Master Cattleman Quarterly

Oklahoma State University

Profit Points to Remember for the New Year

Roger Sahs, Assistant Extension Specialist

Another year in the cattle business is almost in the books. While cattle prices aren't quite as high as we have seen in recent years, they are certainly better than last year. However, with the likelihood of larger calf crops on the horizon over the next several years, the cattle industry may face a number of profitability challenges if prices drop back to 2016 levels. Successful cattle producers have a flexible and adaptable game plan that deals with the swings in the weather and markets. And while there any number of factors that can help keep the operation in the black, the profit points listed below should be on everyone's list.

Don't neglect your pasture productivity. Proper stocking rates are a key variable as to the long-term economic and environmental sustainability of a livestock enterprise. The best grazing managers monitor their forage so that they know how much forage they have and how much they need. They consistently check rainfall, available forage levels, and body condition scores relative to the class of livestock and reproductive stage. Many of the greatest ranch failures, both economically and ecologically speaking, have come from rigid stocking rates no matter what the forage conditions.

Have a herd health management plan in place. A special emphasis on keeping death-loss numbers low is an obvious boost to the profit side. Many animal health problems may be alleviated with proper nutrition and a sound vaccination protocol against disease. Herd health programs should be customized to meet the needs of individual producers and it is important to work with a local veterinarian to determine what agenda works best for you. Detailed records can help explain shed light on calf death loss statistics and other herd health measures.

Keep count with production and financial records. Few producers get excited about a good set of records, but when it comes to profitability, you need to manage your ranch as a business. A good set of records can reduce some rather unpleasant surprises regarding the profit points above. Accurate and up-to-date records provide facts about the business and keep plans grounded in reality. For example, cows that are open after the breeding season are good candidates to be culled. Records can disclose just how much a decision to "keep them for another year and give them a second chance" can eat into profits as there is no calf income to help pay the bills for another year. Curious about how your operation might stack up to other producers? Check out the Farm/Ranch Benchmarking video in the OSU Ag Finance YouTube library.

In today's cattle industry, it is important to focus on financial management as much as production performance. Producers need to have an eye for detail, be able to follow set procedures, and understand the risks involved. As the above reminders show, successful operators monitor their pasture conditions and check their herd health status often. Records provide the facts to make the necessary adjustments to keep them on the right path. A cattle producer interested in being profitable should expect to do no less.

For more information on these profit points and other ways to improve your operation, contact your County Extension Educator - Agriculture at your local Oklahoma Cooperative Extension Service office.

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In this issue:

Use of Whole Cottonseed in Beef Cattle Operations

Marty New, Area Livestock Specialist, Duncan and Dana Zook, Area Livestock Specialist, Enid

Oklahoma recently jumped into uncharted territory as the fourth largest cotton producer in the nation due to this year's bumper cotton crop. This is fantastic for cotton producers but equally great for those in the cattle industry who can capitalize on increased availability and more reasonable pricing of cotton by-products.

Some commonly utilized byproducts of the cotton industry are whole cottonseed, cottonseed meal, cottonseed hulls, and cotton burrs. Due to their low nutritional quality, burrs, hulls and another product called gin trash should be utilized solely as a fiber source for "scratch" and filler in rations rather than supplement. Each byproduct has its place in the beef industry, however, due to more favorable pricing, there is renewed interest for whole cottonseed as a winter supplement.

Feeding Recommendations

The unique protein and energy content of whole cottonseed has resulted in its increased popularity as a feed source for the beef and dairy industries. Cottonseed contains approximately 20% protein, making it comparable to conventional 20% winter supplements. Where cottonseed differs from other supplements is the fat level which is reported 16-18% in the current crop. For cows, fat is energy and it plays a role in the nutritional energy measure for cows. This nutritional energy measure is termed total digestible nutrients or TDN. Cottonseed will run 75-85% TDN making it a fantastic winter supplement. Producers should follow feeding recommendations because too much fat can reduce forage digestibility, ultimately reducing the value of the supplement.

In situations where cottonseed is being supplemented to cows in good body condition, no more than 0.5% of BW would be needed. In situations where cows need to make up body condition, a slightly higher level is warranted at 0.75%. For example, a 1200 pound cow in good condition could be safely fed 6 pounds of cottonseed on a daily basis. Whole cottonseed is not only a feed for mature cows but can also be used as a supplement for stocker calves. The feeding level is greatly reduced as no more than 0.3% of BW should be fed. For example, a 600 pound stocker calf should be fed no more than 2 pounds on a daily basis.

