Agriculture Newsletter Pulaski County

T.J. Adkins, Agriculture & Natural Resources Agent



X10D: A NEW ERA OF CONNECTIVITY FOR THE BEEF INDUSTRY

By Les Anderson, Extension Professor, University of Kentucky

Remember trying to find a remote location "back in the day"? To find a remote town in an unfamiliar place required work. First, we would likely ask our friends and neighbors if they knew of the place and could write down directions. The accuracy and dependability of these directions were quite variable. But it was cheap and obtaining the directions was easy. Sometimes, perhaps, we found a Road Atlas. For the younger generations, this was a hardcopy book or pamphlet that had the names of towns and the roads connecting them. Normally very accurate but not always simple to use and cost a few dollars. Then the journey began. Maybe you could drive right there but most often wrong turns and maybe even stopping to ask for directions. A few times.

But technology has really changed our ability to navigate the world. Today, type an address in your phone, leave the sound on, and you will get turn by turn navigation to your goal. If you want to eat, type in "restaurant near me" and you will get a ton of choices. And directions to get there!

Events Coming UP

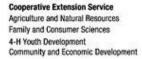
April 6th 7:30 am: Ag Council Meeting; Extension Office

April 11th 6 pm: Estate Planning Workshop; Hal Rogers Training Center

April 12th 6 pm:
Livestock Fencing
Program; McCreary
County Extension Office

April 18th 6 pm: Estate Planning Workshop; Hal Rogers Training Center

**Always RSVP for any and all events. This helps us insure we have plenty of space, supplies and food. Thank you so much for your cooperation with this. You can call 606-679-6361.





It struck me the other day that the beef industry is similar in some ways to navigation. Most beef producers have goals, targets for their enterprise. Even though the lifestyle is likely the biggest draw to raising cattle, I think many producers would like to profit. But their path to profitability is like navigation from "back in the day". According to the USDA, nearly 100% of cattle producers say they take records but only 3% use electronic methods for data collection and management. I know a lot of producers and I think these numbers are pretty accurate. Most write things down, but few write everything down. We get weaning weights, sometimes, cow weights occasionally. Maybe vaccination dates. Seems like we are trying to reach a destination with handwritten directions to the beginning of the trip, but the last few turns are left out!

In 2014 the KADB funded the UK Farm Program, a cooperative effort of UK Beef Extension and Kentucky Beef Network. This program was designed to provide participants with modern beef practices, demonstrate their adoption into these farms, and then document the outcomes. Since we had as many as 147 farms in this program at one time, we needed a tool to help us with data collection and management. We found several options in the industry but, frankly, they were all too expensive and far too complicated. So, we decided to make our own.

Thanks again to the KADB, we received funding to develop new program to help cattle producers "navigate" to higher revenue and profits. This new app is X10D (pronounced "extend"). X10D is a cloud-based web/app interface and can be used on any device (iOS, Android, PC). X10D is designed to conveniently connect cattle producers with the information they need for their operation to grow and thrive. X10D has three major components; Learn, Connect, Manage.

The Learn component is the users connection to the Cooperative Extension Service. Educational content will be pushed to the system and available to users on any device in a fast, simple, convenient, searchable format. State and local events will be publicized, and all users will have access to unbiased information from a trusted source. It will take some time to populate the database with educational content, but it will be worth the wait. The Connect component is an exclusive social media feed designed strictly for beef cattle producers, agribusinesses, extension professionals, and veterinarians in each county. Users can post questions, events, comments, sale items, or items for purchase to other users in their county. Both components connect users with information.

The Manage component helps users collect and manage data from their beef cattle operations. Depending upon the size of your herd, setup will take a little time. Typically, it takes about 1-2 hours to input the animals in a normal 30 cow herd. Once your herd is in the system, collection and reporting are incredibly easy. Data input and recording is simple with most inputs requiring fewer than 10 button pushes and takes less than 30 seconds to enter. Reports are even easier as most can be obtained in fewer than 4 button pushes and less than 20 seconds. Imagine spending less than 1 minute a day recording your management data and yet having all that data available anytime, anywhere, on any device.

