

LIVESTOCK

Compendium of Veterinary Products app gives answers

By Austin Miles/ramiles@noble.org



Proper administration and use of antibiotics and other animal health products is an absolute necessity, not only for the product to be as effective as possible,

but to minimize animal discomfort and reduce the risk of adverse side effects from improper use. Pharmaceutical manufacturers are very specific in the labeling of their products, how they are to be administered, in what dosage, withdrawal period length and other critical information. Livestock producers have a responsibility and duty to use these products as they are intended, not how we think they should be or in what quantities.

In most cases, dosage information can be easily found and read on the bottle of any vet-medical product you can think of. However, sometimes that information is lost, smeared over, or rubbed off and is no longer legible. The Compendium of Veterinary Products (CVP Vet) application provides users with labeling information for more than 5,000 pharmaceutical, biological, feed medication and other products from more than 200 manufacturers and distributors. A no-bull, straight-forward design makes navigating through the information effortless, allowing users



Travis McCracken, research assistant, administers an oral broad-spectrum dewormer at the Noble Foundation Pasture Demonstration Farm.

to search and sort by product name, manufacturer and product category (species, condition, product use, ingredient(s) and biological index). Product information can be found for a multitude of species, including beef and dairy cattle, cats, chickens, dogs, horses, sheep and goats, swine, turkeys, and even some wild and exotic species. Withdrawal time charts are made easily available and even easier to understand; they list abbreviations one will see on a drug label, such as route of administration, measurements of time, and if the product requires a prescription or falls under the mandate of the veterinary feed directive (VFD). A reference chart also provides more definitions of abbreviations commonly

found in veterinary medical records, weights and measurement conversions, body temperature conversions, and volume equivalents. As you can see, a lot of information can be derived with just a few clicks and swipes on your smartphone screen.

I did notice the last update to the app was in 2013, so information on some newer products may not be available. That being said, I've had great luck with this application chute-side and in the field. It serves as a great reference tool and delivers information I need quickly and effortlessly, even when I do not have the actual product or label in front of me. It is a free download and is compatible with both iOS and Android-powered smartphones. ■

Winter offers ideal time for forage management activities

by Hugh Aljoe / hdaljoe@noble.org



Although many of us think of the winter as being a slow time in forage management, it is actually the ideal time to perform some key activities that allow us to better manage our pastures and grazing for the coming growing season. Activities that come to mind are summarizing production and grazing records, analyzing last year's management plan, and drafting next year's management plan.

Summarizing forage production and grazing records is not a difficult task if you have kept good records throughout the year. Hay production is relatively straightforward. It is the quantity of bales multiplied by the average weight to determine estimated dry matter production by pasture. Dividing this figure by the number of acres gives us the production per acre. For example, a 40-acre pasture that produced 180 bales weighing 1,100 pounds each produced 4,950 pounds of forage per acre (180 bales × 1,100 pounds per bale ÷ 40 acres). You can go one step further and determine nitrogen use efficiency as well. If 92 units per acre of nitrogen (200 pounds per acre of urea) were applied to the pasture, the dry matter production per

unit of nitrogen for the pasture was 53.8 pounds (4,950 pounds of dry matter per acre divided by 92 units per acre of nitrogen). By comparing the hay production by pasture, a producer can determine which fields provided the best return in production per acre and can go one step further and determine the cost per acre return as well. Knowing that we want to invest first into the resources that provide us the greatest return, we can make better decisions as to which pastures get proportionally more, or less, fertilizer next year.

We can do the same with grazing records, although it is slightly more cumbersome. The information needed is the number of days a herd was in a pasture, the number of each class of cattle in the herd at each grazing activity and the approximate weight of the cattle in each class. For example, a pasture was grazed 24 days over three grazing events during the previous year. The herd consists of 45 mature cows weighing 1,250 pounds and two bulls weighing 1,800 pounds for 12 of the grazing days; 45 mature cows for 6 grazing days; and 42 mature cows for 6 grazing days. We will assume beef cattle consume 2.6 percent of their body weight per day and that our harvest efficiency is 65 percent for an introduced pasture with a good grazing rotation.