Producers should be aware that increased fat levels of cottonseed will cause cattle to have loose stools and so care should be taken to slowly adapt them to these levels.

Feeding Value Compared to Other Winter Supplements

When considering feeding whole cottonseed to a cow herd for a supplement, it is good practice to compare a variety of options. Some current prices of cottonseed have come down to where they are a comparable alternative to you standard 20 or 38% cube. Prices will vary so producers should compare the cost per pound of protein to understand the real value as a winter supplement. It is important to note the additional labor required for feeding the cottonseed compared to the cubes and the additional obstacles with storage.

Gossypol Toxicity

A drawback of some cotton byproducts is the potential for gossypol toxicity. Gossypol is a natural occurring yellow pigment found throughout the cotton plant, with highest concentrations found in the seeds. High levels of gossypol consumption can be toxic to cattle. Whole cottonseed and cottonseed meal are the primary sources for gossypol. Cattle can tolerate higher levels of gossypol when feeding whole cottonseed versus cottonseed meal due to whole cottonseed having a slower digestion rate.

Gossypol toxicity is of greatest concern for herd bulls. Limited research has shown reduced fertility in bulls fed cottonseed. Because of this, producers should weigh this risk and potential effects on bull fertility with the savings on feed. Keep in mind, feeding cottonseed at the recommended levels greatly decreases the incidence of reproductive failure and health concerns due to gossypol.

Storage and Handling

Just like any feed ingredient, producers should take measures to store whole cottonseed properly. Similar to forages baled too wet, whole cottonseed is susceptible to molding and combustion. To minimize losses, store seed that is less than 10% moisture in an area sheltered from rain. Be aware that whole cottonseed does not flow through augers well and will need to be handled with a scoop or front end loader. This may be a limitation for some producers.

Nutrient	Whole Cottonseed	20% Cube	38% Cube
DM, %	90	89	89
CP, %	20	20	38
Fat, %	16	2.5	3
TDN, %	75	77	78
Price/ton	160	260	430
Price/lb CP	***0.40***	***0.65***	***0.56***

Copper is Important in Beef Cattle Reproduction

Barry Whitworth, DVM , Area Food/Animal Quality and Health Specialist for Eastern Oklahoma

According to Dr. Keith Bailey, the director of the Oklahoma Animal Disease and Diagnostic Laboratory (OADDL), copper (Cu) deficiency has been a common finding in late term cattle abortions and stillbirths over the past 2 years. In a liver sample study from aborted fetuses in western Canada, magnesium, copper, and vitamin E were frequently identified as deficient in aborted fetuses. In addition to reproductive inefficiencies, low copper levels are also associated with poor performance and poor immune response. Copper is involved in many body functions such as hemoglobin formation, bone cell function, pigment production, hair, hoof and horn function, and animal growth. Since a review of all the health problems associated with copper in beef cattle would be too long for this writing, a review of copper deficiency related to reproductive performance will be addressed in this article.

Copper deficiency can be a primary deficiency or a secondary deficiency. An example of primary deficiency is when forages are low in copper. In Oklahoma most legumes such as alfalfa and clovers have adequate amounts of copper. However, most grasses in Oklahoma are deficient in the mineral. Secondary copper deficiency is more common. This is the result of another mineral(s) interfering with the uptake of copper. The most common minerals involved in this are iron, sulphur, and molybdenum. These elements will bind with copper which makes it unavailable to the body. Secondary copper deficiency may occur even if the diet has adequate amounts of copper.

Reproductive problems associated with copper deficiency in cattle are reduced fertility. This may present in many ways. Cattle may fail to conceive on their first breeding. In embryo transfer, embryonic survival was found to be lower. In some studies, overall pregnancy rates were reduced. Another problem with a low copper level is an alteration in reproductive behavior. In this case cows may show normal estrus behavior but do not ovulate. Also, future estrus cycles may be reduced. The effects of low copper levels on reproduction in cows are not consistent. They may be small or substantial. In bulls, evidence suggest that copper deficiency may cause problems in semen quality and decreased libido.