If interested, you can go to the website, x10d.org, and signup for the PC version. The app is now available for use on Android and Apple devices by going to the app store and searching X10D.

The Pulaski County Agriculture Development Board has purchased a 3 year subscription to X10D for any Pulaski County producer that is interested. We highly recommend calling your local ANR Agent to get the promo code .Even if a promo code is not available, X10D only cost \$20 per year per farm, less than one trip for your family to a local fast food restaurant. Revenues collected will be used for maintenance and upgrades to the system. Any additional funds will flow through the Animal & Food Science Department at UK and used for beef extension programming.

Fast, convenient access to information can put the world at your fingertips. The beef industry has lagged behind but no longer. Give X10D a try. We are confident you will see a difference.

Website: XIOD.com

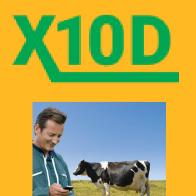
Beef educational content is created by Extension Specialists and Agents daily.

Content is normally created, peer reviewed and then pushed for review by each

County ANR Agent. If suitable, the content is pushed to the system and users

receive links to the content each morning in their notifications on their phone, PC,

or other device.

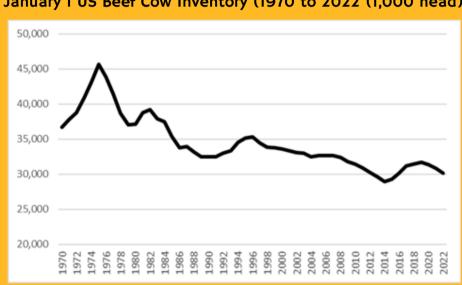


Beef Cattle Numbers Continue to Decline

Dr. Kenny Burdine, Extension Professor, Livestock Marketing, University of Kentucky

USDA-NASS released their January I, 2022, cattle inventory estimates on January 31st. Beef cow slaughter was significantly higher in 2021, so expectations were for continued contraction of cattle inventory. The USDA report confirmed that and provided some perspective on the magnitude of these decreases. Total cattle and calves were down by 2%, which was a slightly larger decrease than pre-report estimates. As an economist in a predominantly feeder cattle state, I tend to pay more attention to the number of beef cows in the US, which was down by about 2% as well.

An important note to the report was that the January I, 2021, beef cow inventory estimate was revised downward by over 300 thousand cows, which is about 1%. Perhaps a better way to put beef cow numbers in perspective is to consider the total change in beef cow inventory over the last three years. From the recent high in 2019, beef cow inventory is down by more than 1.5 million head, which is about 5% of the total cowherd. Put simply, calf crops are getting smaller and will continue to do so in the coming year, which is bullish for feeder cattle markets. The following chart plots US beef cow inventory going back to 1970.



January I US Beef Cow Inventory (1970 to 2022 (1,000 head)

Source: USDA-NASS and Livestock Marketing Information Center

Heifer retention is also important as it provides some perspective on future trends in beef cow inventory. January heifer retention estimates were down by more than 191 thousand from 2021, which is about 3%. This suggests continued contraction is likely during 2022. Of course, weather will play a key role as well.

The Kentucky estimates were also interesting, and many people had commented to me on how many cows had moved through auctions last year. USDA estimated a decrease in Kentucky beef cow numbers of 0.7% during 2021. There was also a slight decrease in the January 2021 beef cow inventory estimate. I would not have been surprised if the beef cow inventory was even lower in Kentucky, but this does put the cowherd in the Commonwealth at the smallest level seen since 1968. Heifer retention was also estimated to be down by more than 7% in our state.

The cattle on feed estimate from this report is also worth discussion and stands out a bit as it shows a slight increase from last January. For perspective, I would point back to the January Cattle on Feed report, which reflects on-feed inventories at feedyards with one-time capacity over 1,000 head. First, heifers on feed were higher in that report, which is consistent with fewer heifers being held for replacement and continues to point to a decreasing cow herd going forward. More females are moving into the beef system. Secondly, and probably most significantly, December placements were up 6% in 2021. But the largest increases were in the lower placement weight categories, which suggests they may be more a function of dry conditions in the Southern Plains forcing producers to move cattle out of wheat grazing programs. If this is the case, those are cattle that would have been placed on feed this spring, so it speaks more to the timing of their placement, than total cattle supply.

