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Logan County

h, what a year it's been! Another year of variability goes down in the books shortly. Remember, these highly variable years will build "averages" for climate. Excess rainfall hit portions of the county at times, while other areas, particularly the northern portions, could smell the rain, but little fell on the fields. Even general areas of the county with abundant rainfall had pockets get missed by the extremely spotty nature of the rains.

Harvest continues to wind down. Weather and storage space problems have both slowed the tail end of the harvest. Yes, abundant yields are always what is hoped for, but they have taxed the handling and storage capacity of commercial and private facilities. Central Illinois jumped on harvest early, then some rains came our way. Too late for most crops to benefit, but putting a halt to soybean harvest for an extended period.

What does the farm economy look like in our area? It may not be all roses, but looks to be brighter than some other areas of the country. The 2018 crop budgets developed by Gary Schnitkey at the University of Illinois showed corn after soybean acres showing a net of \$215 per acre for land cost and operator returns. This figured a yield of 208 bushels and a \$3.60



John Fulton

price. The yield is probably there or slightly exceeded, but price is closer to \$3.40 for fall.

If you follow cash rents, an average of \$215 doesn't cut it in our area. Then there is family living expense to account for out of the bottom

line as well. The average from Farm Business Farm Management records in 2017 was almost \$80,000 per family for the State of Illinois.

The 2019 numbers really don't improve for corn or soybeans.

We anticipated more soybean acres based on pre-season budgets showing a net of \$270 per acre, using a yield of 63 and a price of \$9.60 per bushel. Yields have exceeded the estimate in many cases, however the price is under \$8.00 per bushel.

Political uncertainties have had an impact on the prices, but have really taken a toll on soybeans. The North American Free Trade Agreement has now been replaced with a new agreement, but uncertainties in markets are usually not a good thing. The trade negotiations with other areas of the

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world continue, and a quick resolution would certainly be helpful to commodities including soybeans.

Given the expectations of a tight farm economy, where does the money come from to make things flow? Simply, it is much like any family budget. Additional money is borrowed, some expenses are cut, savings are dipped into, off-farm employment or specialty enterprises are undertaken to provide income and benefits, or there are some royalty producing incomes sought.

The trend has been toward at least some offfarm employment for the family for many years now. Add in the energy boom in the area with wind power and now solar coming to the area, some additional royalty income is being pumped into the farm and government budgets.

Specialty enterprises include small-scale additional crops, specialty grains and seed production, non-GMO crops, and livestock operations, all contribute to these additional enterprises.

Some additional assistance will come through limited direct payments for market disruption. Another factor for corn is the proposed increase in ethanol content in gasoline from





10% to 15%. The production side of the equation is hopefully offset by the use side, and innovative ways to use more commodities is essential to the farm economy.

Farmers are extremely resourceful, and many are finding ways to effectively deal with declining incomes or outright losses. The production side has been operating at a high level of efficiency, and we certainly hope the weather cooperates too.

The marketing side has offered opportunities through the year for a greatly increased income, and hopefully many took advantage of the opportunities when they presented themselves. Stability in markets will allow for better planning by producers, processors, and consumers. We can all add stability and prosperity to our wish list for the coming year! Enjoy the fall weather, and be safe on the roads.



Less corn acres planted, but lower prices

- Where is the silver lining in that?

By Nila Smith

In March of 2018, the National Corn Growers Association reported that across the country, there would be fewer corn acres planted this year. Of the 48 states included in the survey of producers, 33 states reported that farmers would plant less corn acres in 2018 than in 2017.

Across the country corn acres have been on the decline over the last few years, with soybean acres being on the increase at approximately the same rate, an indication that the era of corn-on-corn production is fading and farmers are once again looking at the organic value of crop rotation. Additionally, soybean prices have been high over the last two years, enough so that the lower bushel per acre crop brings in more dollars per acre.

In 2016 across the 48 states, approximately 95 million acres of farmland were planted to corn.

In 2017 corn and soybean crops were equal at 90 M acres planted.

In 2018 corn numbers dropped to 89.1 M acres planted, just one percent less than in 2017, and

soybean acres at 89.6 M acres planted were up one percent from 2017.

Three big producing states reported that corn acres would decrease by 300,000 or more. Those states were Kansas, Minnesota and North Dakota.

However a few states indicated that corn acres would increase in 2018. Among those states were Nevada, Oregon and Ohio.

In 2017 a research article written by Michael D. Helman with the University of Missouri Food and Agricultural Research Institute indicated that within the state of Nevada a downward trend in markets for beef cattle, dairy products as well as wool was going to be an ongoing issue for the state agricultural producers over the next few years. While the report referred to the opportunity for gain to be moderate, other factors were entering into the equation, such as the impact weather and drought was having on alfalfa crops and the need for an increase in purchased feed stocks for all livestock producers.

CONTINUED ■



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In 2012, 40 percent of the state agriculture gross receipts came from the sale of beef. Dairy production also played a large role in the state's overall agricultural economics. Hay was listed as the largest crop, but was tied back directly to the production of livestock, and not so much for export nationally or internationally.

With the livestock values declining and the state suffering drought conditions in recent years, it stands to reason that more range fed cattle are being fed grains to supplement their diet. Therefore, the increase in corn production in the state is not going to have a significant impact on grain stores in 2018.

While increases were reported by the Corn Growers Association for the state of Oregon, that state doesn't even list corn in its top 10 agricultural products.

Oregon is noted for its production of cattle. Cattle and calves is listed as their number two in the top ten products list. According to Farm Flavor, Oregon producers market \$701 million in cattle and calve revenues annually.

Therefore, it seems that the impact that an increase in production of corn in that state would be insignificant in the world markets.

While the National Corn Growers Association reported in March that Ohio farms would plant more acres to corn in 2018, a report by AgWeb in August of this year does not support that statement.

According to a report published by the College of Food, Agriculture, and Environmental sciences at the Ohio State University, corn



acres have been on decline since 2013, while soybean acres have increased. This same report says that soybean acres will exceed corn in the 2019 production year.

On the flip side, Ohio farmers will reach a new high in corn yields this year according to a second article published in August by AgWeb.

In Illinois, according to Grainnet.com farmers planted 200,000 fewer acres to corn in 2018 compared to 2017. At the same time, inputs for the remaining acres increased by \$8 per acre. The article published on July 3rd of this year predicts that this will be the fifth straight year of a drop in farm income in the state of Illinois.

However, the bright spot in this figure is that according to an article published in FarmdocDaily, Illinois farmers will see higher yields on fewer acres and their net losses on the higher production acres, such as those found in Logan County, will actually be less than in the past years.

Table 1. Corn Revenues and Costs, Central Illinois -- High Productivity Farmland, Actual for 2012 through 2017, Projected for 2018.