According to Dr. Dave Lalman, Professor and Extension Beef Cattle Specialist Oklahoma State University, producers can evaluate a mineral deficiency problem by reviewing their records. If the producer's records indicate good pregnancy rates, weaning weights, and no major health problems, then their mineral supplementation program is probably fine. Even if their performance records are good, they may want to follow up with a mineral balance review with the assistance of their nutritionist, veterinarian, or extension educator. The review will evaluate the animal's requirements and the minerals supplied by the forage, feed, and mineral supplement. Any deficiency should be addressed.

If copper deficiency is suspected in cattle, a producer needs to evaluate the animal's copper level. This can be accomplished by a blood test or a liver biopsy. Blood levels of copper become low only after using all the copper in the liver. For this reason, blood samples are only useful in diagnosing advanced cases. Since copper is stored in the liver, a liver biopsy will give the best indications of copper status of the herd. A liver biopsy may be obtained from a slaughter animal or a veterinarian may obtain a biopsy specimen from a live animal.

Producers may provide copper to their cattle by variety of methods. Copper may be added to the feed or supplied in a salt/mineral mix. An injectable product is also available. Recently, a sustained release bolus has been approve for mineral supplementation. Producers that also run sheep need to keep in mind that mineral mixes produced for cattle will be toxic to sheep. For any questions on what methods or products will be best for meeting the copper needs in cattle, producers should consult with their nutritionist, veterinarian, or local county extension educator.

In review, copper deficiency may be a problem in cattle herds grazing native and improved grasses in Oklahoma. Producers should review their cattle records for any indications of health or reproductive problems. Any problems may indicate a need to evaluate the copper status of their cattle. For any additional information about copper deficiency in cattle, producers should contact their nutritionist, veterinarian, or local county educator.

Oklahoma's Stocker Industry: A Preview

Derrell Peel and Kellie Curry Raper, Livestock Market Specialist, Agricultural Economics Department

Earlier in 2017, Oklahoma State University, in conjunction with USDA's Animal Plant Health Inspection Service (APHIS) and the National Agricultural Statistics Service (NASS), conducted a comprehensive survey of Oklahoma cattle producers. The primary objective of the survey was to identify stocker producers and to learn more about how the stocker industry in Oklahoma operates. Nearly 1500 anonymous producers responded to the survey, and though analysis will continue for some time, preliminary results are becoming available.

Producers were asked to identify all cattle production activities in their operations. The list included several cow-calf activities (selling at weaning, retaining calves as stockers, and retaining calves through the feedlot); and stocker/backgrounding production, including retaining stockers through the feedlot, as well as other production activities. Producers were asked to identify production activities that they use routinely as well as occasionally (at least once in the last five years).

Results indicate that Oklahoma cattle production is relatively complex. Although nearly half (49 percent) of producers indicated only one cattle production activity, the average across all producers was two production activities (Figure 1). Approximately 25 percent of producers indicated two production activities, with 11 percent reporting three cattle production activities, and 15 percent reporting four or more production activities. Reported number of production activities include routine practices as well as those identified as occasionally used by producers.

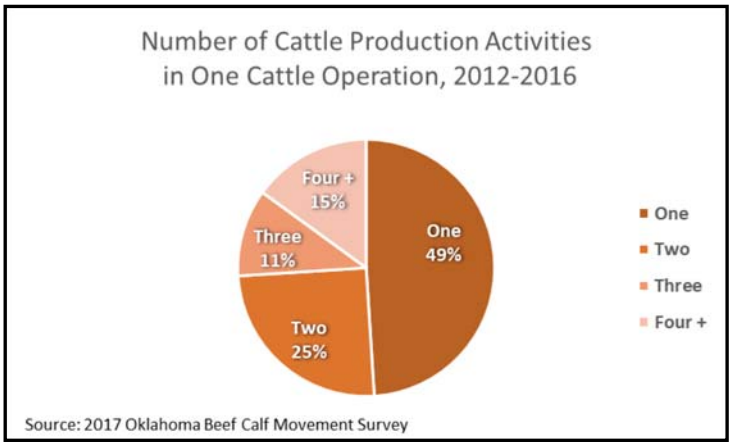

Figure 1. Number of Cattle Production Activities Reported by Oklahoma Beef Producers