12-Point Checklist to Ensure Your Planter is Ready for the Field





With the 2022 planting season officially underway, we will start seeing more row-crop planters rolling in the fields in next few weeks. For growers to have a successful and stress-free planting season, it is important to make sure that planters are well maintained and ready to go before heading to the field. When it comes to planting, preparation is the key as any breakdowns in the field due to planter malfunction or planting mistakes can cost growers both valuable time and money. We all know that timely and uniform stand establishment is important to maximize yield potential early in the season and one of the main factors that can affect crop stand is planter setup and operation as it influences where and how uniformly seeds are placed in the soil. Spending time on planter setup and preparation to get it field ready goes long way for growers as it not only helps minimize downtime in the field but a successful crop stand also sets the stage for rest of the season.

Before heading to the field, here is a 12-point checklist for growers to consider to make sure that your planter is well maintained and dialed in for peak performance during planting.

- I. Parallel Linkages Stand behind the row unit and wiggle it up and down and left and right to check for any play in the parallel arms, and adjust or replace linkages and bushings to make sure row units are secured nice and tight on the planter.
- 2. Drive System Check all chains, idlers, sprockets and bushings, and replace any parts that are too worn. Make sure all drive chains are snug and do not have any unnecessary jump or vibration when operating. Lubricate all chains and sprockets before begin planting and regularly in the season. Additionally, check all drive system parts including flex drives, hydraulic drives and lines, and electrical drive systems including connectors and wires.
- 3. Tire Pressure Check and maintain proper air pressure in the tires as recommended by the manufacturer based on the weight of the planter and planting conditions in the field. Independent of drive system, improper tire pressure can have negative effects on seed placement due to improper levelling of the planter toolbar.
- 4. Double Disc Openers Check that the double disc openers are still sharp and within the diameter tolerance outlined by the manufacturer. Replace if they are dull or worn more than half an inch of their original diameter. Perform a quick check using a business card to ensure adequate contact (1.75 to 2 inches) between the disc openers at the 4 o'clock position.
- 5. Gauge Wheels Inspect the gauge wheels for any cracks or wear. Adjust the gauge wheels so that they run tight against the disc openers but just enough so they can easily be turned by hand with slight pressure. Gauge wheels should also move freely up and down without sticking in any position.
- 6. Row Cleaners Check row-cleaners for any wear and replace any bearings if they are not turning freely. Floating type row cleaners should also travel up and down to effectively clear soil/crop residue out of the way.

- 7. Seed Meters Inspect each seed meter thoroughly for any wear or damaged parts including vacuum seals, brushes, scrapers, and doubles eliminator. Ensure that the correct crop kit (for newer meters) is installed in the meter. If not utilizing a seed monitor (capable of by-row feedback) during planting, it is also recommended to run the seed meters on a test stand to check performance and make any necessary adjustments.
- 8. Seed Tube Check seed tubes for any cracks and wear at the bottom. Seed tubes should also be cleaned properly to clear any debris or obstructions (seed, cobweb, etc.). Make sure that the seed sensor is secured properly to the tube and working as intended.
- 9. Closing Wheels Check that closing wheels are centered directly over the center of the row. Inspect closing wheels for any wear or play in the arms and replace parts or adjust as needed.
- 10. Vacuum Inspect the whole vacuum system including hydraulic motor, fan and hoses for any wear, leaks or loose fittings. Check that vacuum hoses are attached properly to the manifold and to the seed meters on each row unit.
- II.Downforce For mechanical (spring type) systems, check all the components thoroughly and make sure different downforce adjustments can be made easily. For pneumatic or hydraulic systems, inspect all air or hydraulic connections carefully and perform a static diagnostic test to verify that the downforce system is functioning properly. This includes the compressor for air systems, in some cases it stays in the cab and can be neglected.
- I2.Technology Check that the GPS receiver and planter display have the most recent firmware upgrades installed and are functioning properly. Check if the GPS correction subscription services and any other display unlocks for advanced planting features are activated and paid for rest of the season. Perform a thorough inspection of all technology components including sensors, harnesses, ECU's and connections to ensure everything is connected and functioning properly. Also, make sure to back up planting data from the previous season on a computer or an external storage device before start recording this year's data.