	Year							
	2012	2013	2014	2015	2016	2017	2018P	2019P
Yield per acre	126	197	231	200	228	227	215	207
Price per bu	\$6.93	\$4.52	\$3.76	\$3.72	\$3.49	\$3.40	\$3.70	\$3.80
Crop revenue	\$873	\$890	\$869	\$744	\$796	\$772	\$796	\$787
ARC/PLC or ACRE	0	0	4	45	12	1	0	0
Other gov't payments	24	22	0	0	0	0	20	0
Crop insurance proceeds	295	61	10	31	2	6	0	0
Gross revenue	\$1,192	\$973	\$883	\$820	\$810	\$ 779	\$816	\$787
Fertilizers	200	193	171	166	154	135	130	145
Pesticides	49	66	67	66	64	73	73	75
Seed	108	114	120	118	116	115	114	114
Drying	16	24	28	15	13	16	16	18
Storage	7	8	12	14	11	15	15	15
Crop insurance	25	27	24	\$403	22	24	24	24
Total direct costs	\$405	\$432	\$422		\$380	\$378	\$372	\$391
Machine hire/lease	10	11	12	12	12	13	13	13
Utilities	5	5	5	5	5	5	5	5
Machine repair	22	22	24	22	22	24	24	24
Fuel and oil	23	24	24	17	14	15	15	17
Light vehicle	2	2	2	1	1	1	1	1
Mach. depreciation Total power costs	55 \$117	63 \$127	65 \$132	67 \$124	65 \$119	\$122	63 \$121	63 \$123
			•	•				•
Hired labor	14	16	16	17	17	18	18	18
Building repair and rent	8	6	6	5	4	5	5	5
Building depreciation	9	5	11	12	12	12	12	12
Insurance Misc	9 8	10 8	10 9	10 8	10 8	10 9	10 9	10 9
Interest (non-land)	0 11	0 11	11	13	13	15	16	18
Total overhead costs	\$59	\$56	\$63	\$65	\$64	\$69	\$70	\$72
Total non-land costs	\$581	\$615	\$617	\$592	\$563	\$ 569	\$563	\$586
Operator and land return	\$611	\$358	\$266	\$228	\$247	\$210	\$253	\$201
•	•		•		•	•	•	4
Land costs (e.g. cash rent)	270	290	293	278	273	267	264	245
Farmer return	\$341	\$68	-\$27	-\$50	-\$26	-\$57	-\$12	-\$44

Farmdoc estimates that the net return per acre in 2018 will be minus \$12 based on a yield of 215 bushels per acre. This is compared to losses of \$57 per acre last year and a projected net loss of \$44 per acre next year.

Now, another consideration is how close will Logan County farmers come to that estimated yield average? If per chance, those yields could come in at an average of 220 bushels per acre, local farmers could actually see a small profit in this year's corn crop.

On the flip side of this coin, the Logan County Farm Bureau Young Leaders earlier this year conducted their countywide yield estimate tests and they determined that Logan County on the average will have yields in the 207 bushel range, meaning that the Farmdoc estimate of profitability could be inaccurate locally.



Local farmer Vernon Klockenga likes to plant in rows of eight, alternating varieties side-byside. He can observe the field conditions at the same time as computer in the cab reads outs what is being collected. Later he can conduct a more complete review of the data that has been recorded to determine if one variety did better than the other, and other pertinent information, such as spot fertilizer needs. Photo Jan Yougquist



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At the same time, the FBYL took into consideration that they were estimating the yield based on lighter weight corn that would equate to 85,000 kernels per bushel. In 2017 corn came in heavier with 78,800 kernels per bushel. If kernel weight should be heavier than estimated the bushels per acre will increase. The FBYL stated that if the kernel count in 2018 would happen to duplicate that of 2017, the bushels per acre this year could increase to 223 on the average. This would allow for that small margin of profit mentioned earlier.

So what does all this mean for Logan County farmers? Not a whole lot. Increased corn acres in western states is not going to have an impact on grain prices. Decreased corn acres throughout the other states in the union are going to be more important for the future of the corn markets because it may impact grain CONTINUED ■ in stock.



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With the advances in seed corn, higher yields are expected, which could equate to break even or increased bushels on the whole at harvest time across the country in spite of the decrease in acres planted. If weather impacts harvest or yields and causes a decrease in anticipated yields, then that could impact the bushels of corn stored in 2018. According to the NCGA. 2017 stores totaled 8.89 billion bushels, only up three percent from March of 2017. If corn in storage does not increase and if trade agreements are reached in 2019, that could equate to a higher price per bushel at the elevator.

Farm doc is also projecting that corn prices in 2019 will be slightly higher on the average moving from \$3.70 per bushel in 2018 to \$3.80 in 2019. Cash prices at the elevator do not support that claim as of October 12th,2018, when the average corn price was \$3.27. However, this is harvest time, and with the trade agreements in limbo, prices are lower than they should be and lower than they could be toward the first of the year.

So, where is the silver lining in all these figures? It's really hard to say. Once again there are as many "what if scenarios" in this basket as there are kernels on an ear of corn. If the trade agreements are worked out and China is open to corn imports from the U.S. we could see an increase in volume sold, a decrease in bushels in stock and an increase in price. China is working to require higher rates of ethanol in all their gasoline products so that could mean more raw product purchased in the coming years.

Silver linings are often as hard to find as pots of gold at the end of rainbows. But

Logan County's silver lining is its continued outstanding yields, year after year. The bushels brought in from the field are higher in spite of fewer acres planted, input costs continue to go down, and looking at new markets for the consumption of corn the price at the elevator may indeed rise rather than fall.

A blessing to Logan County farmers continues to be in the development of alternative energy projects, wind and solar, replacing production income while taking away tillable acres. With reduced acreage available, and increased yields per acre, coupled with revenues gained from alternative energy payments to the farmer for land use, Logan County farmers could see stable farm income from crops with the bonus of income from alternative land use.

Changing farm practices with the reduced acreage needed to produce the same total bushels, there is room for greater diversification on the farm. Whether it be an increase in soybean production, returning to crop rotation or exploring alternative crops, farmers in this county may find that they can accomplish more on fewer acres, thus increasing their odds for profitable years in the future.

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The expansion of E15 and consumption of corn

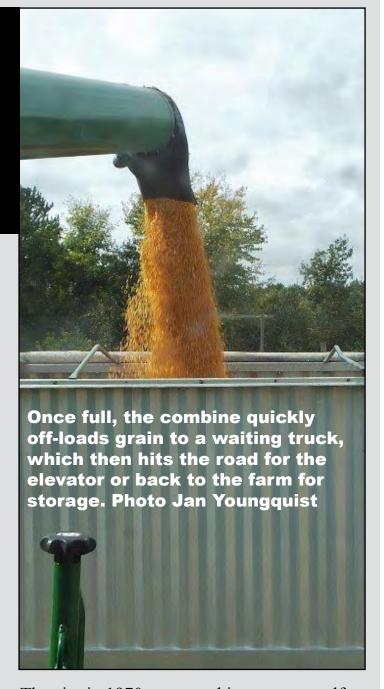
By Jim Youngquist

T 7ith continued research into new hybrids and GMOs, and the expansion of corn production acreage, we have experienced incredible increases in yields, and the result is that we have more corn but not an appetite for greater consumption. The result for producers is non-sustaining lower prices.

So the greater challenge is to find new markets or expand existing markets for the consumption of corn.

In the 1970s the addition of ethanol to gasoline began because the current stabilizing additive, MTBE, was found to be contaminating groundwater. By 2005 MTBE was banned in 20 states and the norm became the addition of 10% ethanol to gasoline to raise the octane level, and provide the needed oxygenating stabilizer.