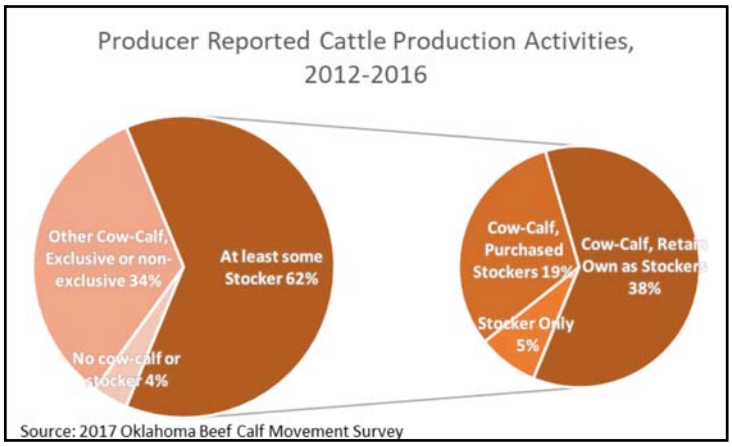

Figure 2. Producers Reported Cattle Production Activities

Figure 2 illustrates the distribution of producer-reported cattle production activities. Most producers surveyed reported cow-calf production activities (91 percent). Relatively few producers (5 percent) indicated only stocker/backgrounding production, though another 19 percent indicated stocker production in addition to cow-calf production. This does not include the 38 percent of cow-calf producers retaining raised calves as stockers. This indicates that approximately 62 percent of producers are involved in some way in the stocker phase of production, though many would not describe themselves as stocker operators.

Survey participants were asked to choose one of the production activities that they felt best describes their operation. Of those producers who chose a label, 58.4 percent labeled themselves "Cow-calf, Sell calves at weaning". However, of those who picked that label, just 53.2 percent indicated that selling weaned calves was their sole routine cattle production activity. This means that many producers who consider themselves primarily as cow-calf producers (selling at weaning) are involved, at least occasionally, in other types of cattle production as well.

The stocker industry is difficult to define, understand, or even identify. A variety of cattle producers are involved in stocker production including specialized stocker producers; stocker production in conjunction with cow-calf; and retained stockers from cow-calf operations. The stocker industry plays a varied and flexible but critically important role in the cattle industry. This survey will provide insight

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into stocker production and management practices, including timing and duration of stocker production; health management; forage use; purchasing and marketing of stocker cattle; timing and distance of shipping; and biosecurity practices. Stay tuned as more detail emerges from the broad array of survey information.

Management Calendar

Dave Lalman, Animal Science Beef Specialist

January Management Calendar

Spring-calving herds

- A 1,200-lb. cow in good body condition requires a minimum of about 12.9 lb. of TDN and 1.9 lb. of protein per day during late gestation.
- A 1,500-lb. cow requires approximately 15.3 lb. of TDN and 2.2 lb. of protein.
- The forage source should contain a minimum of 54% TDN and 8% protein during this period to meet requirements for maintenance prior to calving.
- If forage quality is lower than 54% TDN and 8% protein, supplementation will be required to avoid loss of cow body condition prior to calving.
- Prepare calving facilities and equipment. Purchase and organize calving supplies such as tags, navel dip, tattoo equipment and ink, calf scales, etc.
- Visit with your veterinarian to develop a written protocol before the calving season starts. This protocol should include what to do, when to do it, who to call (if someone besides your veterinarian is to be called), phone numbers, how to know when the veterinarian should be called, etc.
- Feed during evening hours to encourage daytime calving.

Fall-calving herds

- Remove bulls toward the end of January or early February to maintain a controlled breeding season of 60-70 days.
- Small-grain winter pasture is an excellent protein and energy supplement for fall-calving cows. About 9 to 12 hours per week of access to small-grain pasture (3 to 4 hours per day, 3 days per week) should meet supplemental protein and energy needs in most situations.
- Calves can be given free-choice access to the small-grain winter pasture
- A mineral supplement with elevated concentrations of calcium and magnesium should be provided to lactating cows and their calves grazing small-grain forage.

General Recommendations

- Distribute hay feeding as much as possible to minimize perennial grass stand damage and to evenly distribute nutrients from manure and wasted hay.
- Remove and discard plastic "net wrap" and twine from hay prior to feeding.
- Test soil to determine phosphorus, potassium and lime needs for spring legumes, such as lespedeza, sweet clover, red clover and white clover.
- Plan the financial management program for the year, including cash flow, deadlines for payment of interest and quarterly tax payments.