Keep in mind that once in the field, growers should get out of the tractor and check seed depth, placement and seed-to-soil contact during the first pass, and adjust planter settings as needed to optimize planter performance within each field. Also, check all of these parameters anytime field conditions change drastically, and especially when changing crops.

The USDA report is summarized in the table below and the full report can be accessed at: https://downloads.usda.library.cornell.edu/usda-esmis/files/h702q636h/pn89f870n/jw828f69f/catl0122.pdf

USDA January 1, 2022 Cattle Inventory Estimates

	2021	2022	2022 as
	(1,000 head)	(1,000 head)	% of 2021
All Cattle and Calves	93,789.5	91,901.6	98
Cows and Heifers That Have	40,286.0	39,500.1	98
Calved	, , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , ,	
Beef Cows	30,843.6	30,125.1	98
Milk Cows	9,442.4	9,375.0	99
Heifers 500 Pounds and Over	20,200.1	19,776.0	98
For Beef Cow Replacement	5,803.1	5,611.5	97
For Milk Cow Replacement	4,608.5	4,450.6	97
Other Heifers	9,788.5	9,713.9	99
Steers 500 Pounds and Over	16,787.8	16,579.7	99
Bulls 500 Pounds and Over	2,210.5	2,109.6	95
Calves Under 500 Pounds	14,305.1	13,936.2	97
Cattle on Feed	14,667.4	14,692.6	100
	2020 (1,000 head)	2021 (1,000 head)	2021 as % of 2020
Calf Crop	35,495.5	35,085.4	99



Reducing Your Dependency on Commercial Fertilizers Strategies for Cattle Farms in 2022 and Beyond

Fertilizer prices have risen to all-time high levels in the last few months. Table 1 shows these increases over the last year for the most common commercial fertilizer sources used by cattle farmers. Nitrogen and potassium fertilizers have both more than doubled over the last year.

Table 1: Fertilizer Price Increases 2022

Spring 2021 Winter 2022 **Fertilizer** \$/ton \$/unit \$/ton \$/unit \$370 Urea (N) \$0.40 \$920 \$1.00 DAP (P2O5) \$515 \$0.40 \$860 \$0.54 Potash (K2O) \$370 \$0.31 \$815 \$0.68

For an acre of hay fertilized at 60 units N, 30 units Phosphorous (P2O5), and 100 units Potassium (K2O), this would increase the overall cost from \$67 to \$144 per acre, an increase of \$77 per acre. For an acre of pasture fertilized at 60 units N, 10 units Phosphorous (P2O5), and 33 units Potassium (K2O), this would increase the overall cost from \$38 to \$87 per acre, an increase of \$49 per acre. If we assume one acre of hay and two acres of pasture needed per cow, this would amount to a \$175 increase in cost for every cow in the herd. For a 50 cow herd, that would be an increased fertilizer bill of nearly \$9000, or roughly \$16,000 total. This total fertilizer bill would represent over 40% of the calf crop at expected prices this fall for a typical spring calving farm.

The most common advice I have heard about managing these prices increases have been to increase soil testing, and to not fertilize when you are in the medium level for P and K. These recommendations may help reduce fertilizer expenditures, but they are not going to make a significant dent in that \$9000 increased cost. This article focuses on three practical methods that can significantly cut fertilizer costs on cattle farms, and to possibly eliminate the dependency on commercial fertilizer entirely.

1) Use Legumes Instead of Commercial N

I have been amazed by the amount of commercial nitrogen that is used on cattle farms in Kentucky. Decades ago when it was cheap it may have made more sense. However, at \$.40/unit it is an expensive way to boost production, and at \$1.00/unit it is economic suicide. Table 2 shows the cost to obtain an extra ton of forage production using commercial nitrogen at two prices (spring 2021 and winter 2022), and compares this to getting similar production increases with clover or annual lespedeza.