Corn prices at the time were around \$2 a bushel, and with the nationwide adoption of E10 as a standard for automobile gasoline, it is estimated that ethanol production added somewhere between 75 cents to \$1 a bushel to the price of corn.



The aim in 1970 was to achieve energy selfsufficiency, avoiding politically charged purchases and commitments for fuels to unstable regimes in middle-eastern countries.

Today the aims have changed. With the expansion of shale oil production in the gasoline industry we are now energy self-sufficient and are now a petroleum

exporter. The aim of ethanol use now is for environmental protection and agricultural support.

Most gas stations in the U.S. sell a blend of gasoline and the 10% ethanol produced mainly from corn goes to motorists driving automobiles and light trucks. In 2011 the EPA cleared all automobiles produced after 2001 to use E10. With government subsidies, the ethanol industry grew, corn consumption grew, independent ethanol producers went out of business and sold out to big grain consortiums (like ADM and Cargill), and the farmers who grew corn were rewarded.

In an attempt to grow the ethanol industry, new ethanol blends such as E85 were produced and marketed. E85 is a blend of 85% ethanol and 15% gasoline, and still exists today. Approximately 11 million E85 flex fuel vehicles have been produced since their advent in 2008 but only about one-half million of the E85 capable vehicles get fueled with E85 gasohol today for two reasons: First, the availability of E85 has been hampering E85 sales. Few gas stations were able to sell E85 because of the infrastructure changes needed to support E85; and second, drivers found that they got poor mileage from low-energy E85

compared to E10, and few continued to use E85 despite the lower price.

In March 2009, a lobbying group, Growth Energy, formally requested that the EPA allow the ethanol content in gasoline to be increased to 15% from 10% for general consumption in the United States. Their aim was for E15 to replace E10 as the automobile standard for cars and light trucks produced after 2001. Growth Energy's motivation was to expand the ethanol industry, and the result would be to expand the consumption of corn. The EPA gave tacit approval, with the restriction that E15 only be sold from October thru May each year. Since ethanol requires great quantities of electricity to produce, the EPA wanted to limit the production of E15 to reduce the amount of carbon put into the atmosphere by coal burning power plants during the high electricity production summer season (an Obama administration environmental regulation).

This seasonal restriction prevented the expansion of E15. Service station owners stayed with the old standard E10 rather than spending significant money to expand for a fuel that was only used for 8 months a year. E15 was shelved except in a few markets, and





is only sold in 1,300 gas stations in 29 states currently. The major problems are insufficient infrastructure and seasonal restrictions by the EPA.

In July 2018, President Donald Trump said in a speech to Iowa farmers that he would work to lift the E15 EPA seasonal restrictions and promised E15 sales year round. The expansion from E10 to E15 would raise the consumption of corn from 40% of the current crop to approximately 55% if E15 replaced E10 nationwide according to the USDA.

The oil industry is actively fighting E15 because the expansion of ethanol would mean a reduction in the consumption of gasoline in the midst of a boom in the production of petroleum fuels in the United States. The oil industry has issued press releases and established websites listing the hazards, dangers, ecological and economic reasons not to use E15, much of which is full of innuendo, hyperbole, and outright misdirection.

In addition to the opposition from the oil industry, E15 also faces another hurdle. State governments currently provide sales tax exemptions for the ethanol portion of E10 (a savings of 20%) but there is no sales tax exemption presently for E15. Any service station replacing E10 with E15 would immediately price themselves out of the market to other stations that continued to sell E10.

In this time of prices impacted by global markets and trade disputes, changing the nationwide standard for gasohol from E10 to E15 would expand the market for the consumption of locally grown corn and would hopefully raise the price to establish a baseline for \$4 a bushel corn in the United

States. While it is fraught with uncertainties and political promises, the expansion to E15 would be a very good thing for Logan County producers.

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Mid-October in Logan County the last corn fields were coming in. Here, Vernon Klockenga combines a field north of Lincoln. Photo by Jan Youngquist

Ag subsidies lift producers to balance the effects of tariffs and world trade

By Angela Reiners

The government's decision this summer **■** to aid farmers harmed by world trade problems is said to provide a safety net, help remedy some of the income losses, and offset the damage caused by the trade wars.

In July, Trump announced a \$12 billion aid package to help farmers hit hard by tariffs on crops. The government will dole out about \$6 billion in relief to help farmers weather trade wars.

Farmers can apply once their harvest is complete and they know their production numbers for the year. The United States Department of Agriculture said wheat, livestock, and dairy farmers have already received some of the money. However, soybean producers, who will receive many of the direct payments. have not applied since their harvest season is not completed.

In a July 24 report, CBS News said "Aid will come in three ways: (1) Direct payments to farmers who have been hurt by escalating trade tensions, (2) a food purchase program, in which the government will buy unsold food and distribute it to food banks, [and] (3) a program in partnership with the private sector to create new export markets for American farmers."

In August, the USDA provided more details on how these programs will help farmers. Their Farm Service Agency is managing a "Market Facilitation Program" which will "provide payments to corn, cotton, dairy, hog, sorghum, soybean, and wheat producers."

The USDA's Agricultural Marketing Service is managing "a Food Purchase and Distribution Program to purchase up to \$1.2 billion in commodities unfairly targeted by unjustified retaliation."

The Foreign Agricultural Service's Agricultural Trade Promotion Program will provide \$200 million which will "be made available to develop foreign markets for U.S. agricultural products" [and] "will help U.S. agricultural exporters identify and access new markets and help mitigate the adverse effects of other countries' restrictions."

American Farm Bureau Federation President Zippy Duval is "happy with the program" saying "it will help thousands of farmers who are in financial binds.

"The administration's tariff mitigation package is welcome relief from the battering our farmers and ranchers are taking in the ongoing trade war. There is no doubt that the tariffs from nations like China have led to lower crop and livestock prices," Duvall said, [and] "The additional burden of tariffs on the goods we sell to China, Canada, Mexico and the European Union has been more than many farmers can bear."

He also said, "Today's aid announcement

gives us some breathing room, but it will keep many of us going only a few months more. The real solution to this trade war is to take a tough stance at the negotiating table and

quickly find a resolution with our trading partners. If we're going to turn our farm economy around for the long-term, we need to open more export markets with fair trade deals, and the sooner, the better."

The concern over the plan only being a short-term solution is what has many feeling government payments are not the answer. They would rather be able to export more of their products.

One who has expressed concern is Tom Schatz, president for Citizens against Government Waste. In the article, "Reactions mixed over new Trump farm aid proposal" Schatz said, "Instead of using taxpayer dollars to bail out victims of President Trump's trade war, the administration should remove destructive tariffs and begin to engage in free and open trade, which will benefit farmers and all Americans."

There is some optimism that the government can negotiate some new trade agreements.





Recently, the United States, Mexico, and Canada have been working on revising a trade deal called the United States-Mexico-Canada Agreement or USMCA.

