


VOL. 1 ISSUE 1 · JANUARY 2025

AGRICULTURE NEWSLETTER PULASKI COUNTY

T.J. Adkins, Agent for Agriculture & Natural Resources

"*Agriculture* is our
WISEST
pursuit, because it will,
in the end, contribute
most to **REAL WEALTH,**
 **good morals, &**
HAPPINESS."
- *Thomas Jefferson*



CAIP DEADLINE REMINDER

**ALL PAPERWORK AND
MATERIALS MUST BE
TURNED IN BY
FEB. 28TH**



Efficient Watering of Livestock

FEB
11TH

- *Dr. Stephen F. Higgins, Ph.D. will be presenting.*
- *Will count for CAIP but must RSVP to get credit!*

TUES
6 PM

Hal Rogers Fire Training Center
180 Oak Leaf Lane
Somerset, KY 42503

RSVP: 606-679-6361



Cooperative Extension Service

Agriculture and Natural Resources
Family and Consumer Sciences
4-H Youth Development
Community and Economic Development

MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT

Educational programs of Kentucky Cooperative Extension serve all people regardless of economic or social status and will not discriminate on the basis of race, color, ethnic origin, national origin, creed, religion, political belief, sex, sexual orientation, gender identity, gender expression, pregnancy, marital status, genetic information, age, veteran status, physical or mental disability or reprisal or retaliation for prior civil rights activity. Reasonable accommodation of disability may be available with prior notice. Program information may be made available in languages other than English. University of Kentucky, Kentucky State University, U.S. Department of Agriculture, and Kentucky Counties, Cooperating. Lexington, KY 40506



Disabilities
accommodated
with prior notification.

KENTUCKY  
COOPERATIVE EXTENSION

UK MARTIN-GATTON COLLEGE OF AGRICULTURE, FOOD AND ENVIRONMENT
KSU COLLEGE OF AGRICULTURE, COMMUNITY AND THE SCIENCES



Pulaski County Extension Office
Private Pesticide
Applicator Trainings

Woodstock Community Center

- February 20th at 6 pm
- March 15th at 8 am

Extension Office

- February 5th at 9 am
- April 2nd at 9 am

Please be sure to RSVP at 606-679-6361 prior to the training you would like to attend. Feel free to contact us with any questions.

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PULASKI COUNTY EXTENSION OFFICE

2 Part Class- Must attend both classes

12 people or 12 couples limit

Please register and pay in advance

January 24th 5:30 - 7:30 pm Summer Sausage- You will be making your own summer sausage and preparing it for the fermentation and smoking process. Ground pork, ground beef, seasonings, add-ins & all supplies provided. Optionally you may bring your own ground venison or elk to substitute part of the ground beef. The sausage will be finished out at the extension office and you will receive it at the next class.

January 31st 5:30 - 7:30 pm Sausage, Bacon & Meat Smoking Basics:
Come and learn to craft all your breakfast favorites!



\$25 PER PERSON / COUPLE
CALL: 606-679-6361 TO RSVP



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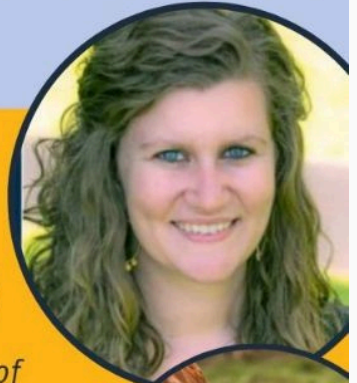
Disabilities accommodated with prior notification.



2025 PULASKI COUNTY FARM BUREAU AG NIGHT



Guest Speaker:
**RENEE
CARRICO**



*KFB Director of
Commodity Division*

Breakout Sessions:
Livestock Risk Protection
Superior Ag Insurance Team
Counts for CAIP



Pesticide Application Certification
TJ Adkins, Pulaski Co. Extension Agent



Sheep & Goat Discussion
Dr. Jess Lay, UK Specialist

Counts for CAIP



DIY Vanilla Extract
Caroline Lovins, Nature's Soul



Children's Snow Globe Activity
Ashley DeBord



THUR. FEB. 20, 2025
MEAL BEGINS @ 6:00PM

**WOODSTOCK COMMUNITY
CENTER**

RSVP to the PCFB Office
(606)679-2360



Alternative Protein Sources for Cattle

Jeff Lehmkuhler, Katie VanValin, Kevin Laurent, Darrah Bullock, and Les Anderson, Animal and Food Sciences; and Darrell Johnson, Regulatory Services



Corn gluten and soybean hull mixture commonly offered to beef cattle as a supplement.