In a good year, 50 units of nitrogen applied in early spring would likely get around one ton of extra forage production (40 lbs of dry matter production per unit N) on a conventionally managed farm in Kentucky. At \$.40/unit and with a \$6 per acre application cost, that would translate to \$26 per extra ton of forage produced. At \$1.00/unit N cost, it would translate to \$56 per ton forage produced. If hay is selling for \$60/ton (roughly \$30 for a 5x5 bale), you would have a \$4 per ton margin to pay for everything else in making that hay - good luck! Now compare this to getting this same increased production from seeding clover or annual lespedeza. The clover seeding would be every three years, the lespedeza every year. With a \$24 clover seeding cost plus the \$6/acre application cost once every three years, it would cost \$10 per ton forage produced if we averaged one extra ton of forage per year. If we got 1.5 extra tons of forage per year from the clover seeding, the cost per ton would decrease to \$7. Both of those figures are well below the \$26 per ton cost for \$.40/unit nitrogen, and a small fraction of the \$56 per ton cost at \$1.00/unit nitrogen. Seeding annual lespedeza at \$16 per acre cost every year doesn't look quite as good as the clover (\$20 per ton vs. \$10 per ton at the 1.0 ton increase level), but almost all of that production will come in July and August when pasture forage is needed the most. Pasture forage produced during this time is more valuable than forage produced in late April and May when you are generally swamped with too much pasture growth.

Table 2: Cost per Ton Extra Forage Produced Various Methods

Extra Forage Production (tons)	50 units N \$.40/unit	50 units N \$1.00/unit	Clover \$24 Seeding	Lespedeza \$16 Seeding
0.5	\$52	\$112	\$20	\$40
1.0	\$26	\$56	\$10	\$20
1.5	\$17	\$37	\$7	\$13

Moreover, with both the clover and lespedeza, the quality of the increased forage will be much higher than typical fescue pasture or hay. It seems like a slam dunk for using legumes. So why do so many cattle farmers continue to rely on commercial nitrogen? From my experience, the first and most important reason is tradition. Many of these cattle farms have been applying fertilizer for multiple generations, in many cases back to an era when nitrogen was relatively cheap. Another important reason is that the management skills for getting good growth with nitrogen is much lower than getting good growth with legumes. In many cases all that is necessary is one phone call in March to get it done. It takes better management skills to establish and keep a good stand of clover. A final reason is obsolete soil test recommendations. For example, the University of Kentucky soil lab recommendations for grass-based pasture is to apply up to 100 units of N Feb. 15 – March 15, and up to 50 units of N May 1–15. While this might make sense on hay ground with cheap nitrogen, it won't pencil out with anything close to current prices. Moreover, applying high amounts of nitrogen on spring pastures is like pouring gas on a fire: You will never be able to keep up with the added growth.

There will typically be a transition period going from a commercial N-reliant system to a legume-based system where forage production is poor. Soils that get regular doses of commercial nitrogen become dependent on it, just as people that get regular doses of drugs become dependent on those drugs. Removing that dependency will be painful in the short run and there will be a transition period before either can function well without them. Do not attempt to establish legumes and continue to apply commercial fertilizer. Doing so is like driving with one foot on the accelerator and one foot on the brake: the increased grass production will choke out the legume seedlings. First-year production for clovers seeded into a grass sod will usually not have significant production in the first year. They are establishing and you will not get the full benefit from that clover until the second year. However, with annual lespedeza, you will get all of the benefits in that first year as it is an annual, and you will get the bulk of its growth when it is needed the most in July and August. It also does well with less-than-ideal fertility conditions and in pastures that have low biological activity. Thus I consider annual lespedeza to be a great "bridge" legume for the 1-2 year transition period. You can also seed clover with the annual lespedeza for the next year's production.

2) Feed Hay to Retain Nutrients

Most cattle farms in Kentucky will feed 2-3 tons of hay per cow in an average winter. This amounts to approximately 72-108 lbs N, 24-36 lbs P, and 104-156 lbs K cycling through the cows. In theory, around 90% of these nutrients could be retained on the farm to feed the next year's crop of hay and pasture. In practice, we have cattle farms that need constant applications for P and K, as well as N if they have not learned how keep good stands of legumes in their pastures and hayfields.