Earlier this month, Illinois Farm Bureau President Richard Guebert Jr. said, "At a time of falling net farm income, rising expenses, and market uncertainty, this renamed U.S.-Mexico-Canada Trade Agreement (USCMA) represents an important and timely step in the right direction for Illinois farmers."

The Office of the U.S. Trade Representative has said the agreement will help to expand markets for agricultural products such as milk, cheese and other dairy products.

Though the agreement has not yet been approved, there are hopes it may be approved sometime in early 2019.

One intent is for the program to provide more funding for developing foreign marketing and step up marketing overseas, which the agricultural organizations seem to be hoping for

The program also aims to provide relief to those who have suffered financially, mitigate the damage caused by the trade wars, and to enable local producers to receive some of the aid to help them through.

This complex process is challenging for farmers. It appears that the day is long past when farmers could simply experience the fruits of their labors without any government interventions. But the goal of the present negotiations is to empower the farmers to do their work with the confidence that our government stands behind the American farmer.

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animals. However, a downside to dicamba is that it is more "volatile." In other words, it is more prone to drifting into other fields, where it may damage adjacent crops instead of weeds, and especially soybeans.

Monsanto was working on a new seed crop in 2017 that was resistant to dicamba, but trouble began to brew in the fields. Before the new seeds were ready, reports came to light of people using dicamba on their current crops, despite warnings.

As the year went on, the problem continued to grow for farmers across the country, despite some states outlawing the use of dicamba. Both Arkansas and Missouri banned the use of the pesticide, although some farmers in those states still applied it to their fields.

Despite the issues with drift in 2017, the numbers of complaints investigated by the government across the country have gone down for 2018. Clinton Griffiths of the Genetic Literacy Project confirms that assessment. "Following high drift and volatility complains in 2017, Bayer claims those numbers are lower this season," writes Griffiths. "According to Bayer, by August this season there were 13 complaints per million acres of seed. That compares to 99 per million acres last year."



ELEVATORS AT:

Kruger Station Johnston Siding - Atlanta Beason - Lawndale Griffiths' report adds that "[in] Missouri, state departments of agriculture were investigating 605 reports of dicamba-related injury as of mid-July. That compares to 1,411 complaints at the same time last year."

Different sources report different reasons for why the numbers of dicamba-related claims have fallen. Some research suggests that various state-level regulations are responsible, but they may not be the only solution. Juliette Michel of Phys.org adds that "while total reports of contamination have fallen, they have declined sharply in states that imposed tough regulations on the pesticide, while increasing in states that have not."

Alternatively, some farmers are reporting that proper training and instruction in the use of pesticides such as dicamba have helped to reduce their problems. Scott Dauk, a farmer speaking at an agriculture show in Iowa, reported his own success in reducing crop damage. Dauk says that he looked for information on what kind of equipment to use and how to spray the dicamba: "on spraying speed, pressure and gallons applied per acre. Based on that information, he was given the nozzles he needed." Farmers like Dauk have also begun growing dicamba-resistant seeds that were released earlier this year.

Dauk neither saw nor heard of dicamba drift problems in his area this year. He made sure he was watchful of adjacent crops, and talked to neighbors about his use of the herbicide. Additionally, he took extra precaution by adding a buffer between dicamba-tolerant and non-tolerant soybeans.

But while damage on soybeans has dropped, some experts are warning farmers not to get

too comfortable with the statistics. By way of example, an early season report in The Progressive Farmer listed - "in addition to 3,107 potentially injured soybean acres, Missouri has dicamba complaints for 1,445 tomato plants, 514 acres of peaches, 75 acres of watermelons, 50 pepper plants, two greenhouses with vegetables, personal gardens, grapes, 15 rose bushes, and more than 12 acres of trees" as of June of this year.

Agricultural scientists and experts are warning everyone to remain cautious, even with the better statistics seen this year. At the moment, everyone is waiting for the EPA to make a decision on whether or not to keep the use of dicamba legal, or to completely ban the substance due to the massive number of complaints in the last two years. Regardless of that decision, it looks like farmers are at least able to breathe a little easier this year on the issue.

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Local land owners reap a bounty on land sales

By Jim Youngquist

The three key counties in central Illinois ▲ - Logan, McLean and Sangamon - are known as some of the most fertile, best producing lands in the entire United States. The soil and rainfall here are just about perfect. As farm ground, the production here exceeds national averages for growing corn and beans, especially with new hybrids and GMOs. The high production in these three counties is what has kept farming here alive, away from bankruptcy, and able to survive even with lower crop prices.

As a result of its productivity, land prices in central Illinois and these counties has continued to remain stable at very high levels despite the ongoing lower price of corn and beans. The National Agricultural Statistics Service shows that the national average for cropland was \$2,060 in 2005 and \$4,090 per acre in 2017, while the three key Illinois counties reached a high in excess

of \$17,000 an acre in 2005 and has

currently

settled down to around \$12,000 an acre, often however bringing as much as \$15,000 an acre.

Because of its high price and high value, local land speculators have bought tracts at auction and sold them a short time later at a substantial profit.

Sources say, however, that if left to their

own, central Illinois acreage would level

out at somewhere between \$3,000 - \$5,000

an acre if merely linked to productivity and local market pricing. This is still above the national average. When only local purchasers were buying land that goes up for sale, prices were much lower. CONTINUED

However, some unlikely market forces have been participating in land auctions and sales, and driving the price way up for the last 10 - 15 years.

According to local sources, outside participants have helped keep land prices higher than the national average in central Illinois. An influx of bidders and money from "other than farm" sources, many from out-of-state have been participating in local land auctions and sales.

Capital investment firms have been buying up central Illinois farm ground at auction because it maintains its value in an economy where stocks and bonds may not hold their value, and because it returns approximately 2-3% on investment. Adding farm ground to their clients' mutual fund portfolios provides stable, concrete diversity even in the midst of troubled economic times. These investment firms have been bidding the price up and providing competition for local buyers.

It is widely reported that another entity competing at auctions for central Illinois farm ground is the Mormon church. The Mormon church is reported to have extensive land holdings in 24 states in the United States, much of it in Florida and Missouri, but is quite active purchasing ground in central Illinois.

Because it is a religious organization, the Mormon church does not have to disclose any information about its property holdings, so the extent of its holdings can only be guessed at.

In addition to not having to disclose their holdings, the Mormon church does not have to pay any taxes on the properties or the income it derives from those properties, and so every acre of ground that it buys here in central Illinois is removed from the counties' important source of income, property taxes.

Both of these entities, capital investment firms and the Mormon church, show up at larger acreage auctions and compete with local land-buyers, driving prices up. Their aim is to drive the prices up so that their land investment-holdings maintain a high value. So, since these out-of-state buyers show up to bid on larger tract auctions, larger acreage sales tend to bring a higher price than smaller acreage sales.

Competing right alongside these out-of-state buyers are larger local producers who are looking to increase their production acreage. While the out-of-state buyers purchase these plots to put them up as cash rent ground, the local producers are buying the ground to keep it out of the hands of the investment firms and the religious groups and farm it themselves.



2018 Logan County Farm Outlook Magazine

For the local producers, it is better to purchase more ground and keep their income protected from excess taxation. Neither the local buyers nor the out-of-state buyers seem to be taking acreage out of agricultural production.

