

AGRICULTURAL DIVISION RESTRUCTURING

Trends prompt specialty ag center development

by Charles Rohla, Ph.D. / ctrohla@noble.org

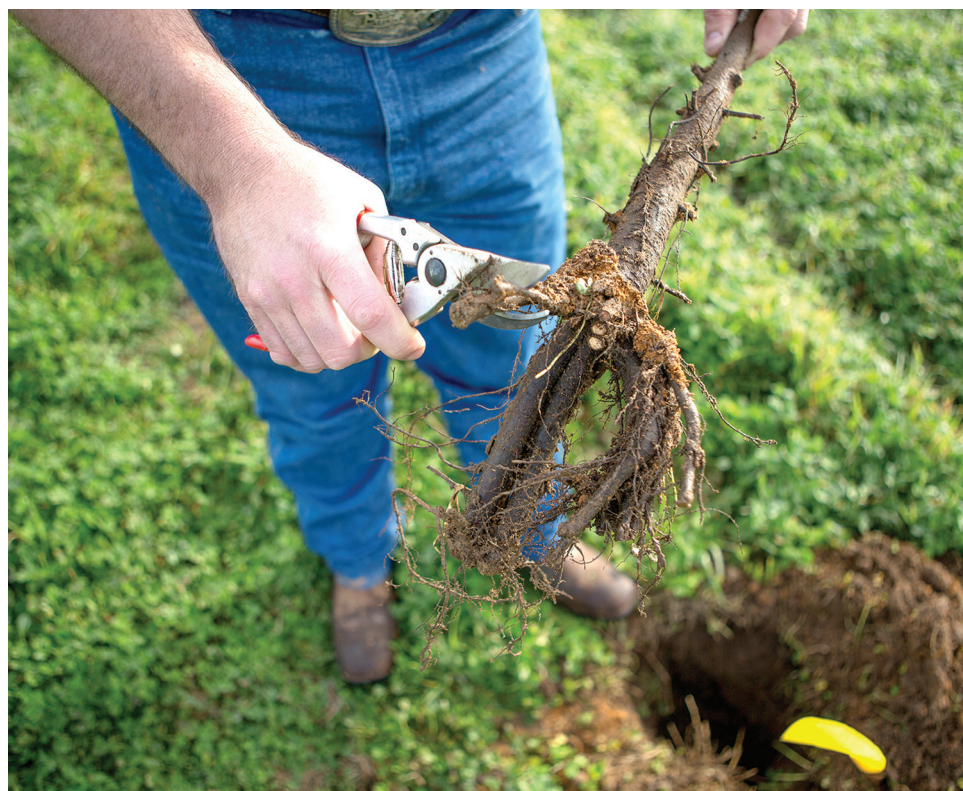


Interest in specialty agriculture has peaked as the population continues to rise, agricultural land availability continues to decrease, and

attention to food production and safety increases. This growing trend has created the opportunity for the Noble Foundation to further examine this broad area of agriculture.

As part of the Agricultural Division's restructuring process, the Noble Foundation has established the Center for Pecan and Specialty Agriculture Development and Technology Advancement (CPSA). The CPSA conducts research and demonstrations that will enhance production as well as educate producers and the community on opportunities in specialty agriculture.

We define specialty agriculture as food production that can be achieved on almost any acreage, regardless of size. Specialty agriculture is a combination of crops like fruits and vegetables, tree nuts, dried fruits, horticulture, and nursery crops, and small-scale animal production including cattle, swine, sheep, goats, chickens, rabbits, and fish. These operations can range from a few tomato plants in



a small backyard to a large, full-scale commercial pecan orchard.

The focus of the CPSA is to demonstrate different concepts and systems that producers can incorporate into their operations and to conduct research into the specialty agriculture crops. The CPSA will work alongside the Noble Foundation's educational team and Noble Academy, as well as outside organizations, to educate producers, consumers and youth.

Continuing the Noble Foundation's pecan research will also be a major focus of the center. The CPSA's establishment will allow us to increase our research collaborations with scientists throughout the pecan industry as well as scientists who were not traditionally involved in pecan research. These collaborations will expand our pecan knowledge base, which will allow for improved management decisions and increased farm profitability. For ►

example, we are working with other researchers to find what causes resistance within a pecan tree for pecan scab and to develop natural products that will help control the disease. We continue to study pecan irrigation systems, and we are part of a multi-state pecan study evaluating different rootstocks across pecan producing regions to help identify superior rootstocks for commercial planting.