Kentucky has several bourbon distilleries and one fuel ethanol plant. The spent grains from the production of ethanol are utilized as a protein source in livestock feed. Most distilleries and fuel ethanol plants will have a scheduled maintenance shutdown each year. Shutdowns for fuel ethanol plants may also occur as a result of unfavorable profit margins when crude oil prices are low. During a shutdown, availability of distillers grains and other coproducts from these plants may be limited or unavailable. So the question is: What else can I feed in place of distillers grains?

Fortunately, several alternative protein options are available. However, for this discussion, only dry protein sources will be considered. The first alternative choices would be other plant-derived protein sources. The most common in Kentucky are either soybean meal or corn gluten feed. Cottonseed meal from the cotton growing areas south and west of the Commonwealth can also be an option.

Dietary protein sources include true protein and non-protein nitrogen (NPN) forms. True protein refers to peptides and amino acids. Zein, for instance, is a

true protein found in corn. Non-protein nitrogen refers to nitrogen sources within a feed that are not incorporated into an amino acid and may include nitrate, nitrite, diammonium phosphate, urea, and biuret as examples. Feedstuffs will often contain a combination of both true and NPN forms. Alfalfa silage, for example, may contain 40 to 60 percent of the nitrogen content as NPN and the remainder as true protein.

Many producers have developed the habit of buying unblended feedstuffs, such as dried distiller's grains with solubles (DDGS), and they often forget about protein supplements available from feed companies. Feed companies market a "natural" protein supplement. Natural refers to not having an NPN source. These natural protein products often range between 24 to 38 percent crude protein.

Protein levels for a variety of feedstuffs are shown in Table 1. Protein guarantees on a feedtag will be lower than reported in the table, as most protein products from a feed company will include minerals, eliminating the need for additional mineral supplementation. Inclusion of mineral dilutes the protein content. Natural protein products will be slightly more expensive on the basis of price per pound of crude protein.

Most feed companies also sell a higher crude protein line that includes a blend of plant-derived protein and NPN sources. Urea is the common NPN source utilized in dry feeds, but biuret, a slower rumen degrading form of NPN, may also be utilized. On a price per pound of crude protein basis, urea is the cheapest source of protein (see Table 2). Feeding NPN as a protein source is best when feeding diets

Table 1. Average crude protein content of various feedstuffs commonly offered to beef cattle.

Feedstuff	Crude protein (%)*
Alfalfa meal	16
Brewers grains, dried	22
Corn gluten feed, dried	21
Corn gluten meal, dried	57
Cottonseed meal, solvent extracted	42
Dried distiller's grains w/ solubles	28
Flaxseed/Linseed meal	20
Soybean meal	46
Soybeans, whole, raw	38
Urea	287

Source: <https://animalnutrition.org/feed-composition-database> accessed 3/20/20, excluding urea. *Values are expressed on a 90 percent dry matter basis.

Table 2. Price per pound of crude protein from various feedstuffs.

Feedstuff	DM (%)	CP (% DM)	Cost (\$/unit)	Unit (lb)	Cost/lb CP (\$)
Alfalfa hay	86	20.0	10	60	0.97
34% pellet	90	37.8	17	50	1.00
Corn gluten feed	90	21.1	180	2000	0.47
Soybean meal	90	50	13.50	50	0.60
Distillers grains	90	27.8	225	2000	0.45
Urea	90	287.8	15	50	0.12

Note: Price will vary based on actual costs for feedstuffs.

containing rapidly fermenting carbohydrates such as starch.

Feedlot diets containing mostly corn and/or other cereal grains are ideal for urea. Urea should be avoided when feeding feedstuffs high in NPN. Excessive ammonia production in the rumen can lead to disorders and potentially death. If water sources are known to contain elevated NPN sources, urea should not be offered. Alfalfa haylage, drought-stressed corn, or sorghum silages that have accumulated nitrates are example feedstuffs in which urea should be avoided. In addition, urea should not be fed in combination with raw soybeans due to the urease activity of soybeans and risk of ammonia toxicity.