February Management Calendar

Spring-calving cows

- Prior to the beginning of calving season, move cows to a fresh, clean pasture that has not been grazed for at least 120 days
- If your operation has a history of calf scours, consult your veterinarian to develop a treatment protocol plan
- Check first-calf heifers several times daily for possible calving difficulties
- The process of parturition (calving) is generally divided into three stages:
  1) Stage 1 is the dilation of the cervix and occurs 4 hours to 24 hours before the actual birth.
  2) Stage 2 is the delivery process and begins when the fetus enters the birth canal. The beginning of Stage 2 is usually identifiable when membranes or a water bag appears at the vulva. Stage 2 averages about 30 minutes in mature cows and about one hour in first-calf heifers. Intervention should be considered (refer to your protocol) if there has

Management Calendar (cont.)

been no progress in the birthing process after 30 minutes in mature cows or one hour in first-calf heifers.

3) Stage 3 includes expulsion of the placenta and involution of the uterus.

- During early lactation, energy and protein requirements increase dramatically. Assuming above-average genetic potential for milk production, these cows would require about 19 lb. of TDN and 3.4 lb. of protein.
- This is roughly equivalent to a diet containing about 59% TDN and 11% protein.

Fall-calving herds

- Fall-calving cows with above-average genetic potential for milk production should receive about 7 lb. of a supplement containing 20%-24% protein daily when grazing low quality native range forage or low quality hay. A second alternative is to feed around 4 lb. of a concentrate supplement containing 20%-24% protein with 5 lb. of good-quality alfalfa hay.

General recommendations

- Consult a forage specialist in your area as you consider the fertility and management program for both native and "improved" cool- and warm-season grass pastures and rangeland.
- Develop a plan for stocking density, grazing management, control of invasive plants with herbicide or prescribed fire and fertilizer use in introduced forages.

March Management Calendar

Fall-calving herds

- Fall- born calves can be weaned at the traditional 7 months of age or remain on the cows during spring green-up and early summer grazing. Many commercial producers in this region have moved to mid-summer weaning because the cows still gain body condition while nursing high-quality early summer forage and calves wean at 650-700 lb. Earlier weaning (March or April) will almost certainly result in cows that are in body condition score 7 and beyond by calving time in September.
- Vaccinate heifer calves between 4 and 10 months of age for brucellosis.

Spring-calving herds

- March and early April are frequently the times of year when early spring-calving cows lose the most weight. This is primarily the result of early spring calving (or late winter). Some producers avoid rapid weight loss by feeding high-quality hay during this short period, while others reduce the protein concentration in the supplement and increase the feeding rate, resulting in more total energy supplementation. Later calving obviously avoids the need for supplemental feed during early lactation. However, later calving also exposes cows to more heat stress during breeding as well as younger calf age/size in the fall and at marketing or sale time.
- If AI is to be used, plan the synchronization system and purchase the necessary supplies and products. Some systems require implementation of the synchronization plan as early as 35 days prior to the initial breeding date.
- Breeding soundness exams should be performed on herd bulls, preferably before spring bull sales. Since bulls will be restrained during this procedure, this is an opportune time to perform other maintenance steps, such as vaccinating, trimming feet, tagging or retagging, cutting hair away from ear tags, etc.
- Early March is a good time to check weights on replacement heifers to determine if an adjustment in their nutritional program is necessary. The traditional recommendation is to target 65% of expected mature body weight by the beginning of the breeding season (812 lb. if mature weight is 1,250 lb.). More recently, commercial operations choose to keep more heifers, implement a minimal development plan resulting in 55% of expected mature weight, and expose the heifers to a 45 -d breeding season. The idea is to market open heifers as feeders and retain the pregnant heifers that thrive under minimal input management. This strategy is gaining popularity throughout the industry as one way to insure that beef females are better matched to their forage resources.

General recommendations

- Sample soil from established fescue, brome, bermudagrass, Old World bluestem and love grass pastures to determine fertilizer needs.
- If dry conditions persist, agronomists recommend nitrogen fertilizer applications be applied incrementally so that N is not wasted (volatized) in the case of little moisture availability for forage growth.