Within its first year, CPSA has also presented workshops on backyard food production and preservation, began evaluating different methods of growing tomatoes in containers, and started planting a pecan demonstration orchard targeted toward small-scale orchard owners. In the future, budgets will be developed for this kind of operation, and people will be able to participate in management and equipment demonstrations. Additionally, we are working with the Noble Foundation employees' existing community garden to demonstrate planning a community garden to other interested groups, including the Community Children's Shelter in Ardmore, Oklahoma, and the health departments in Carter and Love counties in Oklahoma.

As the CPSA expands, we envision many more opportunities for individuals, both producers and public organizations, to attend workshops and seminars to learn more about the various areas of specialty agriculture. We want to provide an avenue for people to learn about food production as a whole – from growing to the plate – and enable them to take home ideas they can apply on their farm or in their small backyard. ■

National initiative promotes ag safety

by Robert Williams / rdwilliams@noble.org



National Farm Safety and Health Week is Sept. 20-26, 2015. Each year since 1944, the third week of September has been recognized as National Farm Safety and Health Week. This recognition is an annual promotion initiated by the National Safety Council and has been proclaimed as such by each sitting U.S. president since Franklin D. Roosevelt signed the first document.

The agriculture industry has long been considered one of the most dangerous industries in the United States. The most recent data from the U.S. Department of Labor indicates that in 2013 farming accounted for 500 fatalities, or 23.2 deaths per 100,000 workers. There are some inherent dangers involved with equipment and processes in farming, but another major reason for the high accident rates in farming is the work/life balance. In most cases agriculture is not just a job, it is a way of life. There is no 8-to-5 time clock. And in many ways, there is often no distinction between work and just living on the farm or ranch.

This year, the theme for National Farm Safety and Health Week is "Ag Safety is not just a slogan, it's a lifestyle." This is meant to remind us that agriculture is one of the most dangerous occupations in the U.S., but farm injuries and fatalities are preventable through education and by making safety a part of the ag life. NECAS and the Illinois Farm Bureau were responsible for developing the "Ag safety is not just a slogan, it's a lifestyle" logo this year.

As we recognize National Farm Safety and Health Week this September, please join us in promoting safe and healthy practices on our farms and ranches across the U.S. Take a look at your operations and equipment to ensure you are avoiding hazards and keeping things safe.

The National Education Center for Agricultural Safety (NECAS), www.necasag.org, is an excellent resource for information on agriculture safety. ■

it's a lifestyle.

**National Farm Safety
& Health Week
September 20-26, 2015**

Soil test values can vary across years

by Eddie Funderburg, Ed.D. / efunderburg@noble.org



A routine call we get involves a person who takes a soil sample this year and submits it for analysis. The data do not match the results of the last sample that

was taken from the field three years ago. The logical question is, “why?”

The usual reason is that soils vary in pH and nutrient content across the field, so the results will be different if subsamples were taken from different parts of the field in each sample. However, there are other possible reasons, and those are the ones I want to analyze in this article.

The depth at which the samples are taken is critical. Soil labs assume the sample is taken from a depth of 0 to 6 inches unless they are told otherwise. Sometimes, real-world samples are not taken from a 0- to 6-inch depth. We primarily work in pasture and hayfield settings. When the soil is dry, it is difficult to get a probe in the ground deeper than 2 inches without breaking or bending it. If the soil is wet, we may go considerably deeper than 6 inches simply because we can.

Why is sampling depth critical? Nutrient levels will usually be higher in the upper part of the soil in pasture and hayfield situations, as well as in no-till situations. Fertilizer and manure are placed on top of the ground, and plant roots cycle nutrients from deeper in the soil profile to the soil surface when the plants decompose. Therefore, if the sampling depth is shallower than 6 inches, your report will show higher nutrient levels than are actually present because you are sampling the more nutrient-rich portion of the soil. If you collect soil

deeper than 6 inches, your report will show lower nutrient levels than are actually present because you are including portions of the soil that are less nutrient rich in the sample.

