

AGRICULTURE & NATURAL RESOURCES

Cooperative Extension Service  
Carlisle County  
65 John Roberts Road  
Bardwell, KY 42023-0518  
(270) 628-5458  
Fax: (270) 628-3722  
extension.ca.uky.edu

# *Carlisle County ANR Newsletter December, 2023*

## ***Dates to Remember:***

***Breakfast With Santa-*** Dec.9<sup>th</sup>, 2023-Extension Office-***flyer attached***

***Winter Grain Meeting-*** Dec.13, 2023-Amberg Shop-Hickman-***flyer attached***

***Winter Wheat Meeting –*** Feb. 1, 2024-Hopkinsville

***KY Commodity Conference-***Jan. 18, 2024-Bowling Green

***Winter Ag Conference-*** Feb. 9, 2024- Lowry Farms

***Pesticide Training Dates-*** If your card is expiring you will receive a letter this month from me. ***A flyer is attached with training dates.***



## 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.



University of Kentucky  
 College of Agriculture,  
 Food and Environment  
 Cooperative Extension Service

# ***PESTICIDE CARD RENEWAL***

**January 31– February 6, 27, 2024**

***Carlisle County Extension Office***  
*65 John Roberts Road , Bardwell KY 42023*

## **Times for each Day**

**Jan. 31, 2024-9:00-11:00**

**Feb. 06, 2024-8:00-10:00**

**Feb. 27, 2024-8:00-10:00 am**



***Winter Ag. Conference will be  
 Feb 9, 2024 at Lowry Farms.***



**For more information call your  
 County Extension Office:**

**Carlisle**

**270-628-5458**

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# Cooperative Extension Service Winter Grain Meeting

**WEDNESDAY**  
**DECEMBER 13, 2023**  
**8:00 AM**

**AMBERG FARMS**  
**6299 State Route 1128**  
**Hickman, KY 42050**




## Session Title

**Welcome**  
**Evolution of the Carbon Market**  
**Grain Market Update**  
**Nitrogen Timing on Corn**  
**Red Crown Rot in Soybeans**  
**Ultra Early Soybean Planting Dates**

## Speakers

**Local County Agent**  
**Dr. Jordan Shockley**  
**Dr. Grant Gardner**  
**Dr. John Grove**  
**Dr. Carl Bradley**  
**UKREC**

**Lunch is sponsored by** 

**KY & TN Commercial Applicator Points pending**

\*\*\*RSVP by calling your local county extension office by  
 Friday, December 8th to ensure your free meal\*\*\*

Fulton - 270- 236-2351

Carlisle - 270-628-5458

Hickman - 270-653-2231

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 accommodated  
 with prior notification.



**KENTUCKY STATE UNIVERSITY**

Cooperative Extension Program



PANCAKES AND PAJAMAS  
**BREAKFAST WITH SANTA**



Thank you to our sponsors! Bardwell Masonic Lodge #499 & Carlisle Co. Homemakers

**SATURDAY  
DECEMBER 9**

AT CARLISLE COUNTY EXTENSION OFFICE  
7:30AM - 10:00AM



BRING YOUR KIDS IN THEIR PAJAMAS!

EAT A PANCAKE BREAKFAST WITH YOUR FAMILY!

MEET, GREET, AND TAKE PICTURES WITH SANTA!

CRAFT AND COLOR AT CHRISTMAS FUN STATIONS!

*\$5.00 per person*  
*A fundraiser for*  
*Carlisle County 4-H*

This institution is an equal opportunity provider.

Reasonable accommodations for individuals with disabilities will be provided free of charge upon request. Language access services for limited English proficient individuals will be provided free of charge upon request. Please contact Cole Bell at [Cole.bell@ksu.edu](mailto:Cole.bell@ksu.edu) by December 1, 2023.