Confinement feeding is the primary reason for this loss of nutrients, whether in a sacrifice area, feeding pad, or conventional feeding barn. "How could this be?" many cattle farmers will ask? "We scrape up every last bit of manure from our feeding pads and spread it back on our pastures and hayground each spring. We must be getting the bulk of the benefits of those nutrients".

Or not. Approximately 90% of the potassium, and 67% of the nitrogen that comes out the back end of a cow is in the urine. Unless you have a deep, high-carbon source such as sawdust on that concrete pad to soak up and hold the urine, most of it will be lost. If you have your doubts, here is an on-farm experiment you can conduct: Fill a 100 gallon tank with water and dump it out on your concrete feeding pad, wait 30 seconds, and then see how much of the water you can scoop up with your frontend loader. If you capture more than 5 gallons you just set the Kentucky Olympic record.

Still don't believe it? A Saskatchewan analysis compared feeding directly on pasture where bales were fed in a checkerboard fashion to frozen drylot feeding which mimicked a feeding pad. Nutrient capture and subsequent forage growth were compared in the two systems where the manure from the same number of cows was spread back onto an equivalent amount of pasture for the drylot system. Soil inorganic N (easily available to plants) was 187 percent higher and extractable potassium was 185 percent higher in the direct-fed pasture system. Subsequent forage growth over the next two years was 127 percent higher and protein levels of this forage were 74 percent higher in the direct-fed pasture system. The results from this research indicated most of the nutrients from confinement feeding are being lost.

Unrolling hay or bale grazing are the two best ways to retain nutrients on your farm from winter hay feeding. The Saskatchewan direct-fed system used bale grazing, but unrolling hay would have had a similar effect. I prefer bale grazing due to the substantial reduction in equipment hours needed as well as keeping equipment off pastures when they are wet. But unrolling hay is exponentially preferred overfeeding in sacrifice lot, feeding pad, or feeding barn. I have been bale grazing on one of my farms for over a decade now and have never had to apply a pound of commercial fertilizer. Ed Rayburn, Extension Forage Specialist for West Virginia University has been bale grazing for two decades on his hayfields and has maintained soil test levels for P and K without adding one pound of commercial fertilizer. For the basics of bale grazing see the "Feed Hay the Rotational Grazing Way" article in Hay and Forage Grower or watch the recorded presentation.

3) Reduce Your Stocking Rate

There is a tradeoff between having a high stocking rate where you sell more calves on the farm, but incur a high amount of costs, versus a low stocking rate, where you sell fewer calves, but have a much lower cost structure. Not just overall costs, but a lower cost per cow. There are a lot of variables that go into the calculus of what the most profitable stocking rate will be on a particular farm, but the two biggest drivers will be the cost of hay for that farm, and the marginal profitability for that farm (the gross profit of adding or removing one more cow). Without going into details, I will summarize that the vast majority of commercial cow-calf farms in Kentucky are overstocked and feeding too much hay. The average cow-calf farm in Kentucky is likely feeding 120-140 days in a normal year, while in most situations the most profitable number of hay feeding hays will be around 60-90 days. In that analysis, I assumed a cost structure that used no nitrogen and had replacement rates for P and K with pre-2022 fertilizer prices. By reducing your stocking rate and feeding less hay, you will substantially reduce your dependency on commercial fertilizer. For details of the analysis see the "Find the Hay-Feeding Days Sweet Spot" article in Hay and Forage Grower.

Summary

Calling your farm supply store each spring to buy your fertility may be a convenient and easy way to maintain good yields. It is also expensive. Even at 2020 prices, cattle farms that relied heavily on commercial fertilizer effectively traded away most of their potential profits for that convenience. At 2022 fertilizer prices, they will trade away a lot more than that. It is also wasteful. Well-managed cattle farms should have a closed nutrient cycle. On farms that are constantly bringing in commercial fertilizer, that effectively means nutrients are leaking out of that system. At some point in the future, if we don't collectively close the nutrient cycles on our farms someone else will offer to do that for us. One silver lining of high fertilizer prices will be that it provides an incentive to figure out how to get that done on our own. In the long run, that will be a winning approach for everyone. You can

complain about high fertilizer prices or you can do something to reduce your dependency on them. What will be your strategy for 2022 and beyond?