Some soil test data can vary by season of the year. Soil pH is usually higher when soil is collected in wet seasons and lower when collected in dry seasons. The soil test pH value can vary by as much as 0.5 units between seasons of the year. If the sample is collected in the spring, it is likely to show a higher pH value than if it is collected in the summer.

Soil test phosphorus (P) can also vary by season and soil moisture content. Phosphorus is more soluble in wet conditions than in dry, so soil test P levels can be higher when samples are collected in the spring than in the summer. If the soil is very wet, the differences can be substantial.

Soil test potassium (K) can vary according to time of year if certain crops are grown. Hay crops remove a great deal of potassium, so soil test K levels will often be lower in the fall after a season of hay has been removed than in the spring before

haying commences. Grain crops contain a lot of potassium in the stalks and stover. This potassium is temporarily bound up in the plant residue but will be released when the residue decomposes. Potassium can be lower shortly after grain harvest (early summer for wheat and fall for corn, sorghum, cotton, etc.) but will increase up to planting time unless the stalks are removed from the field.

What can be done to manage for soil test variation? Collect soil samples at the same season of the year. You can collect samples at any time during the year, just do it in the same season each year to minimize the effect of seasonal variation. Collect soil samples at *exactly* 0 to 6 inches each time. I have a mark on my soil probe at 6 inches and press the probe into the ground to that depth each time. If the soil is so dry that you cannot get the probe 6 inches into the ground, don't take soil samples that day.

Following these steps should help you develop a better nutrient management program through use of soil testing. ■



2015: Fourth Quarter Events

Deer Management Field Day

White-tailed deer are Oklahoma's most popular wildlife resource. This field day will provide key insights to deer behavior and biology to help producers better understand and manage this resource.

9 a.m. to 4:15 p.m.
Oct. 13, 2015
Noble Foundation
Oswalt Road Ranch
Marietta, Oklahoma
Registration Fee: \$20,
includes lunch



Basic AG Field Day: Wildlife Management

This field day will demonstrate several wildlife management techniques. Wildlife consultants will discuss the impact of prescribed fire, grazing, woodland thinning and food plots on wildlife species. There will also be a plant walk to identify plants important to wildlife.

9 a.m. to noon
Oct. 23, 2015
Noble Foundation
McMillan East Farm
Madill, Oklahoma
No Registration Fee

Basic AG
Foundational Knowledge



Deer Processing Workshop

The white-tailed deer is the most popular game animal in Oklahoma and Texas, yet many people do not know how to properly prepare deer for venison. This workshop is designed to help people learn how to properly process deer from field to table. Various venison recipes will be available for tasting.

2-6:30 p.m.
Nov. 3, 2015
Noble Foundation
Oswalt Road Ranch
Marietta, Oklahoma
Registration Fee: \$20,
includes dinner



Fall Grazing Workshop: Taking Stock of Winter Pasture

This workshop will focus on estimating an initial stocking rate for stockers grazing small grains pastures based on forage production. Estimated reserve herd days or remaining grazeable forage production for bermudagrass pastures and Noble Foundation forage systems research will be discussed.

9 a.m. to 12:30 p.m.
Nov. 10, 2015
Noble Foundation Pavilion
and Pasture Demonstration Farm
No Registration Fee



Managing Taxes for Agricultural Producers

With record high cattle prices, managing taxable income will be of great importance this year for cattle producers. Experts in farm taxation issues will have the latest information available at this seminar.

1:30-4:30 p.m.
Dec. 8, 2015
Southern Oklahoma
Technology Center, Seminar A
2610 Sam Noble Pkwy.
Ardmore, Oklahoma
No Registration Fee



For more information or to register, visit www.noble.org/agevents or call Maggie Scott at 580.224.6375. Preregistration is requested.

McMillan East Farm provides real-world examples

by Steven Smith / sgsmith@noble.org



The McMillan

East Farm small property demonstration began in August 2012 on 150 acres in Marshall County, Oklahoma, to demonstrate

wildlife and cattle management on a relatively small property. Demonstration subject matters include wildlife and fisheries, soils and crops, forage and range, livestock, and economics. The property has 63 acres of pastures, 84 acres of woods and a 3-acre pond. Pastures are a mixture of native grasses, forbs, bermudagrass and annual cool-season grasses. Very few management activities had been conducted on the property for at least five years prior to 2012, and no infrastructure (interior fences, corals, power, water, etc.) was present. This article provides an update on the projects conducted thus far.