On the downside, bidding the price up means that a whole new generation of farmers is likely being prohibited from entering the profession because they cannot afford the startup cost to purchase sufficient farm ground. This means that for the most part only well established farms with substantial existing acreage under production are the only local entities likely to afford farms that go up for sale. Additionally, the land purchased by a religious organization means that local government loses an important source of property tax income.

The key positive outcome of having out-ofstate bidders propelling the land price upward is that local farmers who have worked hard all their lives and are now retiring or leaving farming are reaping very good prices for the land that they put up for sale. Larger farms that buy that ground shelter money from taxes, and their balance sheets look good to banks and credit agencies.

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Foreign Investors Are Snapping Up US Farms

https://www.motherjones.com/ food/2017/08/foreign-investors-aresnapping-up-us-farms/





Five Factors Affecting Local Land Values

Recent Illinois land value studies show overall declining values, but not on every farm.

1 2 3 4 5

Commodity Prices

Land values
typically correlate
with commodity
prices. When grain
markets go up,
farmland follows
suit, helping fuel
the dramatic rise
in land values from
2003-2014 and
contributing to
declining values
since 2015.

Trade

Exports are crucial to corn and soybean pricing. If trade agreements aren't made, commodity prices will remain low, translating to lower Illinois land values.

Rising Interest Rates

Historically low interest rates allowed for increased investment. The cost to borrow money increases as rates have risen, making other investment opportunities more attractive.

Supply & Demand

Currently, less
than one percent
of Illinois farmland
transfers
ownership in a
calendar year.
Even with
reduced working
capital on some
farms, land
auctions are few
– keeping supply
low and demand
steady.

Location

As with all real estate, location is key. When a farm becomes available in closely held areas, prices are driven above typical market values by increased demand.

Overall, farm prices are expected to continue declining moderately in correlation with lower commodity prices, rising interest rates, and lower net farm incomes. Given your local market conditions and specific land class, farmland may deviate from current trends.

Learn more about FCI's 2018 land values benchmark study at www.farmcreditlL.com/benchmark.



Helping Farm Families Succeed

An ancient practice

still works to improve land and crop viability at less cost

By Lisa Ramlow contributions from LDN staff

It seemed like an experiment. When corn Lprices hit their high farmers seemed to begin a monoculture program of planting corn-on-corn to see what the long-term effects with new hybrids and GMOs would produce. With deep tillage, huge amounts of nitrogen, and plenty of moisture this monoculture approach seemed to bring good results at first. However, in time disease, soil wear, and nutrient depletion took its toll. Corn-on-corn production ultimately brought a decrease in yield.

But not much changes fast in agriculture. And when it comes to what seed goes in the field, that premise is supported by figures released this past June. The U.S. Department of Agriculture's National Agricultural Statistics Service (NASS) surveyed approximately 8,600 segments of land and 70,500 farm operators across the U.S on what farmers actually planted for 2018.

- Soybean planted area was estimated at 89.6 million acres, down one percent from 2017.
- Growers expect to harvest 81.8 M acres of corn for grain, down one percent from last year.

Varieties of seed cast also showed no change:

- Producers planted 94 percent of the soybean acreage using herbicide resistant seed varieties, unchanged from 2017.
- Ninety-two percent of all corn acres planted in the United States are in biotech varieties. unchanged from last year.

For most of Illinois, farmers are planting soybeans or corn with many following rotation patterns that may include cover crops between seasons or between rows.



In Logan County many farmers do indeed use crop rotation on their farms. One farmer shared that soybeans will use the fertilizer that is left over from his corn crop. Soybeans fix nitrogen to the soil that corn can use the following year. This saves on fertilizer costs.

Another local farmer shared that he crop rotates because there is less chance for diseases and you don't have to use as much fungicide and insecticide. Rotation, also keeps this farmer from having to till a lot of acres.

In Logan County most tillable farmland is put into corn or soybeans with little difference in total acres of either corn or soybeans.

Comparing numbers of acres planted in corn or soybeans over a range of years does not determine how many acres might be in rotation, but you can see small fluctuations which may be related to a planned rotation, or may be related to other factors, such as more favorable markets.

A three-year comparative of Logan County corn and soybeans							
Acres planted	Acres harvested	Bushels per acre	Total yield				
2017 Corn							
185,000	182,000	213.0	38,830,000				
2017 So	ybeans						
156,500	155,800	64.7	10,087,000				
2016 Co	rn						
200,500	199,300	219.4	43,723,000				
2016 Soybeans							
138,000	137,000	66.6	9,156,000				
2015 Co	rn						
196,000	,	172.8	33,602,000				
2015 Soy	ybeans						
140,500	140,500	56.6	7,955,000				

What might be asserted from the comparative information is that just as seen in the over-all U.S. figures, there are not dramatic changes between how much corn and how much soybeans are planted in Logan County from one year to the next.

A field study of crop rotation conducted from 2003–2011 in Iowa contrasted three rotation systems:

- The two-year maize/soybean rotation received fertilizers and herbicides at rates comparable to those used on nearby farms.
- There was a three-year maize/soybean/small grain plus red clover rotation.
- The four-year maize/soybean/small grain plus alfalfa-alfalfa rotation managed with lower synthetic N fertilizer and herbicide inputs and periodic applications of cattle manure.

The research evidenced less costs in nutrient and pesticide inputs with higher yield benefits from crop rotation: "Grain yields, mass of harvested products, and profit in the more diverse systems were similar to, or greater than, those in the conventional system, despite reductions of agrichemical inputs. Weeds were suppressed effectively in all systems, but freshwater toxicity of the more diverse systems was two orders of magnitude lower than in the conventional system. Results of our study indicate that more diverse cropping systems can use small amounts of synthetic agrichemical inputs as powerful tools with which to tune, rather than drive, agro ecosystem performance, while meeting or exceeding the performance of less diverse systems."

Going back to our original postulation, not much changes fast in farming, but one thing for sure, crop rotation is a reputable farming practice that has stood the test of time.

Growing the same crop in the same place for too many years depletes the soil of certain nutrients. With rotation, a crop that exhausts the soil of one kind of nutrient is followed by a crop that returns the nutrient to the soil. Decisions about rotations may be made in the year prior, season prior, or sometimes at the last minute depending on weather, soil tests and market opportunities.

Crop rotation takes time and planning and depends on farm size, climate, market, soil type, and growing practices.

Each year the challenge is to rotate crops in a manner to have a profitable farming season. At the same time farmers have to keep in min equipment rotation and labor capability. The expert farmer considers all these aspects of farming before making the rotation decisions Alternating crops on Illinois farmland can provide yield increases, erosion control and reduced compaction in fields.

Rotating crops over any given plot of land has been an ancient practice of farming dating to BC (Before Christ birth), a long, long time ago. Maybe that should tell us something.

