction of crop genetics with environmental factors. One of the big environmental factors that influence crop yields is the availability of crop nutrients to the plant. Many factors affect nutrient availability and not all of them can be predicted. Soil tests are an imperfect snapshot of nutrient availability at a given point in time. Imperfect as they may be, they are still one of the best means of predicting what nutrients will be available to grow the crop. Using soil test information gives a grower a chance to prioritize spending money on crop inputs that will likely increase yields and profits.

NPK, nitrogen, phosphorus, and potassium are known as the big 3 in crop fertility because they are required in the greatest amount and will punish the grower the most with disappointing yields if they are in short supply. It is commonly believed that there are at least 16 essential nutrients needed by crops and many people say more than 16. Each one plays a role in the function of the plant and plant performance will be impaired if any are lacking. Many nutrients rely on the presence of other nutrients to be able to carry the necessary plant functions. They work together synergistically in the plant.

Soil testing for these important nutrients does provide some basis for predicting their availability to the crop, though many factors affect nutrient availability. Soil testing can be confusing because there are so many different labs that use different extracts and methods in their testing. There is no one test that is best for all nutrients in all soils. It is more important to trust the person analyzing the results than it is to choose "the best" lab. Most crop consultants get familiar with the tests from a lab they are comfortable with and become proficient at making recommendations based on tests from a particular lab. They are likely not near as proficient if asked to make recommendations from a different lab, especially if the procedures and methods used vary widely between the labs. It is important to choose a consultant that is familiar with organic production.

Most basic tests include testing for phosphorus, potassium, calcium magnesium, and pH. It usually costs extra to test for micronutrients. However, organic producers are required to prove a nutrient deficiency before they are allowed to use most micronutrients, which are synthetic and therefore restricted in their use.

Micronutrient deficiencies can be proved by soil or tissue tests and some certifiers allow visual symptoms as evidence of a micronutrient deficiency. I encourage all growers to test for micronutrients, so that they may be applied if needed. I also believe it is important for the organic industry to make sure growers' crops have adequate plant nutrition. Organic growers are paid a premium on the basis that they are providing a premium product. Growing nutrient-dense foods is vital to maintaining consumer trust and confidence going forward. Trust is needed to assure that organic growers can continue to garner premium prices for their crops.

Here is a link to the Illinois Soil Testing Association that has a list of certified labs. - [Home \(soiltesting.org\)](http://soiltesting.org)

Soil Testing Locations

A & L Analytical
Laboratories, Inc.
2790 Whitten Road
Memphis, TN 38133
Tel: 901-213-2400

A & L Great Lakes
Laboratories, Inc.
3505 Conestoga Dr.
Ft. Wayne, IN 46808
Tel: 260-483-4759

A & L Heartland
Laboratories, Inc.
111 Linn St.
Atlantic, IA 50022
Tel: 901-213-2400

AgSource Cooperative Services
106 N. Cecil St.
Bonduel, WI 54107
Tel: 715-758-2178

The Climate Corporation,
Solum Labs
615 S. Bell Avenue
Ames, IA 50010
Tel: 515-505-102

Charter Soil Testing
304 W. Taylor Street
Dwight, IL 60420
Tel: 309-838-0559

GMS Laboratories, Inc.
23877 E. 00 North Road
Cropsey, IL 61731
Tel: 309-377-2851

Ingram's Soil Testing Center
13343 Fitschen Road
Athens, IL 62613
Tel: 217-636-7500

Key Agricultural Services Inc.
114 Shady Lane
Macomb, IL 61455
Tel: 309-833-1313

KSI Laboratories
202 S. Dacey Dr.
Shelbyville, IL 62565
Tel: 217-774-2421

Midwest Laboratories
13611 B Street
Omaha, NE 68144
Tel: 402-679-4745

Rock River Laboratory, Inc.
PO Box 169
710 Commerce Dr.
Watertown, WI 53094
Tel: 920-261-0446

SGS Laboratory, Inc., Belleville
1511 E. Main
Belleville, IL 62221
Tel: 618-233-0445

SGS North America, Toulon
117 E. Main St.
Toulon, IL 61483
Tel: 309-286-2761

Southern Illinois Ag Solutions Inc.
1705 State Rt. 161
Centralia, IL 62801
Tel: 618-533-0758

Spectrum Analytic
1087 Jamison Road
Washington Court House, OH 43160
Tel: 740-335-1562

Sure-Tech Labs
2435 Kentucky Ave., Building #6
Indianapolis, IN 46221
Tel: 317-243-1502

United Soils, Inc.
108 S. Crystal Lane
Fairbury, IL 61739
Tel: 815-692-2626

Waters Agricultural Laboratories
2101 Calhoun Road-Hwy 81
Owensboro, KY 42301
Tel: 270-685-4039

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News Release

3500 Wabash Ave.
Springfield, Illinois 62711
Release No. 21-53

Contact:
FPAC.BC.Press@usda.gov

USDA Accepting Applications to Help Cover Costs for Organic Certification

SPRINGFIELD, Illinois, August 17, 2021 – Organic producers and handlers can now apply for U.S. Department of Agriculture (USDA) funds to assist with the cost of receiving or maintaining organic certification. Applications for the [Organic Certification Cost Share Program](#) (OCCSP) are due November 1, 2021.