The easiest means to calculate estimated forage production from grazing records is to place the information into a spreadsheet as seen in **Table 1**.

For this example, this pasture produced an estimated 54,828 pounds of dry matter production as a grazing pasture. If it is 20 acres in size, the estimated production per acre is 2,714 pounds (54,828 divided by 20 acres). By using this information, a producer has the data to identify the most productive pastures within any given year or over a period of years, productivity changes due to management activities, and determine changes over time due to long-term management and rainfall.

After summarizing and analyzing the production records, one can assess the previous year's management plan and begin drafting next year's management plan. The activities that worked out well are continued and adjustments are made where outcomes were less than desired. To manage the forage resources well and make adjustments with confidence, producers have to utilize meaningful information at their disposal. Production records are one of the best sources of information for planning purposes – and winter is a good time of year to do these types of forage management activities. ■

Table 1. Estimated Forage Production from Grazing Records

Grazing Event	Class of Cattle	Weight	Number	Grazing Days	Intake % body weight	Dry Matter Consumed (lb)	% Harvest Efficiency	Estimated DM Production (lb)
1	Mature Cows	1250	45	12	2.6	17,550	65	27,000
	Bulls	1800	2	12	2.6	1,123	65	1,728
2	Mature Cows	1250	45	6	2.6	8,775	65	13,500
3	Mature Cows	1250	42	6	2.6	8,190	65	12,600
				24		35,638		54,828

Proper bull selection can increase return on investment

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



The past few

years have seen a dramatic downturn in calf prices from historic highs to the lowest prices in four or five years. Unfortunately, some input prices are

slow to come down while other inputs still remain high; thus causing a strain on budgets. This has greatly reduced the net profit of most cattle raisers.

There is a desire and justifiable need by producers to reduce costs proportionally with the reduced calf prices to remain economically viable in the next few years until prices improve again. One area some producers have considered cutting back on is the amount spent for replacement bulls. This can translate to using a bull of reduced quality. Prices for bulls have moderated along with the calf market, but some producers are extremely hesitant to pay for quality bulls. Rather, they opt for lower priced and lower quality bulls. However during times like now, bull quality is not an area that should be shorted. Bull selection will impact profit for many years to come in the form of the following potential adverse impacts: heavier birth weights, lower weaning weights, lower carcass quality or less desirable heifers to be kept for replacements. Beef producers who continue to produce quality calves with desirable genetics and value-added traits will have the greatest likelihood of remaining profitable during the low of the cattle cycle. Those who do not will likely be in the red and will be "paying to stay in the business" for the next few years.

So the question becomes, how can one justify spending more on a quality bull in difficult economic times? For the rest of the article, we will use the follow-



ing two scenarios. Scenario 1: use an average quality bull that cost \$2,750 to purchase. Scenario 2: purchase a high quality bull in the top 20 percent for weaning weight expected progeny difference (EPD) that cost \$3,500 to purchase. Both bulls will remain in the breeding herd for four years and breed 25 cows per year, totaling 100 calves. The annual cost for each bull on a cow basis is \$35.60 and \$43.10 for Scenario 1 and Scenario 2, respectively. Annual bull cost consists of all ownership costs, including pasture, feed/mineral, veterinary and depreciation expenses. Therefore, Scenario 2 bull only costs \$7.50 per cow more annually to purchase and own compared to the lower quality bull in Scenario 1. This means that bull's calves only have to bring \$7.50 to breakeven and pay for the better quality bull.

Now, let's take a look at the revenue side of the equation. All calves will be weaned at the same time in early Oc-

tober. Calves from Scenario 1 bull will wean at 535 pounds, valued at \$1.35 per pound or \$722 per head. Scenario 2 bull will sire calves with heavier weaning weights at 600 pounds valued at \$1.32 per pound or \$789 per head. This is an increase in total value of \$67 per calf for the heavier calves from the better bull. The better bull from Scenario 2 will wean a calf that has a positive net difference of about \$59 more per calf (\$67 minus \$7.50) or a total of \$1,475 more for the 25 head of calves sired by this bull annually. The total additional purchase cost of the better bull can be easily be made up in the first calving season.