## The 2023-2024 Winter Outlook for Kentucky

Derrick Snyder – National Weather Service, Paducah, KY



As the leaves change colors and fall to the ground, crops are harvested, and tendrils of frost form on plants, conversation often turns to what the coming winter will bring. As we have seen, winter in Kentucky can bring a bit of everything, from ice and snow, to flooding, to bitter cold - even severe weather. Given how variable the weather during the winter can be, is it possible to predict what will happen? Many of us have heard homespun wisdom about ways to predict what an upcoming winter will bring. Some of the more popular ones include how dark the hair of a wooly worm is in the fall, the shape of the seed inside of a persimmon, and counting the number of morning fogs in August. Unfortunately, these tales are not necessarily based in truth. The National Weather Service has a division called the Climate Prediction Center (CPC). The climatologists use historical data and pattern recognition, along with latest trends and observations, to predict a seasonal outlook. This past month, CPC just issued the outlook for the upcoming 2023/2024 Winter Season. So how does it shake out?

The winter outlook compiled by CPC covers the months of December, January, and February. It is not possible to give a day by day forecast of what will happen, but it is possible to forecast whether a region will see a greater chance of above-, below-, or near-normal temperatures and precipitation (rain and melted snow and ice). If there is not a strong signal either way, the outlook will say that a region will have an equal chance of seeing above-, below-, or near-normal temperatures and precipitation. It is important to remember that these outlooks cover a three-month period. Periods of cold weather can occur when above-normal temperatures are favored, and the opposite can happen when below-normal temperatures are favored. The same rule also applies for precipitation.

This year, the United States is entering into a strong El Niño pattern. During El Niño, trade winds weaken in the Pacific Ocean. Warm water is pushed back east, toward the west coast of the Americas.

El Niño means Little Boy in Spanish. South American fishermen first noticed periods of unusually warm water in the Pacific Ocean in the 1600s. The full name they used was El Niño de Navidad, because El Niño typically peaks around December.

El Niño can affect our weather significantly. The warmer waters cause the Pacific jet stream to move south of its neutral position. With this shift, areas in the northern U.S. and Canada are dryer and warmer than usual. But in the U.S. Gulf Coast and Southeast, these periods are wetter than usual and have increased flooding.

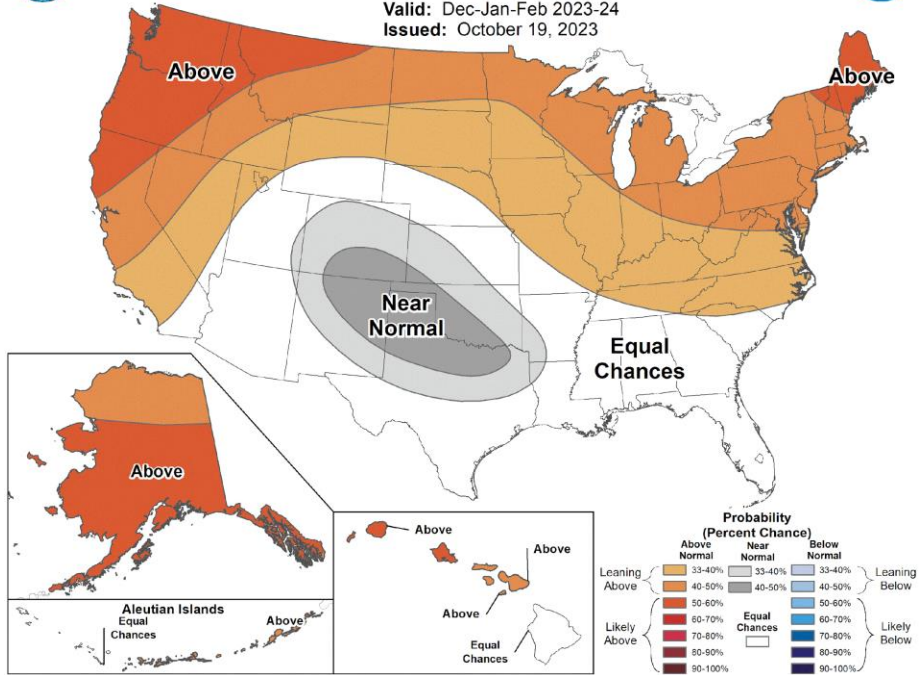
In Kentucky, the outlook for this winter slightly favors above-normal temperatures across the entire state. For precipitation, the great majority of the state has an equal chance of seeing above-, below-, or near-normal precipitation. However, across far northern Kentucky, the outlook does slightly favor below-normal precipitation amounts. How will this end up playing out over the winter? – We shall have to wait and see!