“USDA is here to help all producers, including those who grow our nation’s organic food and fiber. Many farmers have told us that cost was a barrier to their ability to get an organic certification,” said Zach Ducheneaux, administrator of USDA’s Farm Service Agency (FSA). “By assisting with the costs, this program can help organic farmers get their certification along with the benefits that come with it.”

OCCSP provides cost-share assistance to producers and handlers of agricultural products for the costs of obtaining or maintaining organic certification under the USDA’s National Organic Program. Eligible producers include any certified producers or handlers who have paid organic certification fees to a USDA-accredited certifying agent during 2021 and any subsequent program year. Producers can be reimbursed for expenses made between October 1, 2020 and September 30, 2021 including application fees, inspection costs, fees related to equivalency agreement and arrangement requirements, travel expenses for inspectors, user fees, sales assessments, and postage.

For 2021, OCCSP will reimburse 50% of a certified operation’s allowable certification costs, up to a maximum of \$500 for each of the following categories (or “scopes”):

- crops
- wild crops
- livestock
- processing/handling
- State organic program fees.

Organic farmers and ranchers may apply through an FSA county office or a participating state agency.

This funding will be complemented by an additional \$20 million for organic and transitioning producers through the Pandemic Assistance for Producers initiative. More information on that funding will be available in the coming weeks.

More Information

To learn more about organic certification cost share, please visit the [OCCSP webpage](#), visit usda.gov/organic, or contact your [local USDA Service Center](#).

In the Biden-Harris Administration, the USDA is transforming America's food system with a greater focus on more resilient local and regional food production, fairer markets for all producers, ensuring access to safe, healthy, and nutritious food in all communities, building new markets and streams of income for farmers and producers using climate-smart food and forestry practices, making historic investments in infrastructure and clean energy capabilities in rural America, and committing to equity across the Department by removing systemic barriers and building a workforce more representative of America. To learn more, visit <http://www.usda.gov>.

USDA is an equal opportunity provider, employer and lender.

FARM STORAGE FACILITY LOAN (FSFL) PROGRAM

The Farm Service Agency offers the FSFL Microloan Program. The maximum amount of the loan shall not exceed an aggregate outstanding FSFL balance of \$50,000. A nonrefundable \$100 application fee per borrower is required per FSFL microloan request. A financial analysis is required for all FSFL microloan requests except when the loan will be secured with an Irrevocable Letter of Credit. The borrower is required to provide a down payment of 5 percent of the eligible net costs. They have the availability to self-certify to the storage need. The FSFL microloan shall have a maximum term of 3, 5, or 7 years for new and 3 or 5 years for used storage structures, equipment, and storage and handling trucks. All FSFL financed equipment, structures, and storage and handling trucks (new or used) must have useful life for at least the FSFL term. Loans can be made to purchase augers, circulation fans, conveyors, dryers, dump carts, food safety-related equipment (such as sanitizing or prewashing filter tanks), forklifts, fruit and/or vegetable hoppers, generators, grain bins, gravity flow wagons, storage and handling trucks, and walk-in coolers. The equipment listed is a partial listing of eligible items that qualify for FSFL funding.

Existing structures for all FSFL eligible commodities are eligible for FSFL renovations as long as all requirements are met. Authorized loan terms for FSFL renovations are 3 and 5 years only. FSFL's may be approved for components of used or preowned structures that are purchased and/or moved to a new location. Allowable net cost items are purchase of the used or preowned structure, site preparation, foundation material and off-farm labor, off-farm labor to erect the used or preowned structure, doors, roof panels, and rings needing replacement, dryer systems and installation. It is important to note - the producer is responsible for the costs to disassemble and move the structure.

Please contact your local FSA County Office with questions regarding applying for the FSFL program.

(cont. pg. 5-6)

BECK'S HYBRIDS PRACTICAL FARM RESEARCH – GREAT HARVEST ORGANICS STUDIES

As farmers diversify their operations to stay competitive in today's market, organic production continues to provide an opportunity to increase profitability on the farm. Beck's Hybrids recognized the potential in organics in 2002 with the creation of its organic product line Great Harvest Organics, providing corn, soybean, and wheat seed to farmers across the U.S. Not only did Beck's see a need for high-quality organic seed, but they also saw a need for research of organic production practices and products. For 2021, Beck's Practical Farm Research is conducting five organic corn studies and five organic soybean studies. Let's start with studies that were also conducted last year.

Organic Plant Health Study

While there are many products that improve plant health the list is limited for those that are OMRI (Organic Materials Review Institute) approved. The purpose of this study is to evaluate different organic products and their effect on yield and profitability. Pacesetter™ is a bio-based plant health product and BRANDT® Organics Crop Mix is a micronutrient blend. This study is being done on both corn and soybeans. Both products have provided a positive ROI over the last two years of testing.