Wildlife and Fisheries

- Prescribed burns were used on 94 acres of native grass and wooded areas to improve wildlife habitat, open up understory, and improve forage quality and palatability.
- Eastern red-cedars were removed from a portion of the property using mechanical and chemical methods as well as prescribed burning to improve wildlife habitat, increase forage production and reduce competition with more desirable woody plants.
- Timber thinning was conducted to promote grass and forb growth as well as demonstrate different thinning methods.
- Uplands are managed for white-

tailed deer and wild turkey to provide hunting opportunities.

- Pond is managed for largemouth bass, bream and migratory ducks to provide fishing and hunting opportunities.
- Three nest boxes with predator guards were installed to increase cavity-nesting songbird production.
- A box-type parallel bar barrier was installed on the pond's overflow pipe intake to retain grass carp and harvestable-size sport fish and to prevent debris from plugging the pipe.
- Grass carp were stocked into the 3-acre pond to manage aquatic vegetation, which was excessive for sport fish management.

Fence

- A 4,212-foot 2-strand, high tensile electric fence was installed for better grazing management and forage utilization.
- Fiberglass posts were placed every 75 feet and as needed. T-posts were placed in low areas.
- A 5-strand barbed wire fence serves as the perimeter fence.
- Electricity is supplied by a solar-powered fence charger with a deep cycle marine battery.
- Corner posts were constructed out of 2 7/8-inch pipe.
- Holding pen has a 350-foot 5-strand barbed wire perimeter fence.
- Bermudagrass and native grass areas were separated with a 951-foot 2-strand polywire electric fence so these different forages could be managed independently and appropriately.
- Total cost: \$4,349 (fence materials: \$3,900, charger: \$340, marine battery: \$109)

Water

- Rural water was installed for live-stock and other needs.
- Two-inch waterline supplies a 44 gallon, Mirafount 3390 2-ball waterer and freeze-proof hydrant.
- Total cost: \$2,803 (water meter: \$1,800, 305 feet of 2-inch PVC pipe: \$210, Mirafount waterer: \$709, hydrant: \$55 and concrete: \$29)

Livestock Working Facilities

- Working pens were purchased and installed.
- Working pens include 22 panels (1.9-inch tubing, 10 feet long, 16 gauge), nine gates (1.9-inch tubing, 10 feet long, 16 gauge), 20-foot crowd alley (2-inch tubing, 14 gauge), headgate stand and headgate.
- Corner posts are made from 2 7/8-inch pipe.
- Total cost: \$11,100

Preconditioned Stocker Enterprise

- Twenty preconditioned 775-pound stocker cattle were used. Areas dominated by bermudagrass were fertilized in 2013 and 2015 according to soil samples.
- 2,4-D amine was used to control forbs/weeds in the bermudagrass dominated areas.
- Livestock have access to graze 41 of the 63 grazeable acres.
- Grazed from June 11 to Aug. 4, 2015 (for a daily gain of 1.8 pounds per day) to reduce annual cool-season grasses and introduce animal impact.

Please join us from 9 a.m. to noon, Oct. 23, at McMillan East Farm for the Basic AG Field Day: Wildlife Management event. Register and learn more at www.noble.org/events/. ■

Integrity Beef pays dividends in high cattle markets

by Robert Wells, Ph.D. / rswells@noble.org



Preconditioning

programs adhere to the old cliché that you have to spend money to make money. However when evaluated on a return to investment,

or net margin basis, preconditioning ranch-raised calves is still one of the most lucrative phases and safe investments of cattle production available to the cow-calf producer. The 2014 cattle market may have been the high of the present cycle; however, 2015 still looks to be a favorable marketing year for cow-calf producers. One of the best ways I can think of to add value to your calves is to enroll them in a value-added calf program such as the Integrity Beef Alliance's preconditioned calf program.