As calf prices decline and total ranch profit diminishes, producers must look to increase profits by purchasing inputs that provide a profitable return to the ranch. The above example demonstrates how reducing input costs by decreasing the quality of genetics likely does not result in increased profits. ■

Consultant shares best times to apply phosphorus, potassium

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



Sometimes, a rancher takes a soil sample, sends it to a laboratory and the recommendation calls for phosphorus (P) and potassium (K). The rancher

knows nitrogen should be applied near the time of use, but wonders if the P and K can be applied at other times of the year such as fall or winter. The primary reason is to incur some expenses in a different year.

The answer is "it depends." K can often be applied during the fall and winter for a summer crop. K does not bind chemically in the soil. It magnetically attaches to the clay and organic matter particles in the soil. K is positively charged and will attach to the negatively charged clay and organic matter particles in the soil. If there are not enough of these clay and organic matter particles in the soil, K can be leached from the soil. This usually happens in very sandy soils. However, if enough negatively charged clay and organic matter particles are in the soil, K can be safely applied in the fall and winter for next year's crop.

How many clay and organic matter particles are "enough"? On most soil test reports, there is a category called cation exchange capacity (CEC). CEC is an estimate of the soil's ability to hold and exchange positively charged particles like K. If your CEC is less than 4, there is a good chance K will leach from the soil. Therefore, we recommend you apply K near the time of plant uptake in these soils, which is typically in the spring. If the CEC is greater than 8, there is very little chance K will leach.



In these soils, K can be applied at any time. In soils with a CEC between 4 and 8, there is a slim chance K can leach. Leaching in these soils will probably occur only in times of high-intensity excessive rainfall.

P acts differently in the soil than K. Instead of being magnetically attached to soil particles, P is chemically tied up by certain elements in the soil. The strength and duration of the P reaction depends on soil pH, which is a measure of how basic or acidic a soil is. Soil with a pH higher than 7.0 is considered basic. Soil with a pH of 7.0 is considered neutral. Soil with a pH less than 7.0 is considered acidic. P is most available to plants when the soil pH is between 6.0 and 7.0.

When soil is basic, P can be bound up with calcium particles. The higher the pH, the more strongly P is tied up. When the soil pH is higher than 8.0, the availability of P to plants is significantly reduced.

When soil is acidic, P can be bound

up with iron and aluminum particles and become less available for plant uptake. When the soil is highly acidic, below pH 5.5, P availability to plants is reduced significantly. The lower the pH from this point, the more strongly P is tied up in the soil.

What does this mean from a practical standpoint? The best time to apply P is usually near the time of plant uptake. For spring crops, this means apply in the spring. However, P can be applied in the fall and winter and do almost as well as in spring if the soil pH is between 6.0 and 7.0. P availability to plants grown in acidic soils can be increased if lime is applied according to the soil test results.

P and K are necessary for plant growth and development. Soil analysis should be used to determine the need for and amount of these elements. If needed, apply the recommended rate at the correct time using the information contained in this article. ■

Introduced grasses can cause problems for wildlife

by Steven Smith / sgsmith@noble.org



Old World bluestem (light colored grass on left) encroaching into a native grass pasture.



Across the United States, introduced and invasive plant species have displaced and replaced many native plant species. These plants are spreading across

the landscape primarily due to human activities such as plantings, accidental introductions and fire suppression. These invaders can take over an area before some land managers realize a problem exists.

Land managers often see wildlife habitat being invaded by nonnative, introduced grasses such as bermudagrass, tall fescue and old world bluestems. These introduced grasses are sometimes called improved grasses. When it comes to wildlife and native plant communities, there is nothing “improved” about these grasses. Introduced grasses are typically managed as monocultures, which means only one

plant species dominates an area. Even when not managed as monocultures, introduced grasses typically replace many native plant species and reduce diversity. Many species of wildlife depend on a diversity of plant species, which is best achieved through managing native plant communities.