2020 RESULTS - CORN

TREATMENTS	PERCENT MOISTURE	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control	24.1	217.1	--	--
13 oz. Pacesetter™ @ VT	24.3	226.5	+9.4	+\$65.40
2 qt. BRANDT® Organics Crop Mix @ V4	24.5	222.8	+5.7	+\$41.30
Corn \$8.00/Bu. BRANDT® Organics Crop Mix \$8.60/gal. Pacesetter™ \$96.50/gal. These results are based on the disclosed study parameters and participating sites.				

(<https://www.beckshybrids.com/pfresearch/Detail/ArtMID/1316/ArticleID/3256/2020-Indiana-Corn-Organic-Product-Study>)

(cont. pg. 7)

2020 RESULTS - SOYBEANS

TREATMENTS	PERCENT MOISTURE	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control	14.1	58.3	--	--
13 oz. Pacesetter™ @ R3	13.5	60.5	+2.2	+\$34.20
2 qt. BRANDT® Organics Crop Mix @ V4	14.1	58.9	+0.6	+\$7.70
Soybeans \$20.00/Bu. BRANDT® Organics Crop Mix \$8.60/gal. Pacesetter™ \$96.50/gal. These results are based on the disclosed study parameters and participating sites.				

(<https://www.beckshybrids.com/pfresearch/Detail/ArtMID/1316/ArticleID/3285/2020-Indiana-Soybean-Organic-Product-Study>)



Farm Service Agency

Farm Storage Facility Loans

Fact Sheet
January 2021

OVERVIEW

Farm Storage Facility Loans (FSFLs) provide low-interest financing for producers to store, handle and/or transport eligible commodities they produce. This includes the following:

- Acquire, construct or upgrade new or used, portable or permanently affixed, on-farm storage and handling facilities;
- Acquire new or used storage and handling trucks; and
- Acquire portable or permanently affixed storage and handling equipment.

The program is administered by the U.S. Department of Agriculture (USDA) Farm Service Agency (FSA).

A producer may borrow up to \$500,000 per loan, with a minimum down payment of 15 percent. Loan terms are up to 12 years, depending on the amount of the loan. Producers must demonstrate storage needs based on three years of production history. FSA also provides a microloan option that, while available to all eligible farmers and ranchers, also should be of particular interest to new or small producers where there is a need for financing options for loans up to \$50,000 at a lower down payment with reduced documentation.

Applicants for all loans will be charged a nonrefundable \$100 application fee.

MICROLOAN OPTION

Producers who select the microloan option can borrow up to \$50,000, with the minimum down payment reduced to 5 percent and shorter loan terms. Producers can self-certify the storage needs of the eligible commodity and are not required to demonstrate storage needs based on production history.

How It Works

ELIGIBLE COMMODITIES

The following commodities are eligible:

- Corn, grain sorghum, rice, soybeans, oats, peanuts, wheat, barley or minor oilseeds harvested as whole grain;

- Corn, grain sorghum, wheat, oats or barley harvested as other-than-whole grain;
- Other grains (triticale, speltz and buckwheat);
- Pulse crops (lentils, chickpeas and dry peas);
- Hay;
- Honey;
- Renewable biomass;
- Fruits (includes nuts) and vegetables - cold storage facilities;
- Floriculture;
- Hops;
- Malted small grains;
- Maple sap;
- Maple syrup;
- Milk;
- Cheese;
- Butter;
- Yogurt;
- Eggs;
- Meat/poultry (unprocessed);
- Rye; and
- Aquaculture;
- Hemp;
- Seed Cotton;
- Wool.

ENVIRONMENTAL EVALUATION REQUIREMENTS

These loans **must** be approved by the local FSA state or county committee before any site preparation and/or construction can be started.

All loan requests are subject to an environmental evaluation. Accepting delivery of equipment, starting any site preparation or construction before loan approval may impede the successful completion of an environmental evaluation and may adversely affect loan eligibility.



**FARM STORAGE FACILITY LOANS - JANUARY 2021****ELIGIBLE FACILITIES, EQUIPMENT AND UPGRADES**

The following types of new/used facilities and upgrades are eligible and must have a useful life for at least the term of the loan:

- Conventional cribs or bins;
- Oxygen-limiting structures and remanufactured oxygen-limiting structures;
- Flat-type storage structures;
- Electrical equipment and handling equipment, excluding the installation of electrical service to the electrical meter;
- Safety equipment, such as interior and exterior ladders and lighting;
- Equipment to improve, maintain or monitor the quality of stored grain;
- Concrete foundations, aprons, pits and pads, including site preparation, off-farm labor and material, essential to the proper operation of the grain storage and handling equipment;
- Renovation of existing farm storage facilities, under certain circumstances, if the renovation is for maintaining or replacing items;
- Concrete foundations, aprons, pits and pads, including site preparation, off-farm labor and material, essential to the proper operation of the grain storage and handling equipment;
- Renovation of existing farm storage facilities, under certain circumstances, if the renovation is for maintaining or replacing items;
- Grain handling and grain drying equipment determined by the Commodity Credit Corporation to be needed and essential to the proper operation of a grain storage system (with or without a loan for the storage facility);

- Structures that are bunker-type, horizontal or open silo structures, with at least two concrete walls and a concrete floor;
- Structures suitable for storing hay built according to acceptable design guidelines;
- Structures suitable for storing renewable biomass;
- Bulk tanks for storing milk or maple sap;
- Cold storage buildings, including prefabricated buildings that are suitable for eligible commodities. Also may include cooling, circulating and monitoring equipment and electrical equipment, including labor and materials for installation of lights, motors and wiring integral to the proper operation of a cold storage facility; and
- Storage and handling trucks, including refrigerated trucks.