In the Old Testament book of Leviticus, chapter 25, the Lord shared some ideas about farming with Moses:

[2 "Speak to the Israelites and say to them: 'When you enter the land I am going to give you, the land itself must observe a Sabbath to the Lord. 3 For six years sow your fields, and for six years prune your vineyards and gather their crops. 4 But in the seventh year the Sand is to have a year of Sabbath rest, a Sabbath to the Lord. Do not sow your fields or prune your vineyards. 5 Do not reap what grows of itself or harvest the grapes of your untended vines. The land is to have a year of rest. : 6 Whatever the land yields during the Sabbath year will be food for you-for yourself, your male and female servants, and the hired worker and temporary resident who live among you, :7 as well as for your livestock and the wild animals in your land. Whatever the land produces may be eaten.

He even goes on later in the chapter to talk about the market:

14 "'If you sell land to any of your own people or buy Sand from them, do not take advantage of each other. 15 You are to buy from your own people on the basis of the number of years since the Jubilee. And they are to sell to you on the basis of the number of years left for harvesting crops. 16 When the years are many, you are to increase the price, and when the years are few, you are to decrease the price, because what is really being sold to you is the number of crops.



crop rotation began. Crop rotation is the intentional planting of growing different types of crops in the same area in sequenced seasons. It also requires not planting anything at all in a given season to allow the land to rejuvenate.

Logan County farmers have returned to a program of crop rotation. Keith Jones reports that on the acreage the Vernon Klockenga family farms they usually rotate two years of corn and one year of beans to bring production up and disease down. Jones said, "It seems to be what works best."

Crop rotation is not just for farmers. Home gardeners practicing crop rotation tend to find benefits of rotating crops including higher yield of vegetables and fewer complications from insect pests and diseases. This is occasionally difficult because of the limitations of backyard space, so some gardeners choose container gardening

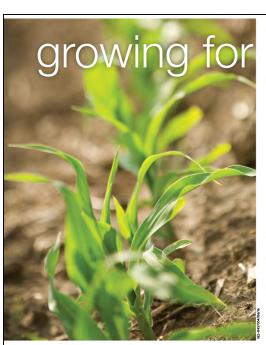
changing the soil at the end of each growing season.

There are risks with crop rotation: improper execution of a crop can cause more harm than good by taking time and money to repair the damage of nutrient build up. Also rotating crops does not allow a farmer to become an expert on a single type of crop. However, practice of crop rotation is can improve yields, increase soil nutrients, reduce soil erosion, limit pests and diseases, and maintain weed control.

Crop rotation is positive for farmers and home gardeners, alike!

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Diversity study conducted in Iowa from 2003 – 2011: <u>Increasing cropping system diversity balances productivity, profitability, and environmental health"</u>



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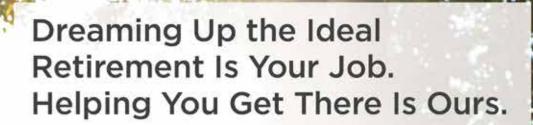
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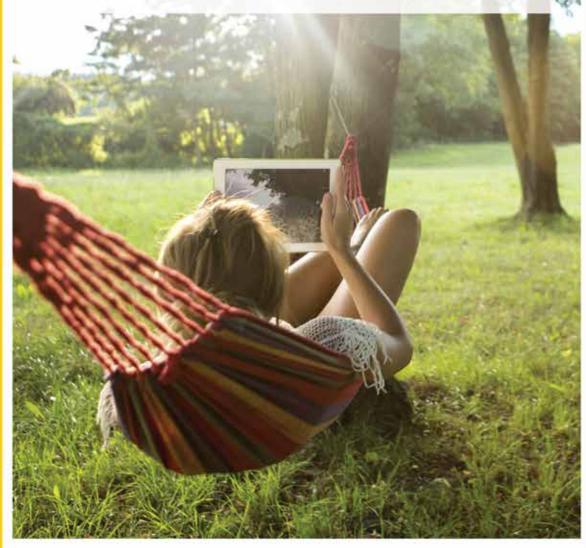


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MAKING SENSE OF INVESTING

The benefits of managing soil health

By Teena Lowery

Martin Family Farms of rural Mount Pulaski is a farming operation run by Jeff Martin and his sons, Doug and Derek. The operation also employs two full-time employees and around eight to 10 employees during harvest.

Doug and Derek both grew up on the farm and are sixth generation farmers. Doug has been involved in the family operation for 20 years while Derek has held a variety of Ag related jobs throughout his career. Derek came back to the family business five years ago after a ten-year stint managing Lake Fork Elevator. Both young men are innovators in agriculture, much like their father, Jeff.

Jeff Martin was one of the first farmers to implement no-till farming back in 1982 when he experimented with 40 acres of land.

The Martin family has always been very conscientious about conserving the soil and 2018 sees the family once again at the forefront of innovation. This time the family is on the cutting edge of reaping the benefits of making the soil healthy in order to produce a cost-effective crop in the everchanging Ag economy.



Doug and Jeff Martin of Martin Family Farms. Photos courtesy of Martin Family Farms.

Over time the Martins have seen the benefits of lower input costs, higher yields and overall improvement in the soil health, all which in turn allows them to produce crops at maximum efficiency.

"We've been working with different products and we are arriving at more of a conclusion to where the microbial process in the soil allows it to be more healthy, allows us to use more of the available nutrients that are in the soil," said Doug.

"Between that and the cover crops, we experiment with a lot of things, but the microbial process products seem to be giving us more of an advantage and making our soil healthier."

Derek jumped in to explain. "All of our soil has microbes in it, which are beneficial bacteria and fungi. It's either beneficial or non-beneficial. Currently a lot of it is non-beneficial given the

farming practices we've done for the last 50-100 years. We've destroyed those."

"A lot of the commercial fertilizers and chemicals have a high salt content and things like that which are detrimental to the beneficial microbes and fungi in the soil," added Doug.

"So with the non-beneficial, your soil is not as healthy, and so what we have tried to do here through this, is reintroduce beneficial bacteria and fungi to our soil, as well as get rid of the non-beneficials and try to get your soil healthier," explained Derek.

"The product we use is BioMax and we make it here. It has over 4,000 beneficial bacteria and fungi in it. What that does is it helps, for example, we spray it in the fall and put it in in the spring. In the fall on your leftover corn stalks or your bean stubble or whatever, it captures those nutrients that are left behind and keeps them and converts them to a readily usable form and holds them until the next growing season. Whereas before the non-beneficials would eat it and gas it off and we'd lose it.

"So, in comes the cover crop side of that. The more diverse your soil is, the better.

"We've been a monoculture corn, corn, corn - beans, beans, beans. So this gives it diversity. When your soil sees diversity it does different things and it also allows those microbial to feed. It's like a food source for them throughout the year.

"We have thousands of pounds of fertilizer, like P and K, phosphorus and potassium, that are in the soil that aren't in a readily usable form.

So, when you improve your soil biology and your soil health, it takes those nutrients that are there and converts them to a readily usable form, which in turn leads to less money out of the farmer's pocket on spending for P and K and to apply it. Because most phosphorus and potassium you put on this fall, maybe only ten percent of it is available to the crop next year.

"So through all this, Doug, Dad and I have gone through training. We've got microscopes, computers and labs here so we can take soil samples and then we look at each batch and we are trained now to identify good soil aggregation or bad soil aggregation. Or if you have anaerobic bacteria, which is non-beneficial, versus aerobic. We can identify all those things with a microscope and through a soil tests.