# Seasonal Temperature Outlook



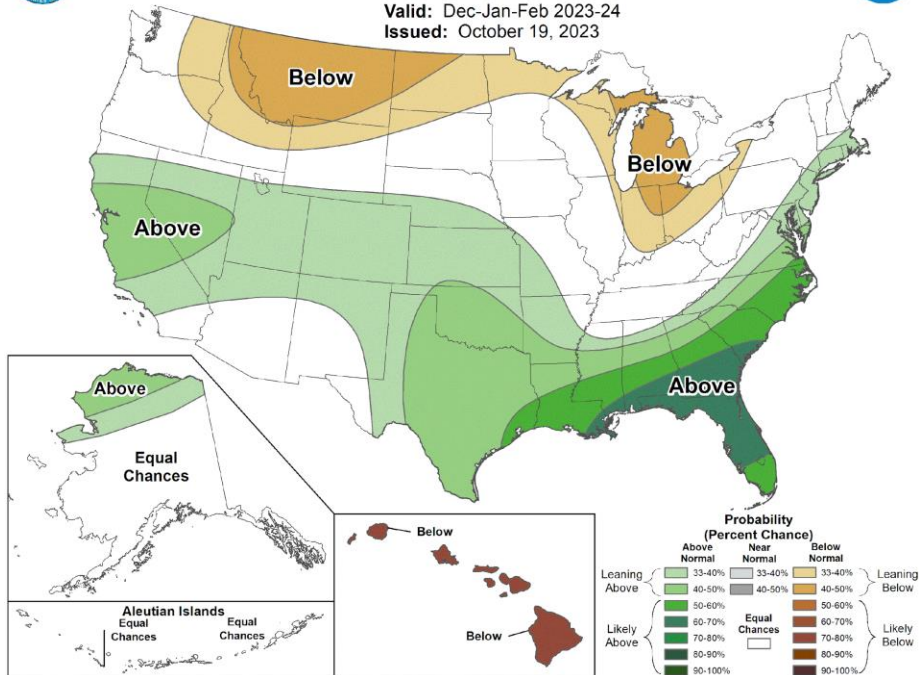
Valid: Dec-Jan-Feb 2023-24  
Issued: October 19, 2023



# Seasonal Precipitation Outlook



Valid: Dec-Jan-Feb 2023-24  
Issued: October 19, 2023





# Pumpkin Apple Muffins

1¼ cups all-purpose flour  
1¼ cups whole-wheat flour  
1¼ teaspoons baking soda  
½ teaspoon salt  
1½ teaspoons ground cinnamon

½ teaspoon ground ginger  
½ teaspoon ground nutmeg  
1¼ cups honey  
2 large eggs

1½ cups fresh pureed pumpkin  
½ cup canola oil  
2 cups Granny Smith apples, finely chopped

**Preheat** oven to 325 degrees F. In a large bowl, **combine** flours, baking soda, salt and spices. In a small bowl, **combine** honey, eggs, pumpkin and oil; **stir** into dry ingredients just until moistened. **Fold** in apples. **Fill** greased or paper lined muffin cups, two-thirds full. **Bake** for 25 to 30 minutes or until muffins test done. **Cool** for 10 minutes before removing from pan.

**Note:** Can substitute two cups granulated sugar for honey, decrease baking soda by ¼ teaspoon and increase oven temperature to 350 degrees F.

**Yield:** 18 muffins

**Nutritional Analysis:** 200 calories, 7 g fat, 0.5 g saturated fat, 35 mg cholesterol, 160 mg sodium, 35 g carbohydrate, 2 g fiber, 20 g sugar, 3 g protein



Buying Kentucky Proud is easy. Look for the label at your grocery store, farmers' market, or roadside stand.