WHO IS ELIGIBLE?

An eligible borrower is any person who is a landowner, landlord, leaseholder, tenant or sharecropper. Eligible borrowers must be able to show repayment ability and meet other requirements to qualify for a loan. Contact an FSA office for more details.

WHERE TO FILE THE APPLICATION

Loan applications should be filed in the administrative FSA county office that maintains the farm's records.

FOR MORE INFORMATION

For more information, visit farmers.gov/recover. Find your local USDA Service Center at farmers.gov/service-center-locator. This fact sheet is for informational purposes only; other eligibility requirements or restrictions may apply.

Other examples of equipment include but are not limited to the following:

<ul style="list-style-type: none"> • baggers • boxers • brush polishers • bulk bin tippers • case palletizers • cement flooring • circulation fans • cold dip tanks • conveyors • drying tunnels • dumpers 	<ul style="list-style-type: none"> • electrical equipment • food safety-related equipment • hoppers • hydrocoolers • hydrolifts • ice machines • quality graders • refrigeration units or systems • roller creepfeeders • roller spray units 	<ul style="list-style-type: none"> • safety equipment meeting Occupational Safety and Health Administration requirements • sealants • sizers • sorting bins and/or tables • storage and handling trucks • washers • waxers • weight graders
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Notes:

- Eligible storage structures and handling equipment, having a useful life for the entire term of the loan, may be permanently affixed or portable.
- Facilities built for commercial purposes and not for the sole use of the borrower(s) are not eligible for financing.

Organic Nitrogen Management Study

Organic production relies heavily on animal manures and nutrient cycling from cover crops to provide nutrients for cash crops. Beck's PFR is applying chicken litter ahead of corn but is there enough available nitrogen or is there a benefit from adding more readily available nitrogen. The purpose of this study is to evaluate Chilean nitrate, applied at various timings, and its effect on yield and profitability. Beck's PFR is using Allganic™ Nitrogen Plus 15-0-2, which is a water-soluble pelletized sodium nitrate, and is making applications at planting with a 2x2x2 system, sidedress at V4, and at VT with 360 Y-DROP®. The results from last year did show a positive yield increase with each treatment, but the ROI was not positive with each treatment.

2020 RESULTS

TREATMENTS	PERCENT MOISTURE	BU./A.	BU./A. DIFFERENCE	RETURN ON INVESTMENT
Control: 2 Ton/A. Chicken Litter	28.3	209.9	--	--
Control + 50 lb. Allganic™ Nitrogen Plus 15-0-2 2x2x2 + 100 lb. Allganic™ Nitrogen Plus 15-0-2 @ V4	28.5	220.9	+11.0	+\$13.00
Control + 100 lb. Allganic™ Nitrogen Plus 15-0-2 @ V4 + 100 lb. Allganic™ Nitrogen Plus 15-0-2 360 Y-DROP® @ VT	28.5	222.0	+12.1	-\$3.20
Control + 50 lb. Allganic™ Nitrogen Plus 15-0-2 2x2x2 + 100 lb. Allganic™ Nitrogen Plus 15-0-2 @ V4 + 100 lb. Allganic™ Nitrogen Plus 15-0-2 360 Y-DROP® @ VT	28.7	225.9	+16.0	+\$3.00
Corn \$8.00/Bu. Allganic™ Nitrogen Plus 15-0-2 \$0.50/lb. These results are based on the disclosed study parameters and participating sites.				

(<https://www.beckshybrids.com/pfresearch/Detail/ArtMID/1316/ArticleID/3255/2020-Indiana-Corn-Organic-Nitrogen-Management-Study>)

Organic Transition Study

The purpose of this study is to evaluate different cropping systems when transitioning to organic production. The transition period is 36 months with no application of prohibited materials prior to the first harvest of organic crops. For this study, Beck's is comparing the net returns of staying in a GMO system vs. using a non-GMO crop during the transition period. One of the more common ways to transition to organic is to plant alfalfa. This study is being done on corn and soybeans.