The Integrity Beef Alliance is a comprehensive beef production system that produces the highest quality calves possible for the next supply chain owner and consumer while improving returns for ranchers through value-added traits. Integrity Beef Alliance emphasizes progressive management methods, ranch stewardship and humane care of all livestock. The Alliance includes a terminal production system that uses a VAC-60 preconditioning program. Through uniform and elevated standard management practices, Integrity Beef producers' cattle far surpass industry standards for performance, quality, health and behavior.

Large and small ranches benefit equally from participating in Integrity Beef Alliance through implementation of best management practices and increased marketing venues,

replacement cattle and ranch supply procurement support.

Some of the factors that ensure success for the Alliance members and their calves are: improved health status of the calves and cow herd, reduced shrink at sale time, increased total pounds of cattle sold off the ranch, selling into a better markettime of the year, selling calves in larger lot size at the commingled calf sale and third-party verification of practices implemented on the ranch. All of these factors add up to more total dollars being made off the ranch yearly.

Recently, the Alliance hosted a guest speaker at a program who was an order buyer for several major Midwest feedyards. When asked what are the three major factors valued when buying cattle, he listed his top three as: 1) health, 2) health and 3) genetics. He stated because of the high cost of cattle, most buyers are willing to spend a little more to buy calves that have received a comprehensive health program to ensure, as much as possible, that they will be healthy and not die. In today's economic environment, one dead calf can instantly turn a closeout from profit to loss. Genetics still matter because once the calf has received the proper vaccinations and remains healthy, it must be able to perform well in the feedyard and still hang well on the rail at the packer.

In 2014, the average spring-born calf sold at the Integrity Beef Alliance commingled sale in early December weighed 765 pounds and sold for \$365 more than what it was worth at weaning. It cost an average of \$120 per calf to precondition for 60 days with an aggressive feeding program.

Advantages to Alliance Affiliation:

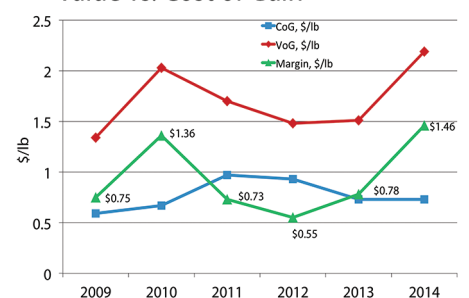
- Implementation of best management practices
- Improved health status
- Reduction of shrink
- Increased total pounds of cattle sold off the ranch
- Sell cattle in larger lots
- Sell at a better time of year
- Third-party verification adds value

The preconditioning program net profit averaged \$245 with a range of \$132 to \$408 per head profit due to the preconditioning program.

In the table below, the cost of gain, value of gain and margin are represented in dollars per pound for the past six years of the program. The lowest net profit, or margin, in the past six years was in 2012 and still was 55 cents per pound of gain. The highest margin was 2014 at \$1.46 per pound. Over the past six years, the average net profit has been 94 cents per pound of gain. This demonstrates the ability of preconditioning to add profit for the cow-calf producer.

So, if you are looking for a marketing advantage or a way to produce the best quality cattle for your ranch, consider the Integrity Beef Alliance to help meet your goals. Contact me, Robert Wells, at rswells@noble.org or 580.224.6434 for more information. ■

Value vs. Cost of Gain



Factors affect sustainable forage production systems

by Jon T. Biermacher, Ph.D. / jtbiermacher@noble.org



The Southern

Great Plains has a comparative economic advantage in growing and managing forages for beef cattle production.

Three categories of forage-based beef production systems that are common in this region include: 1) a cow-calf system that utilizes perennial native grass pastures, 2) a cow-calf system that utilizes introduced perennial pastures and 3) a stocker cattle system that utilizes annually established winter cereal forages. In the first two systems, weaned calves are supplied to the marketplace; in the third system, pounds of beef are supplied. Many variations of these three systems are being implemented on farms and ranches in the region. In fact, there are many producers who use one form or another of all three systems.

A number of issues can and oftentimes do impede the long-term economic success, and hence the long-term sustainability of the forage-based beef operations in the Southern Great Plains. Some common issues include, but are not limited to, overgrazing perennial pastures, continuous monocropping of annual pastures such as cereal wheat and rye, mismanagement of essential nutrients and soil additives (e.g., nitrogen, phosphorus, potassium and lime) on both perennial and annually established pastures, and the continuous use of intensive annual seedbed preparation and seed establishment techniques, to name a few. Some of these issues may seem trivial, but there are economic factors that help explain why these issues are present

on farms and ranches in this region.