## 2024 WINTER AG CONFERENCE

### “DRONES: FARMING ON THE FLY”



FEBRUARY 9, 2024  
LOWRY FARMS  
PILOT OAK, KY

KY & TN PESTICIDE  
AND  
CCA CEU'S PENDING



## Crop Rotation – Soil Health Gift That Keeps on Giving

**O**ne basic soil health concept is that of plant diversity – a diversity of plant species grown in your fields will benefit soil health. Crop rotation is a well applied example of that soil health concept. The impacts of crop rotation on weeds, diseases and insects are numerous and help to explain how rotation raises yield of corn and soybean. I remember that in the 1980s, Johnsongrass control in soybean benefited the following corn crop. Take-all disease has long prevented growing wheat after wheat. Soybean cyst nematode reduces our ability to grow soybean after soybean. Corn rootworm can hinder continuous corn production.

When changes in weed, disease and insect pressure don't explain the 'rotation effect', changes in soil chemical (pH), physical (aggregation/tilth), and fertility (available N, P and S) properties are often talked about. But the 'rotation effect' can occur in the absence of all the previously described causes/mechanisms – this means that the effect is probably due to differences in soil microbiology that are induced by rotation versus monocrop cultivation. The differences in soil microbiology associated with this phenomenon are not well understood, but a buildup in mycorrhizal fungi is suspected by some researchers (Johnson et al., 1992; Hendrix et al., 1995).

What does this mean in Kentucky? Before I came to Princeton, I used to manage (Dr. Hanna Poffenbarger has that pleasure now) a grain crop rotation research trial at the Spilndletop research farm near Lexington. Besides continuous corn, continuous soybean, and the 2-year corn-wheat/double crop soybean rotation, there was a 4-year corn-corn-soybean-soybean rotation. All crop rotation components were grown every year. I'm going to use those yield results to illustrate some long-term observations.

Corn benefits a great deal from rotation. Figure 1 illustrates the 'rotation effect' in the context of corn grain yield response to fertilizer N. In this figure, three corn rotation components are shown: 1<sup>st</sup> year corn after 2 years of soybean, 2<sup>nd</sup> year corn after 1 year of corn and 2 years of soybean, and continuous corn. Corn yield rises and then levels off as the N rate rises. The 'rotation effect' is shown at the far-right side of Figure 1, where 1<sup>st</sup> year corn exhibited greater maximum yield potential (203 bu/acre) than 2<sup>nd</sup> year corn (193 bu/acre) and continuous corn (191 bu/acre). Interestingly, the larger portion of the 'rotation effect' was lost with 2<sup>nd</sup> year corn, whose maximum yield potential was not very different from that for continuous corn. And as noted by many, more fertilizer N was needed to achieve maximum yield in the corn after corn systems; 141, 169 and 177 lb N/acre for the 1<sup>st</sup> year, 2<sup>nd</sup> year and continuous corn, respectively. That said, the greater corn after corn fertilizer N requirement did not overcome the 'rotation effect'.

In this long-term field study, the continuous corn and corn-wheat/double crop soybean systems have been around for the longest time, over 25 years. Corn yields in each of these systems, as related to the seasonal/yearly average yield in the trial, are shown in Figure 2. The negative impact of continuous corn was *generally* apparent across all seasons – good, average, and bad – though not all.



There were years where continuous corn outyielded corn after wheat/double crop soybean. The impact was greater in the better seasons. In a 50 bu/acre season the yield loss is nearly 11 bu/acre. In a 250 bu/acre season the yield loss is around 21 bu/acre.

For those of you considering an expansion in soybean acres next spring - full season soybean is not immune to the 'rotation effect'. Figure 3 exhibits the 1<sup>st</sup> year, 2<sup>nd</sup> year, and continuous full season soybean yield as related to the seasonal/yearly average yield for the 11 years that all 3 rotation components were present. This long-term field study area does not have soybean cyst nematode (I regularly took soil samples for cyst nematode detection). Again, there were some years when soybean after soybean outyielded soybean after corn. However, the general yield trends indicate that soybean after soybean yield potential was inferior to that for soybean after corn and that the rotation effect was larger with a greater seasonal yield potential. Again, 2<sup>nd</sup> year soybean yield potential was not very different from that for continuous soybean.