2020 RESULTS - CORN

TREATMENTS	PLANTING DATE	PLANTED POPULATION	PERCENT MOISTURE	YIELD	NET RETURN
Control: GMO Corn +L® (XL® 6282AM™ brand)	May 2	34,000 Seeds/A.	17.6	227.9	\$519.29
Non-GMO Corn Transition Crop +L® (XL® 6282™ brand)	May 26	30,000 Seeds/A.	25.9	177.4	\$265.52
Non-GMO Alfalfa Transition Crop (Leaf Guard II)	May 2	25 lb./A.	--	66 square bales/A. (2 cuttings total)	\$91.00
GMO Corn \$3.72/Bu. Non-GMO Corn \$4.07/Bu. Alfalfa \$5.50/square bale. GMO Corn Input/Application Costs \$328.50/A. Non-GMO Corn Input/Application Costs \$456.50/A. Alfalfa Input/Application Costs \$272.00/A. These results are based on the disclosed study parameters and participating sites.					

(<https://www.beckshybrids.com/pfresearch/Detail/ArtMID/1316/ArticleID/3258/2020-Indiana-Corn-Organic-Transition-Study>)

2020 RESULTS - SOYBEANS

TREATMENTS	PLANTING DATE	PLANTED POPULATION	PERCENT MOISTURE	YIELD	NET RETURN
Control: GMO Soybeans (3546FP)	May 2	130,000 Seeds/A.	12.9	74.0	\$514.53
Non-GMO Soybeans Transition Crop (350)	May 26	130,000 Seeds/A.	12.5	65.3	\$569.60
Non-GMO Alfalfa Transition Crop (Leaf Guard II)	May 2	25 lb./A.	--	66 square bales/A. (2 cuttings total)	\$91.00
GMO Soybeans \$9.13/Bu. Non-GMO Soybeans \$10.63/Bu. Alfalfa \$5.50/square bale. GMO Soybeans Input/Application Costs \$161.09/A. Non-GMO Soybeans Input/Application Costs \$124.54/A. Alfalfa Input/Application Costs \$272.00/A. These results are based on the disclosed study parameters and participating sites.					

(<https://www.beckshybrids.com/pfresearch/Detail/ArtMID/1316/ArticleID/3365/2020-Indiana-Soybean-Organic-Transition-Study>)

Now, let's take a look at the studies that are new for this year. (cont. pg. 8)

Organic Insecticide Study- Corn Borer

According to the USDA, Bt corn accounted for 82% of the corn acres in the U.S. in 2020. Genetically modified corn that contains genes from the bacteria Bt (*Bacillus thuringiensis*), which produces proteins that are toxic to certain insects, can't be used in organic production. However, the Bt bacteria is naturally occurring and can be applied to crops. The purpose of this study is to evaluate an organic insecticide for corn borer protection and its effect on yield and profitability. Foliar applications were made after the first-generation hatch and again after the second-generation hatch.

Organic Weed Suppression/Tillage Study

Without the use of herbicides, the issue of weed control becomes much more critical in an organic system. Many years ago, the moldboard plow was a popular piece of equipment. As organic production grows, is there a place once again for the moldboard plow in the line-up of tillage equipment? Are cover crops a better tool for weed control? If cover crops are used, when is the best time to terminate them? The purpose of this study is to evaluate different weed suppression techniques and tillage practices and their effect on weed control, yield, and profitability. This study is being done on corn and soybeans.

Organic Planting Date Study

Organic corn is planted later to reduce the risk of contamination from GMO corn pollen. With soybeans, that risk doesn't exist. Beck's PFR data proves that planting soybeans early is one of the most important factors in driving high yields. In an organic system, will that hold true and how does that affect weed control. The purpose of this study is to determine the optimum planting date window for organic soybeans by planting on multiple dates throughout the growing season. The planting dates include mid-April, mid-May, and mid-June.

Organic Fungicide and Insecticide Study-In-Furrow

The purpose of this study is to evaluate organic fungicide and insecticide products, in-furrow, and their effect on yield and profitability. The products tested include Majestene and Stargus, both from Marrone Bio. Majestene is a nematicide and Stargus is a biofungicide. Both products are OMRI approved. This study is only being done on soybeans.

Study results will be available this winter in the Beck's Practical Farm Research Book or online at www.beckshybrids.com. For more information contact a local Beck's Hybrids representative.

Chris Grimm, CCA, PFR Location Lead
M: 641.481.5151 O: 515.674.2090 x3517
11250 Federal Ave. Colfax, IA 50054



Here are the formulas that organic growers of crops have used over the last two-five years to reduce and protect against insects and pathogens.

Insects in No-till crops:

When growers use cover crops and crimp them down, there are insects (wire worm, cut worm, army worms, etc.) that feed on the cover crop roots. They will continue to feed on the new corn, soybeans and other crops that will be planted in the no-till fields. There are two options, but these should be an application of 1 oz liquid or 2 oz dry SPE-120/acre:

Apply to the cover crop prior seeding, at planting.

1. If the cover crop seed is planted, in late fall or early spring before the crimping occurs, the crops will need to be spray with this formula 3-4 weeks before crimping to control the larva.
2. If not applying to the seed, using a foliar program, do the following ground application

Prefer about 3 gal Aerial or 15 gal ground mix/acre

- 8 oz Neem plus Kranja oil (a spreader stick)
- 3 oz Oroboost (spreader sticker)
- 1 oz SPE-120
- 1 gal Dramm Plant food (reduce the ph)

Planting the field crop, apply either 1 oz liquid or 2 oz dry SPE-120/acre to seed at planting.