When invasive plant species appear in rangelands, management practices must be carefully evaluated to prevent their continued spread. Sometimes, an intensive management practice such as an herbicide application may be needed to reduce abundance of some invasive species. With proper management, plant diversity can be maintained or increased in native rangelands. Other than the proper application of grazing, rest and prescribed burning, rangelands require few inputs (unlike introduced monocultures) to support livestock and wildlife.

In addition to degrading wildlife

habitat and the integrity of native plant communities, invasive plants can also decrease property value. Depending on the motivation of an individual buyer, many rangeland properties are more valuable than properties dominated by introduced plants due to value placed on wildlife habitat. The number of landowners whose primary income comes from off-the-farm sources is increasing and many of these individuals are looking for properties that provide recreational opportunities.

If wildlife and native plant communities are important to you, whether for aesthetic, personal recreation or business purposes, carefully evaluate if introduced grasses should be present or encouraged on your property. For more information about invasive plants in Oklahoma, go to the Oklahoma Invasive Plant Council website, www.okinvasives.org/. ■

UPCOMING EVENTS

For more information and to register, please visit www.noble.org/events or call 580-224-6376. Preregistration is requested.



THE SAMUEL ROBERTS
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OKLAHOMA FORESTRY SERVICES
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Oaks and Prairie
Joint Venture

Oklahoma Prescribed Burn Association

Dormant Season Prescribed Burn Field Day
8:30 a.m.-3 p.m.
Jan. 19, 2017
Noble Foundation
Oswald Road Ranch
18414 Dixon Rd.
Marietta, OK 73448
Registration Fee: \$20, includes lunch

Prescribed burning is a natural process that can be effectively used in land resource management, but it must be used in a safe and proper manner. This field day is designed to intro-

duce participants to the various aspects of burning, how to conduct a safe burn and give a hands-on experience. If weather permits, demonstration burns will be conducted.



Pecan and Fruit Orchard Establishment
9 a.m.-Noon, Jan. 17, 2017
Noble Foundation
Kruse Auditorium
2510 Sam Noble Pkwy.
Ardmore, OK 73401
No Registration Fee

The success of a pecan or fruit orchard starts prior to establishment. Hear from the Center from Pecan and Specialty Agriculture specialists on the importance of site selection and orchard design, along with

recommended varieties. Tips on how to properly plant trees and best early management practices that are critical to the success of a new orchard will also be discussed.



Integrity Beef Alliance Meeting

5-8:30 p.m., Feb. 16, 2017
Ardmore Convention Center
2401 N. Rockford Rd. Ardmore, OK 73401
Registration Fee: \$20 for non-members



The Integrity Beef Alliance is a cow/calf program with goals to increase marketability of ranch-raised calves through: increase in brand recognition, addition of stacked value-added traits and volume sales of high quality calves. The

winter Integrity Beef Alliance membership meeting will allow producers interested in or new to the program to meet seasoned program producers and to learn about program specifics and the protocol for the upcoming year.

Texoma Cattlemen's Conference: The Future of Sustainable Beef

Registration and Trade Show: 8 a.m.
9 a.m.-4 p.m., Feb. 24, 2017
Ardmore Convention Center
Registration Fee: \$40 (includes lunch)
Special pricing is available
for students and government personnel.



The beef industry continues to improve efficiencies and enhance production within each sector of the industry resulting in a more sustainable product for consumers. Efficiencies can occur on the ranch, in the feed yards and processing facilities, and through distribution. Changes made to the full production chain has implications from

the growers to the consumer. Leaders in each sector of the industry will describe their contributions toward the future of sustainable beef. Noble Foundation agriculture specialists will provide an update on what the Noble Foundation ranches are working toward for beef sustainability.

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Beef Quality Assurance (BQA) Workshop

1:30-4:30 p.m.

March 9, 2017

Noble Foundation

Kruse Auditorium

No Registration Fee

BQA raises consumer confidence through proper management education and guidelines for the beef industry. This workshop will give insight into BQA standards for animal care, record-keeping, nutrition and carcass quality. Participants can become BQA certified with successful completion of the workshop and a test.