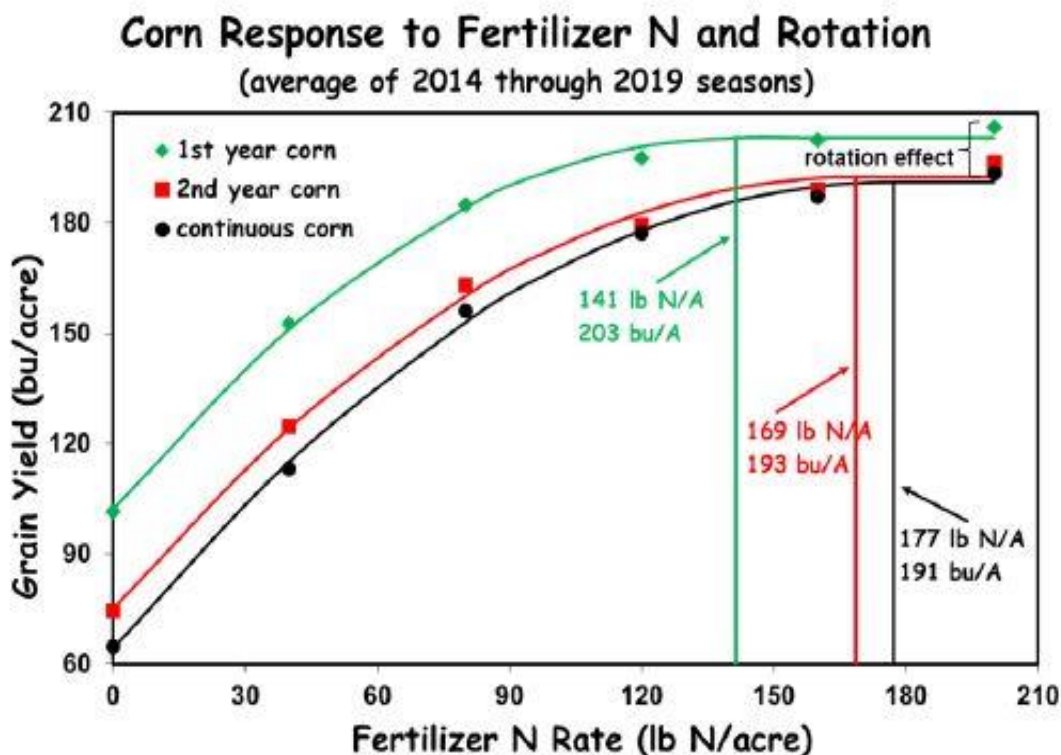


Figure 1. Corn grain yield response to fertilizer N rate and crop rotation. 2014-2019 Lexington, KY