This may seem complex but here are your options for some common problems with larva and germination

Tar Spot pathogens

*in the midwest,
particularly in
Illinois, Indiana,
and other
surround states:*

In southern Wisconsin and northeast Iowa, about 5-6 years ago, there has been and

have verified that these

fields with Tar Spot. Since the corn was in the V 4-5 stage, the growers used BacStop and EF-400, along with a spreader sticker to foliar feed the corn. The reason for these herbal treatments was to protect stress from the lesions in the leaves. This worked because the combination of treatments including the SPE-120 and less rain over the season promoted the success.

This year several growers in northern Illinois, and other contiguous states have witnessed the same situation. The proactive approach of is applying to the seed, 1 oz liquid and 2 oz dry of SPE-120 and 4 oz liquid of Organisan, Enhancer 1. The picture showing success was supplied by Midwest Bio Systems, Tampico, IL.



Control mycotoxins in corn and small grain:

For the last five years JABB of the Carolinas has worked with Midwest Labs, Omaha, to test for mycotoxins in corn (field corn, popcorn, sweet corn) wheat (hard red, soft red, etc), oats, spelt and other small grains. With these tests, JABB indicates 80-90% reduction in mycotoxins (DON, Vomitoxin and Fumonisin). The applications to the crop seeds is 1 oz liquid or 2 oz dry SPE-120/acre.

Cucumber beetle and Northern Root worm beetle:

This year, with all the hot weather, the northern root worm beetle and cucumber beetle emerged very early. Any growers that applied the combination of SPE-120 and Organisan Enhance 1 to protect against the pests were very successful. Apply to the seed 1 oz liquid or 2 oz dry SPE-120 and 4 oz Organisan Enhancer 1 /acre at planting or transplanting seeds. (cont. pg. 12)

I began working in cover crop-based reduced tillage systems almost 20 years ago, during my first faculty position at New Mexico State University in 2004. The irrigated desert system of the Chihuahuan desert was a world away from the fertile, rain-fed grain system of the upper Midwest, but many of the motivations for developing the practices were the same – protecting the soil from erosion, enhancing the resilience of the land, and providing an alternative strategy for managing weeds without chemicals.

When I moved back to Wisconsin in 2006, I was thrilled to see that that UW-Madison already had purchased a roller-crimper. The late Dr. Josh Posner, a professor of Agronomy, had a commitment to organic and sustainable agriculture long before these terms were buzzwords, and was one of the first land-grant researchers of the technique. I was able to establish research plots for no-till organic corn, soybeans, and oats the following year, implementing a newly-funded project that was focused on developing a zero-tillage organic system. Fifteen years later, we are still researching how to approach this same challenge of how to reduce soil disturbance in organic agriculture.

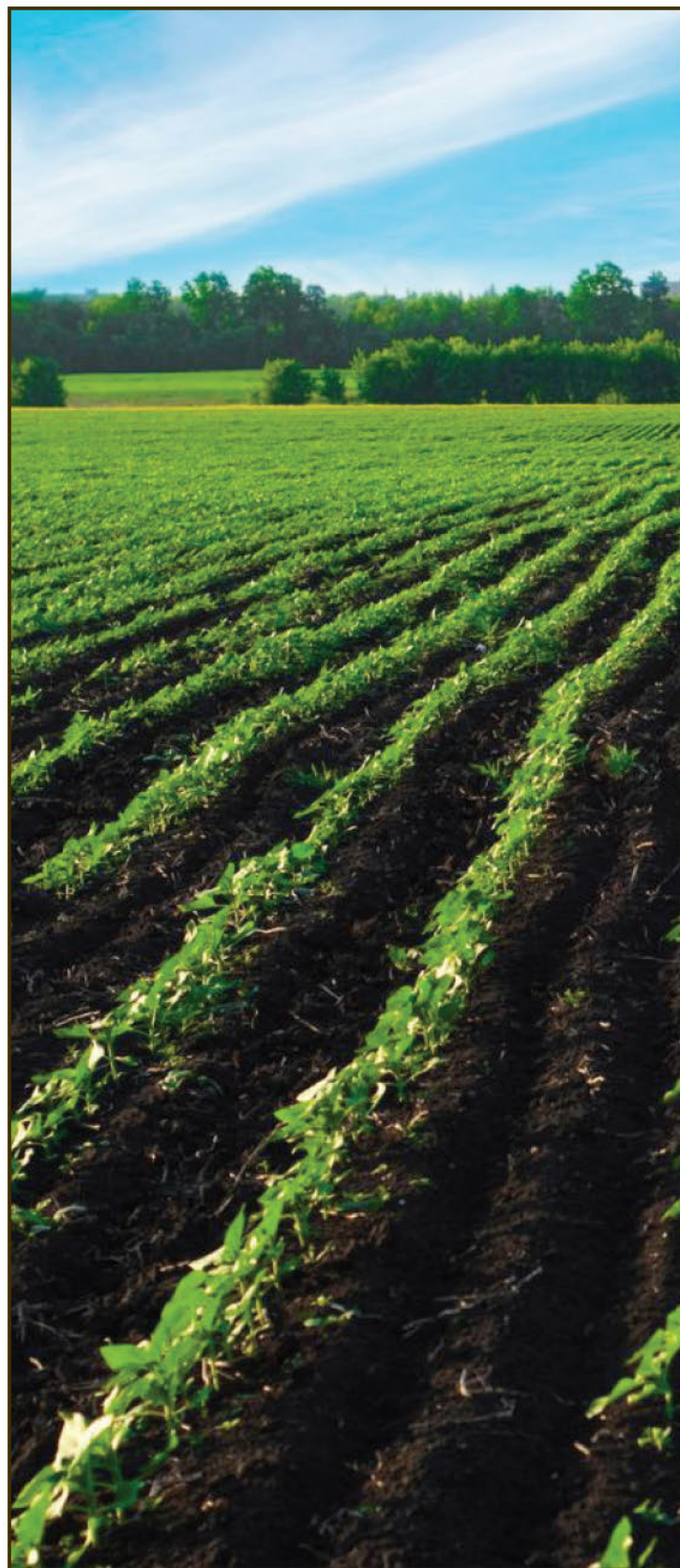
So, what have we learned over the past fifteen years? First, we have learned that with our current tools, there is no easy (or I would argue feasible) way of executing zero-tillage organic systems in the upper Midwestern grain growing region of the US. Some innovative farmers – including Rick Clark from Indiana – are really pushing the envelope to make these systems a reality and are having great success on their farms. While when implemented as per recommended best management practices organic no-till soybeans have a very high probability for success, there are still a lot of unknowns with organic no-till corn, and farmers should proceed with great caution when trying these systems. Every year we are learning more and getting closer to expanding organic no-till practices into other phases of the organic grain rotation – and this is in large part due to the amazing collaborative efforts of farmers, equipment manufacturers, researchers, and other partners – but we are still a bit of a ways from widescale adoption of these techniques in a way that limits the risk for farmers and achieves our agronomic and soil stewardship goals.