Management Calendar (cont.)

- Hay feeding areas in improved pastures should be burned, raked, lightly tilled if necessary, and reseeded with grasses and legumes. With a little early spring maintenance, these damaged areas can recover rapidly.
- If moisture conditions improve, plant or broadcast spring-seeded legumes, such as lespedeza, sweet clover, red clover and white clover. Remember to inoculate legume seeds before planting. Inoculation is an inconvenient and often-overlooked step that pays huge dividends.
- Adequate fuel should be available in most areas for prescribed fire this year. This is still one of the most effective and inexpensive range-management (and brush control, in particular) tools available to many ranching operations. An excellent resource for planning and executing prescribed burns is the Oklahoma Prescribed Burning Handbook (6613/E). This resource is available free of charge.

Check Out OSU Fact Sheets on Your Mobile Device and Visit eFarmManagement

Damona Doye, Farm Management Specialist

If you are waiting in line or at a ball game, think about using down time to check out OSU's new mobile-friendly versions of our longstanding fact sheets at http://factsheets.okstate.edu/ You may also want or the OSU Department of Agricultural Economics eFarmManagement website, http://www.agecon.okstate.edu/efarmmanagement/

More about the mobile fact sheets…

The fact sheet database spans the breadth of research-based expertise in the Oklahoma Cooperative Extension Service: agriculture, economic development, family and consumer sciences and youth development. These fact sheets offer research-based, peer-reviewed, unbiased guidance. The mobile-friendly documents include links to helpful websites and provide direct interaction with the authors, who are OSU experts, via email. For beef producers whether you are looking for guidance on winter feeding or cull cow marketing, the information is there, and now more readily, at your fingertips. Just type search words in the Google box at the top and you'll get links. Want full pdf versions that can be printed? Go to: http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage From this site, you can browse the site by academic departments or by topical categories or search by subject matter, fact sheet number or title.

More about eFarmManagement….

The OSU Department of Agricultural Economics (OSU Ag Econ) has developed online content that provides an opportunity for participants to learn more about financial management. YouTube videos, podcasts, publications, spreadsheets and webinars are accessible to anyone interested in improving their understanding of finances. The aim is to help producers refocus on business fundamentals. Thirty-one topic sections each include one or more videos and associated educational resources. Examples of topics include Farm Income Statements, Borrowing Money, Tax Issues for Farmers, Crop Insurance, Livestock Marketing, Risk in Agriculture, and many more. Viewers will not only gain better understanding of finances, but also gain new insights and perspectives they can use when thinking about their operation's future. Along with the farm management resources, live webinars are being offered (also recorded and archived for later viewing). Recent topics include "What's Realistic on 50 Acres of Pasture" and "Legal Issues for Farmers/Ranchers". Upcoming webinars are:

- Financial Stress Testing - January 16
- Landowner Rights - January 30

Videos and resources may be found at: http://agecon.okstate.edu/efarmmanagement/ Course videos and past webinars may also be accessed on YouTube by searching YouTube for "OSU agecon."

Whether you are starting to think about family or business goals for next year, curious about rental rates or need tips for putting together a good set of financial statements, you'll find help posted both places. Connect with OSU expertise any time, anywhere using your computer and mobile devices.

2018 Quicken for Farm/Ranch Financial Records

Quicken is moving to a subscription base for its software. While recent versions have been promoted as supported for three years, now you have an opportunity to buy a version with either a one or two year subscription. The Deluxe version which we have historically used in our workshops is available for $44.99 per year from the Quicken website. Features touted as new for 2018 in the Deluxe version include: access to 11,000+ online billers; bill PDF downloads; improved bill center dashboard and PDF download of bills; expanded custom report display and direct Excel export; backup for files with Dropbox (5GB); move and archive investments transactions.

The check register will be familiar—no visible changes there (it still bothers me that recent editions have required a Reset button, which I've had to use). The planning tools-savings, retirement, college, refinance, loan calculators—are included. The category list looks much the same and importing a farm category list is still possible. You can add, delete and edit categories and subcategories, including linking tax line items. Report and graph features are also familiar.

The 2018 Quicken for Farm/Ranch Financial Records instructions will be available in January and will be posted with sample files on agecon.okstate.edu/quicken. Contact your local Extension educator if you are interested in participating in a "hand on" workshop.

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