"With the soil aggregation, what that does is when you have a healthier soil it allows your soil to hold water, it allows water to infiltrate and get away faster and it allows you to hold more things."

"But it's also a process," chimed in Doug. "It's not something that happens overnight. We are saying it's a three to five year process to get the soils at the proper PH and fertility levels before you begin this process."



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CONTINUED ■

Oct. 25, 2018



This is a mix of crimson clover, oats, radish, and buckwheat that the Martin Family Farm uses for a cover crop.

"With a healthy soil you can hold more things," said Derek. "Like when we put nitrogen on in the fall. So, there are things called N-Serve, which is a nitrogen stabilizer. The idea is it keeps the nitrogen from leaching away or gassing off or converting. What we've been able to do is last year, if your soil is healthy enough, you shouldn't need something like a nitrogen stabilizer. It'll hold it's own without leaching away.

"So, last year we did no nitrogen stabilizer and we did a trial of 28 percent, which can be volatile or due to leaching away. We put



28 percent on a field, we split it in half, 28 percent and (in or as?) anhydrous. We found out this spring that we held that 28 percent all through winter, without any nitrogen stabilizer because our soil was healthy enough to hold that there."

"That's a real small scale and it's just the beginning stages of what could be," added Doug.

The Martin boys are on the cutting edge of something huge.

"We hope so," smiled Doug. "It might not be exactly what we are doing now, but it's a step in that direction as we develop these things it evolves. Just in the last two years, it's really evolved. And it changes, but we are kind of getting comfortable with some of the things. From where we started to where we are today, it's changed fifteen times, you know, how we're doing things, and it just constantly changes. But I do think it's a step in the direction where we will end up one day."

The Martins both stressed that soil health is the new fad in the agriculture industry. Derek noted that the topic is covered in every Ag magazine these days and all over social media.

"A lot of that is due to the Ag economy has been bad the last three to four years," Doug said, offering his perspective. "There has been negative farm income and it's bad for all of us. We are all feeling the effects of it. But a lot of those down turns in the Ag economy sometimes spur innovative things like this. People get a little more creative when they are not so comfortable with how things are going. They are looking for new ways to improve



Brothers Derek and Doug Martin stand next to a live batch of BioMax made in their shed at Martin Family Farms. Photo courtesy of Martin Family Farms

things or cut costs or improve efficiency. This is kind of a result of that. We are trying to figure out a more cost-effective way to raise crops."

"There are lots of products on the market that benefit soil health. There are other microbial products on the market and they may have one to ten different species of bacteria or fungi and it comes in a jug and not to say that the jug is bad, but there's not much diversity in it. That's where this process comes to be a little more different. We make it on site right before we apply it and we know it has 4,000 different strains of bacteria. It's live," stated Derek.

Both men stressed the importance of the product being live. Quality control is of the upmost importance as well they said. "Anybody can put something in a jug and sell it to you, but this is the biggest bang for your

buck, so to speak," said Doug.

"The raw materials we use, we are sourcing them on a more local basis," Derek. "When I say local, I mean more Midwest." Derek explained throughout the regions of the United States there are different microbes. "We are trying to source more local inputs for this product."

Martin Family Farms is a dealer for Agri-Bio Systems, the company that created this product, according to Derek.

Doug mentioned that locally Lake Fork Fertilizer and Herrin Fertilizer have customers that are using Agri-Bio products.

Derek noted that this product is in fourteen counties in Illinois right now.

"Not only is this new to us, but it's new



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to everybody in the Ag industry. We are learning more everyday," said Derek.

Both men emphasized that it's been a process developed over the last three to four years and it's continually been tweaked and gotten better as the Ag industry as a whole learns more about it.

Farming has come a long way over the past 100 years as farmers relied heavily on Mother Nature in the beginning and as new farming methods were introduced, farmers were allowed to control some of the elements even more. The Martin family was constantly taking notes.

"Kind of the basis behind this for years is farmers have focused on N, P and K ~ nitrogen, phosphorus and potassium," Derek went on to explain. "On the nutrient ladder there are nine nutrients in order of importance from one to nine. N, P and K are 5, 7 and 9. So farmers were focusing almost all of their time and resources on numbers 5, 7 and 9.

"So by using things like biologicals and cover crops we're are unlocking those things as well but we are also shifting some focus and dollars away from N, P and K and in other things like sulfur."

Sulfur is the number one nutrient on the nutrient ladder and Derek said their farm has been sulfur deficient the last couple years. Derek reiterated that there are also other things besides N, P and K that a farmer must pay attention to.

"In the beginning you may be taking money away from things like N, P and K and

focusing it more on biologicals or sulfur or boron, and then as your soil gets healthier, you see that yield boost," said Derek, who is a graduate of the University of Illinois. "Actually for three years in a row we've been able to reduce our total nitrogen applied and our yields have stayed the same or been better. We've been in this process a while and we're now starting to see that all come full circle."

"We started it on a small scale four or five years ago and verified it to ourselves before we've taken this step," said Doug, who is a graduate of Southern Illinois University at Carbondale. "We started with a 40 acre plot here and we watched how that evolved. It's really proven to us that we can go this next step."

Martin Family Farms has now been 100 percent for two years using microbes and cover crops, according to Doug and Derek.

Doug and Derek have also devoted a lot of time going to meetings with an agronomist and doing research year round.

"Our goal is for our farms to be profitable and our soil to be healthy and we want everybody else's to be that way too," said Derek, noting that they are willing to educate and work with local fertilizer companies in order to use this as a tool to enhance their customer's production."

This all goes hand in hand with the character and family history of the Martins. They are a family that cares about the land, they have a passion for farming and they are always on the cutting edge of the latest farming technology.

Creekside presents soil preservation workshop

By Catherine Carkulis

On Saturday, October 20th, 2018, Lincoln College hosted a free workshop "Solutions for Soil." The event was held at Creekside.

Creekside is also known as Lincoln Colleges' Outdoor Environmental Learning Center. Sugar Creek runs along the backside of the property. The center is recognized by the scientific community for its biological diversity and geological significance.

The workshop was a joint project of Lincoln College, the Cardno Native Plant Nursery, Logan County Soil and Water Conservation Agency, and the Logan County Natural Resource Conservation Service.

Dr. Pam Moriarty of Creekside opened the day by welcoming everyone and saying, "The goal of the workshop is to share what are feasible solutions to soil erosion." She introduced Eric Anderson and Angie Richter from the Cardno Company, who would talk about their soil erosion management program.

The Cardno Company helps municipalities, state and federal government, private property owners, developers, and contractors with stream bank erosion projects. They do remarkable erosion control planting, design and implementation work that provides

environmental protection of soil up to the next 10 to 20 years. The company provides such treatments as native planting and seeding restoration. They channel creeks and treat erosion shoreline. They also take care of problems with evasive control, modeling, and slope protection.



Eight years ago the Cardno Company helped select the seed for Creekside's one acre tall grass prairie.

Dr. Campbell said, "I bought plants to do the bioswale that holds water till it soaks in. Creekside depended on these plants."