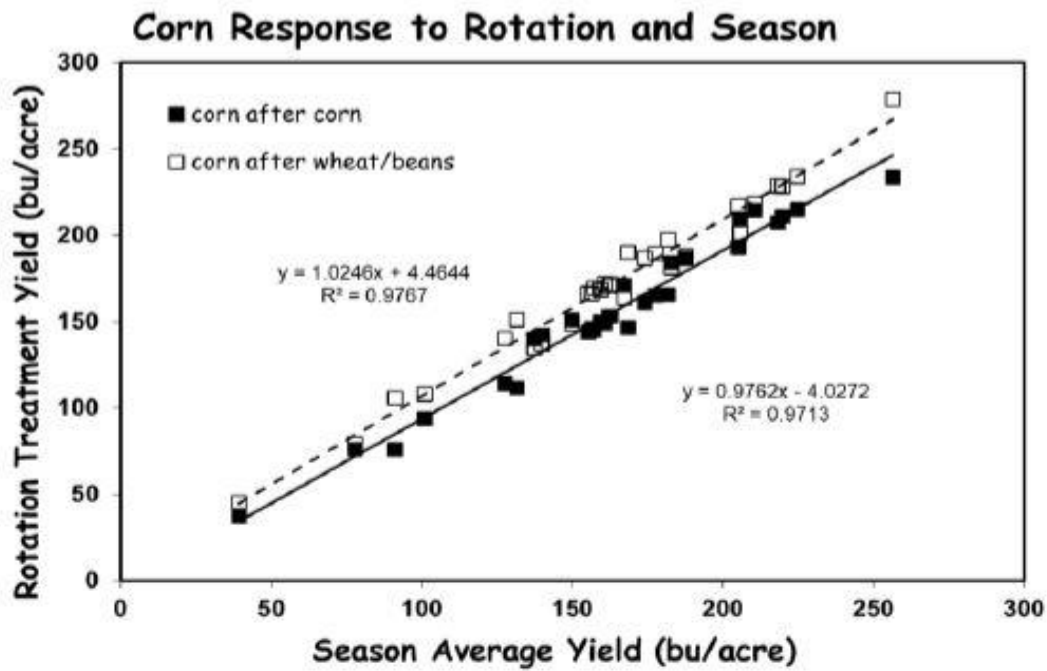


Figure 2. Corn grain yield response to season/production year and crop rotation. 2014-2019 Lexington, KY.

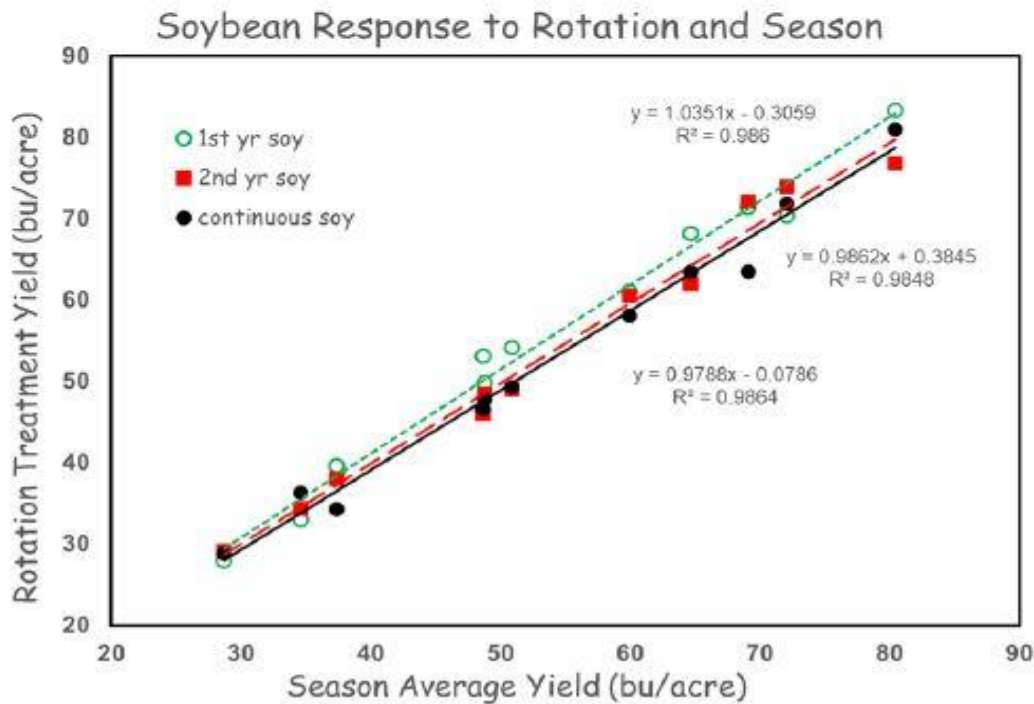


Figure 3. Soybean grain yield response to season/production year and crop rotation. 2014-2019 Lexington, KY.