When reading feedtags that contain NPN sources, tags will include the amount of NPN protein in the feed. The statement often reads: "This includes not more than XX.X% equivalent crude protein from non-protein nitrogen." For example, a protein supplement may list a guaranteed minimum crude protein level of 44 percent. The feedtag states that the product contains not more than 18 percent equivalent NPN protein. The product would have approximately 40 percent of the protein from NPN sources (18% NPN equivalent CP/ 44% CP).

General rules of thumb exist when using NPN or urea in high-grain diets. These guidelines should be followed, as urea can be toxic to cattle. One rule of thumb is that NPN sources should not provide more than one third of the total crude protein in the diet. For example, if a diet contained 13 percent crude protein, urea should not provide more than 4.3 crude protein units ($13\% \times 0.33$). Another feeding guideline is that the diet should contain no more than 1.5 percent of urea on a dry matter basis. This is simplified by recommending no more than one fourth to one third of a pound of urea be fed daily to a finishing animal. Generally, urea is avoided in light-weight calves and diets comprised of low-quality forages. In larger feedyards, urea is often delivered mixed into liquid molasses. Having the urea mixed into liquid supplements improves mixing and reduces the risk of sorting. When adding urea sources to diets, ensure it is evenly mixed with the other feedstuffs.

The cost of the protein source needs to be considered as well. A commercial feed that includes the minerals would eliminate the need to provide additional mineral supplement, providing a savings of \$0.10 per day at current prices. The min-

eral provided in the supplement would be a value of \$120 per ton, assuming a bag of the protein supplement provided 30 head feeding days (ex. 50 lb bag/1.67 lb fed per day). In many instances, one may purchase alternative protein supplements in bags instead of bulk. Bagged feed prices will be higher, and discounts are offered for bulk orders.

In Table 2, several feeds are shown, with prices, to determine the price per pound of crude protein. Determining the price per unit of protein is one approach at determining which protein source may be economically better. Price alone is not the only decision driver. Handling, mixing, sorting, risk of feeding disorders, and other factors should be considered.

In summary, when a protein source becomes limited in availability, seek alternatives. Do your homework to learn how much protein, energy, and other nutrient levels make up the feedstuffs that are available. Consider the price on a nutrient basis as shown above. Work with your nutritionist to develop a new feed ration that will meet the nutrient needs of the animals and avoid feeding disorders. For more information, contact your county Extension office and visit with your nutritionist.

Photo: Jeff Lehmkuhler

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



Cook Wild KENTUCKY
Kentucky Baked Dove Breasts

Kentucky Baked Dove Breasts

- 12 dove breasts, cleaned
- 2 cups buttermilk
- ¾ teaspoon salt
- ¼ teaspoon pepper
- 1 ½ teaspoons smoked paprika
- 1 tablespoon vegetable oil
- 2 medium apples, diced
- 1 large onion, diced
- 2 celery stalks, sliced
- 1 cup orange juice

In a covered container, soak the dove breasts in buttermilk overnight in the refrigerator. Remove breasts and discard buttermilk. Pat breasts dry with a paper towel. Preheat

the oven to 350 degrees Fahrenheit. Combine salt, pepper, and smoked paprika and stir. Rub mixture into breasts. Place breasts in a shallow greased baking dish and brush with oil. Add diced apples, onions, and celery. Add a half cup of water to the pan and cover tightly. Bake for one hour and 15 minutes. After 45 minutes, pour the orange juice over breasts and baste.

Note: Removing skin before cooking can lower fat content. This might also reduce "wild" flavor.

Yield: 6 servings

Nutrition Facts	
6 servings per container	
Serving size 2 dove breasts (262g)	
Amount per serving	
Calories	320
% Daily Value*	
Total Fat 17g	22%
Saturated Fat 4.5g	23%
Trans Fat 0g	
Cholesterol 130mg	43%
Sodium 370mg	16%
Total Carbohydrate 15g	5%
Dietary Fiber 2g	7%
Total Sugars 11g	
Includes 0g Added Sugars	0%
Protein 28g	
Vitamin D 0mcg	0%
Calcium 46mg	4%
Iron 7mg	40%
Potassium 508mg	10%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

This institution is an equal opportunity provider. This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP.