FARM News&Safety

Facts and figures on farm safety

According to the Centers for Disease Control and Prevention, agriculture is among the most hazardous industries. Fatal and nonfatal injuries pose a significant threat to farmers, including the many young people who work on farms. The National Institute for Occupational Safety and Health, in an effort to promote productive and safe workplaces, supports programs that conduct research on injuries associated with agriculture as well as pesticide exposure, pulmonary disease, musculoskeletal disorders, hearing loss, and stress. Studying the results of such research, compiled by NIOSH, may compel veteran and novice farmers to further emphasize safety measures and promote practices that can reduce risk for accidents on the farm.

Estimates indicate that there were roughly 2.1 million full-time workers employed in production agriculture in 2017 and between 1.4 and 2.1 million hired crop workers employed annually on crop farms in the United States.

Each day, roughly 100 agricultural workers suffer injuries that cause them to miss time at work.

In 2014, 12,000 youth were injured on farms, and 4,000 of those youths could trace their injuries to farm work.

In 2016, 417 farmers and farm workers died from work-related injuries. Tractor overturns and other transportation incidents were the leading cause of death for these farmers and farm workers.

An estimated 893,000 young people under 20 years of age resided on farms in 2014 More than half of those young people performed farm work, and an additional 266,000 youth were hired to work on farms in 2014.

A rollover protection system, or ROPS, is a structure, similar to rollcages and rollbars in cars and trucks, intended to protect farm equipment operators from injuries caused by overturns or rollovers. NIOSH notes that a ROPS is the most effective way to prevent overturn deaths. Despite that, in 2014 only 62 percent of tractors used on farms in the U.S. were equipped with an ROPS.

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Lincoln College has an innovative conservation program with students participating in environmental studies and public education. The students presented a number of preventative solutions farmers could use on their croplands.

Creekside is surrounded by fields and along the creek nearby are steep bank drop-offs. Year's when there has been heavy spring flooding after planting time, it is common to see corn stalks falling over those edges.

Soil, nutrients and pesticides slowly ebb down the creek. Sugar Creek meanders into Salt Creek. The conjoined creeks join the Sangamon River, which then combines with Illinois River and eventually enters the Mississippi River and then empties into the gulf, where silting and contaminants have created significant problems.

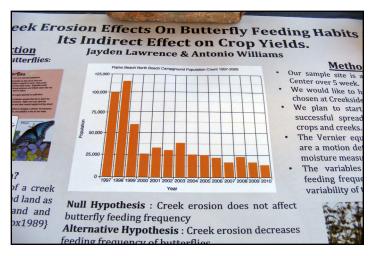
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There are effective ways to conserve soil by reducing erosion from wind and water. The benefits are multifold: to ensure the soil's fertility, keep soil where it is needed in the field, prevent soil and contaminants from entering waterways, which are damaging to the environment and costly to commerce.

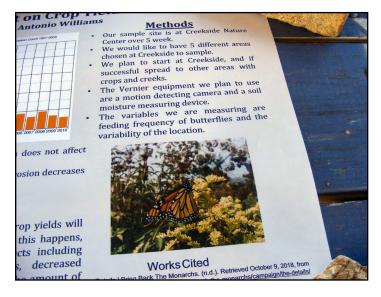
EcoLynx Secretary Alyssa Summers said one of the ways to control soil eroding into Sugar Creek is for farmers to cut back on how close they plant to the creek bank. Reducing by just two rows would help prevent erosion damage.

A buffer zone of prairie grass also helps to manage erosion as roots help hold soil in place and upper vegetation protects from wind and water movement. Some field nutrient run-off is also absorbed.

"Lincoln College needs to collaborate with farmers to make sure everyone is on the same page," Summers said.



The zoology class at Lincoln College presented posters that emphasized the effects that soil erosion has on wildlife such as flooded banks that wash out otter's homes. Erosion also causes shallow, slow water and depletes oxygen to fish, reduces food to turtles and the native species as well.





Soil erosion from farmland compromises alkalinity in Sugar Creek's water and leads to adverse health effects for humans, aquatic organisms, and adds financial distress to recreational fishing industries in other locales.



Practical soil conservation measures suggested by environmentalist Rinkesh Kukreja:

- [1. Buffer strips come in handy for soil protection where stream banks exist. Farmers can create them with tall grass, trees and shrubs that root deep into the ground.
- 2. No-till farming allows crops to stay in place a season and keeps soil from being left bare. Good for soil composition.
- 3. Plant windbreak areas composed of trees, shrubs and plants to slow the force of wind over ground area and soil erosion.
- 4. You can maximize the topography by terrace planting. It will encourage growth from moist soil areas and cause a natural flow of water.
- 5. Planting trees to secure roots in the soil that prevent erosion.
- 6. Farmers can rotate their crops to prevent overgrowth of pathogens and a lack of fertility in the soil.
- 7. Maintain Ph: pollutants and acids are bad on soil. The higher the alkaline level, the more resistant water is to chemical pollution.
- 8. Monitor growth by checking salient composition and fertility.
- 9. Accent vegetation can work to prevent runoff and help plants grow properly. Such plants are rye and clover.]

Creekside Director Dr. Dennis Campbell said the basis of all bio tend to be soil. The terrestrial of all ecosystems along with



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the climate and organisms is literally the foundation of humans.

Creekside was developed for the students and its Lincoln community. It is a small outdoor exhibit of everything environmental you can think of: 1,250 sq. ft. greenhouse, insectarium, education pavilion, bioswales, retention pond, restored grass prairie, pollinator plot, wind and solar energies, and new this year is the Wibben Overlook platform along Sugar Creek. The boardwalks and sidewalks made by the Rotary make the grounds handicapped-accessible.

Creekside is considering hiring the Cardno Company this year to manage soil restoration. The treatment of soil erosion will be a boon to the different studies of soil by Lincoln Colleges' agriculture, biology, geology and zoology students.

Dr. Dennis Campbell added that Lincoln College has a transfer agreement with the University of Illinois for students pursuing a degree in agriculture. They must complete their two years degree to qualify for the U.of I.

After presentations, Dr. Moriarty took everyone through Creekside to show what the students have been doing and different things they have encountered. Contact dcampbell@lincolncollege.edu to book outings at Creekside including school events.

Sources:

www.cardno.com



Lincoln College Receives Environmental Grant for Conservation Projects http:// archives.lincolndailynews.com/2018/May/12/ Features/TL051818 lcgrant.shtml



On June 19, this ripe wheat field north of Lincoln would be harvested in a few days and planted for soybeans.





Our 18th year of serving the community.

Thank you for reading our Logan County Farm Outlook edition. We hope you enjoy reading the fresh, original stories as much as we did gathering them for you.

The farmers are the great hub in the local economic wheel, and the farm industry and farm community are an integral part of not only Logan County, but LDN as well.

Every one of the businesses and individuals interviewed in this special edition talked about how essential farms and farmers are to their success, and we want to echo the same at LDN.

The farm families are our readers. The businesses that help supply the various needs to farmers are our advertisers. We can't be successful

We wanted to make this edition different from other special editions that we have done over the years, and we trust we have.

This magazine will be online at LDN for an entire month beginning October 25th.

It has been our pleasure to celebrate our farm industry in this publication, and we thank you for your continued support of Lincoln Daily News.



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