Below are some general suggestions for farmers that are thinking of getting into organic no-till production, at least for certain phases of the crop rotation. Do not hesitate to reach out to me if you want to talk further, or bounce ideas around of how to make these systems successful.

1. Start small.

Cover crop-based no-till systems are a significant change for many organic farmers and conventional no-tillers alike. Try it out on a small scale to minimize risk. Learn what adaptations you need to make in your cropping sequences and management practices to set yourself up for success.

(cont. pg. 10)





2. Choose wisely.

It is essential that you choose fields where you can get in early to plant a cover crop in the late summer/early fall – getting the cover crop into the ground early (around Sept 15 in Wisconsin) is essential to reduce the risk of not having enough biomass through the summer to suppress weeds. Also, choose fields with low to moderate weed pressure - and avoid fields with a history of perennial weeds.

3. Don't skip.

Plant the cover crops at the recommended seeding rates (3 bu/ac for cereal grains – or more accurately, 2,225,000 to 3,000,000 seeds/ac, depending on the rye variety used). Successful weed suppression requires a dense mat of cover crop residues. These rates will be higher than if you are planting cover crops for other applications (erosion control, soil health, etc.) – but realize your successful weed management is dependent on a thick mat, and you need a lot of plant material to achieve this!

4. Alter planting strategies for cash crop.

Bump up the seeding rate of soybean (225,000 seeds per acre). Be sure to spend time setting the depth of the planter appropriately. Add extra weight to equipment or adjust down pressure as needed. To ensure the seed gets into the ground, you might consider planting into the standing cover crop, and then rolling over it immediately after planting (just be sure to not crimp over soybeans in the crook/cotyledon stages to avoid damage to the emerging crop).

5. Stay sharp.

To plant through thick residue, planting equipment must be maintained in top condition. Invest the time needed to modify and adjust planting equipment.

6. Plan ahead.

Due to the central role of cover crops in this system, planning must start far in advance of a given main-season crop. Order your seed and strategize how it will fit into your crop sequence to ensure an early planting date off the cover crop.

7. Be flexible.

If the cover crop looks less-than-ideal in spring, be ready with a “Plan B”. Re-assess the stand in late-April/early May – if the rye stand looks skimpy in certain areas of the field, incorporate those as a green manure and go with a typical weed management strategy.

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Organic Grain Resource and Information Network Website:

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PROTECTING YIELD IN ORGANIC CROPS

The words jump out of the advertisement, demanding your attention. "Use our products and you'll gain 10-15 bushels!" We notice it because our minds immediately do the math on the income from those extra bushels in the bin.