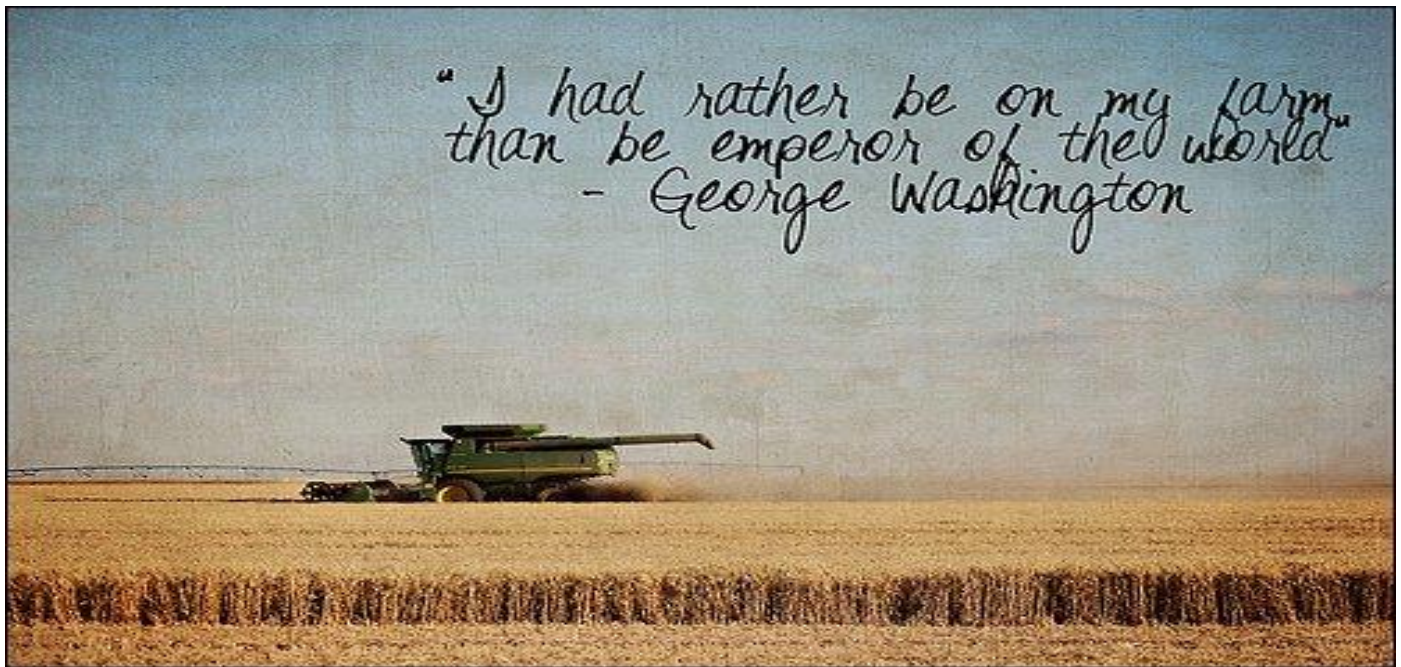
The 'rotation effect' is one of the earliest known manifestations of soil health – reported in ancient Roman agricultural texts. Most of us understand the benefits of crop rotation without knowing exactly how/why the 'rotation effect' occurs. The 'rotation effect' is derived from the soil, likely a change in soil microbiology brought on by changing the crop species production sequence and thereby improving soil health and increasing grain crop productivity. Most grain producers are promoting soil health every production season.

Hendrix, J.W, B.Z. Guo, and Z.-Q. An. 1995. Divergence of mycorrhizal fungal communities in crop production systems. *In* The Significance and Regulation of Soil Biodiversity. Eds. H.P. Collins, G.P. Robertson, and M.J. Klug. pp. 131-140. Kluwer Academic. The Netherlands.

Johnson, N.C., P.J. Copeland, R.K. Crookston, and F.L. Pflieger. 1992. Mycorrhizae: Possible explanation for yield decline with continuous corn and soybean. *Agron. J.* 387-390.

**Dr. John Grove**

UK Agronomy/Soils Research & Extension (859) 568-1301 [jgrove@uky.edu](mailto:jgrove@uky.edu)



Information released by

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Carlisle County Extension Agent  
Agriculture & Natural Resources



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