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Check out our conversation with Dr. Andy Bailey on tobacco greenhouse production.

Everything you wanted to know and then some!! Look up Podbean and search the name to listen!



Podcast brought to you by Western Kentucky Ag Network.

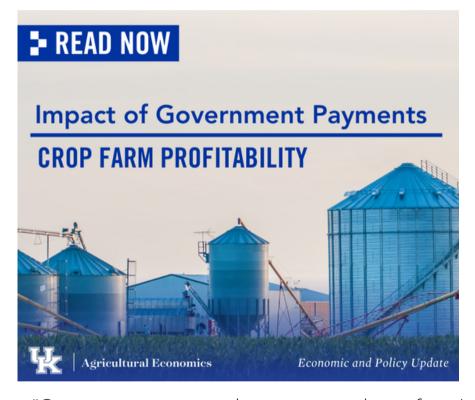


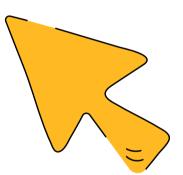
pb-z3fwj-11cad1e <u>Click here</u> to visit the page. Higher labor cost isn't new news these days, but where does that leave your budget?

Our 2022 tobacco budgets have been updated and Will Snell has included some general observations for burley, dark, and cigar leaf tobacco in his most recent Economic & Policy Update article.

Read now >> https://agecon.ca.uky.edu/2022-tobaccobudgets







Look these up to read the full articles!

"Government programs have supported crop farm incomes most years," writes KFBM Program Coordinator Jerry Pierce.

But to what extent?

Using data from KFBM client farms, Pierce looks at total net farm income and income from government payments over the past 10 years in his short article "Impact of Government Payments" to gauge the significance of government programs aimed at supporting farm income.

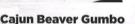
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Pulaski County Extension Office P.O. Box 720 Somerset, KY 42502 Phone: 606-679-6361



TRY SOMETHING



- · 21/4 pounds cubed beaver meat
- ½ teaspoon black pepper
- 11/2 teaspoons garlic powder, divided
- · 1/2 cup canola oil, divided
- 1 cup all-purpose flour
- · 2 bell peppers, diced
- · 2 ribs celery, diced
- · 2 medium white onions, diced
- · 12 ounces turkey smoked sausage, sliced
- 1 tablespoon Creole seasoning
- · 2 bay leaves
- 1 6-ounce can no-saltadded tomato paste
- 1 quart reduced-sodium chicken stock
- 2 quarts water
- 1. Wash hands with warm water and soap, scrubbing for at least 20 seconds, especially after handling raw meat.

- 2. Wash peppers, celery, and onion under running water before cutting.
- 3. Season beaver meat with pepper and 1/2 teaspoon garlic powder.
- 4. Heat 1/4 cup oil in a 6-quart nonstick or well-seasoned cast iron pot over medium-high heat. Brown the beaver meat in batches, turning to brown all sides. Add the remaining oil as needed to prevent the meat from sticking to the pot.
- 5. Remove beaver from the pot and set aside. Leave any remaining oil in the pot.
- 6. Reduce heat to medium. Add any remaining oil and the flour to the pot, stirring well with a wooden spoon. Cook and stir until the mixture is about the color of peanut butter, about 10 to 15 minutes. Reduce heat if

- needed to prevent burning the flour mixture.
- 7. Add peppers, celery, and onion to the pot, and stir until the vegetables begin to soften.
- 8. Return cooked beaver to the pot.
- 9. Add remaining ingredients. Cover and simmer for 2 hours.
- 10. Serve immediately. Store leftovers in the refrigerator or freezer within 2 hours. Divide leftovers into smaller containers to allow quick cooling.

Serving suggestion: Serve over cooked rice. Yield: 15 servings Serving Size: 1 1/2 cups

Nutrition facts per serving:

270 calories; 14g total fat; 1.5g saturated fat; 0g trans fat; 20mg cholesterol; 260mg sodium; 13g total carbohydrate; 2g dietary fiber; 4g sugars; 0g added sugars; 23g protein; 0% Daily Value of vitamin D; 4% Daily Value of calcium; 35% Daily Value of iron; 10% Daily Value of potassium.