It seems everyone is selling products that get you more bushels per acre. Often that is true, sometimes not, and there is never a guarantee in any given year. But, while this is common and ok to a point, I like to view it from a little different angle. Recently at our Organic Producer's Meeting, I outlined a little of the farming experience we had in Africa. The typical small-scale grower we worked with could raise about 10-15 bushels per acre using name-brand hybrid corn seed. After observing their methods and approach, I explained to them what Yield Potential is. They could hardly believe that the plants they were growing could potentially produce 15 times what they were getting! How easily we can get used to a certain level of production! We began looking at the whole farming system for ways to preserve the maximum yield that a plant possessed in its genetics by learning to control the factors that we could. This involved a detailed step-by-step evaluation of how they were growing their corn or soybeans and where the weak points were.

It's a great time to sit down and carefully review your entire system from the soil to the grain bin. Everyone knows we are in really challenging times in terms of crop inputs. The temptation to cut back on inputs is certainly out there, but I would encourage growers to first take a hard look at each field and field operation and evaluate it to see where dollars can most efficiently protect yield. I like to sit down and write down all the potential yield thieves all the way from working soil in less-than-ideal conditions to insect and disease pressure to weed control. Many yield thieves seem obvious and occupy a lot of time and resources (think weed control). Others may not seem as obvious (robust microbial activity, organic matter levels, subsoil insects, micronutrients, etc.). But all these factors are either maintaining yield or taking away from it. All season long, the plant is looking for assurances that it has what it needs to produce the maximum number of seeds possible. Our job is to make sure that happens to the best of our ability by nurturing the plant through the various stresses that it will inevitably encounter.

At our meeting, we took time to dig deeper into one of these stress areas, subsoil insect pests. Brian Mueller with Marrone Bio Innovations, an entomologist and agronomist, took us through the fascinating work they are doing to combat subsoil insect pests with biology. As an organic producer, you may feel you don't have the tools to protect yield as a conventional producer does. But there are companies making breakthrough technologies that are effective and work with nature to provide the plant with the protection it needs. I am particularly excited about this as I see more of these products being important to the conventional world also. These innovations will benefit all growers as we seek to understand the complexities of soil biology and how these interactions affect plant growth and development.

So as harvest winds up and fieldwork gets finished for the season, take time to sit down and think about how you're producing your crops. Write down your step-by-step plan and have a trusted friend or agronomist review it and ask questions. It may help shed light on areas to improve or try different things. Farming is truly a blessing and joy and I encourage everyone to have a safe and productive harvest season. Never stop learning.

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ORGANIC FORMULAS TO PROTECT AGAINST INSECTS AND PATHOGENS (CONT)

White Mold in dry beans, soybeans and sunflowers:

Apply one oz of liquid or 2 oz dry SPE-120/acre on the seed. There are some growers that applied the SPE-120 each year since the product was introduced 7 years ago. They never have had any noticeable amount of white mold.

Flea beetles and Cabbage maggots :

The flea beetles also emerged very early with hot weather. Growers that applied these inputs on organic and commercial fields were very satisfied with the efficacy of the program. The program included applying to the seeds 1 oz liquid or 2 oz dry SPE-120 and 1 pt Organisan Enhancer 1 at planting or transplanting

Controlling rhizoc, pythium and fusarium in all crops:

Applying to the seed 1 oz liquid or 2 oz dry SPE-120/acre. If serious issues, then add 1 pt Organisan, Enhancer 1 on the seeds/acre at planting or transplanting.

Foliar formula- will include 2-3 times foliar over the year. Application of the Organisan, Enhancer 1 plus Damm Fish to reduce the ph.

Spider mites in corn:

When the weather turned dry this year, spider mites attacked the corn. Here is the program these growers used: In spring, they applied to the seed 1 oz liquid or 2oz dry SPE-120 at planting/acre and the time that the mites appear.

Foliar apply acre: Aerial about 2-3 gal/ acre

- 8 oz Neem plus Kranja oil (a spreader stick)
- 3 oz Oroboost (spreader sticker)
- .5 oz SPE-120
- 1 gal Damm Plant food (reduce the ph)

Crops with two continuous years of 1 oz SPE-120 may not need any residual help because the SPE-120 the previous year.

Fall Army worm:

There were real problems with the Fall army worms. For the control of Fall army worms, some of the growers that applied SPE-120 in the spring planting had no problems with the fall army worms. For the control, growers in Ohio used this foliar program

Foliar apply acre: Aerial about 3 gal/acre

- 8 oz Neem plus Kranja oil (a spreader stick)
- 3 oz Oroboost (spreader sticker)
- .5 oz SPE-120/SBb 2.5
- 1 gal Damm Plant food (reduce the ph)

Grasshopper in alfalfa potatoes and small grains:

When the active ingredients in SPE-120, beauveria bassiana (Bb) is in the plant, the grasshoppers will smell the Bb and never eat the leaves.

Apply to the seed 1 oz liquid SPE-120 or 20 oz dry SPE-120/acre at planting.

Foliar- Aerial about 3 gal/acre

- 8 oz Neem plus Kranja oil (a spreader stick)
- 3 oz Oroboost (spreader sticker) Aerial about 15-20 gal/acre
- .5 oz SPE-120/SBb 2.5
- 1 gal Damm Plant food (reduce the ph)

If there are questions, contact me since these are new organic programs and I am committed to promoting the success of organic farming as I have been doing for 35 years.

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