For instance, extended periods of favorable cattle prices can lead to extreme, prolonged periods of overgrazing (even in periods of drought) that cause severe and expensive damage to perennial forages. Overgrazing can also be the result of producers increasing their short-term cash flows that are needed to service annual payments due for long-term loans and property taxes, and to pay for family living expenses like health insurance premiums, groceries and the car payment for a spouse.

In another light, today's marketplace does not directly recognize – especially in the short run – the value of certain agroecosystem services (e.g., reductions in soil erosion, improvements in water infiltration, sequestered carbon) that can be obtained from the adoption of improved, technologically advanced forage establishment and management practices (e.g., cover crops, no-tilling, precision fertilizer and pesticide application, etc.). In particular, the market does not offer a specific unit price for a measured unit of soil erosion reduced. Benefits from using environmentally friendly practices accrue gradually over time in the form of greater yields, which translates into more revenue per acre in the future. These future benefits are expected to vary differently by operation and therefore can impede the adoption process.

Lack of credit is another factor that can hinder long-term sustainability. The lack of a good recordkeeping and financial management system can impede a farmer's access to credit, credit that is vital for the purchase of technology and equipment that may be necessary for long-term sustain-

ability. Agricultural lenders are in the business of making loans to farmers, but lenders tend to be cautious about the terms for which they are willing to loan money to farmers. Farmers who have a good recordkeeping system tend to also have a well-developed, up-to-date set of financial statements (i.e., net worth statement, profit/loss statement and a statement of cash flows). These producers are typically much more successful in securing short-term operating loans and long-term loans for capital expenditures (tillage equipment, planters, land, fencing materials, breeding animals, etc.) than producers who do not have a financial management system for their farm or ranch business.

At the Noble Foundation, we understand the importance of long-term economic sustainability of the family farm or ranch business. It is through our understanding of the economic factors that help explain why some farm businesses become unsustainable and insolvent in the long-run and why we encourage producers to invest in whole-farm planning and financial management techniques. We believe whole-farm planning is a means for mitigating the risks of insolvency and how to protect the farm assets for generations to come. Having the ability to develop and use such a whole-farm planning system is equally as important to the long-term sustainability of the business as having the agronomic, animal husbandry and mechanical skills necessary to run the day-to-day activities on the farm or ranch.

For inquiries about how to get started developing a whole-farm plan for your operation, feel free to contact us at 580.223.5810. ■

ANNOUNCEMENTS

Photo contest continues to accept entries

The Noble Foundation's 2016 Ranch Management Calendar photo contest is underway. The competition is open to the public. The winning photos will be published in the Noble Foundation's 2016 calendar.

Contest rules:

- Photos should be of agricultural subjects in the Southern Great Plains. Photographers are encouraged to submit photos of images representing all seasons.
- By submitting this photograph(s), the photographer acknowledges and agrees that the photograph(s) will not be returned, and the pho-

tographer grants the Foundation a non-exclusive, irrevocable, perpetual, royalty-free right to publish the photograph in the 2016 Ranch Management Calendar, on the Foundation's website, social media outlets, and in printed materials or through other means of communication and visual media that relate to the Foundation's educational programs, philanthropic activities and overall mission. The photographer further warrants that he/she is the sole owner of all copyright interests in the photograph(s) and has full authority to grant the Foundation the rights referenced herein.

- Digital entries must be high resolution

(300 dpi resolution at 9 x 12 inches). Photos from smartphones will not meet resolution requirements. Digital entries may be emailed to calendarcontest@noble.org.

- Please include an entry form for all submitted photos. The entry form can be downloaded at www.noble.org/calendar-contest.
- All photos must be horizontally oriented to fit the calendar layout.
- All photos must be submitted by midnight Oct. 31, 2015.

For complete contest rules and prizes, please visit

www.noble.org/calendar-contest. ■

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THE SAMUEL ROBERTS
NOBLE
FOUNDATION
2510 Sam Noble Parkway
Ardmore, Oklahoma 73401
Phone: 580.223.5810