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USDA Acreage Report Results: Price and Crop Insurance Impacts

The United States Department of Agriculture (USDA) updates its estimates of U.S. supply and demand factors for selected crops throughout the year. This article explores projection updates via the USDA Acreage Report (AR), released on June 30, 2023, and marketing and risk management implications. We point out why soybean prices have a higher possibility of upward price movement than corn as of July 11, 2023. We also discuss crop insurance products, finding that 85% revenue protection, Enhanced Coverage Option (ECO), and Supplemental Coverage Option (SCO) would trigger should the growing season end today. It is worth noting that the July World Agricultural Supply and Demand Estimates (WASDE) will be released on Wednesday, July 12. The July WASDE is expected to update 2023 yield projections, but this article could not include the information due to publication dates.

The Projected acreage for three crops (corn, soybeans, and wheat) and the percentage change in acreage estimates can be found in Table 1. The initial estimate for corn acreage was 91 million acres in February, which was increased to 92 million in March, and now sits at 94 million in June. This is the third-highest number of acres planted to corn since 1944 (USDA-NASS, 2023). It is worth noting that corn harvested for grain makes up a smaller number of acres at 86.3 million acres but is still up 9% from last year (USDA-NASS, 2023). Estimated soybean acreage dropped 4.6% to 83.5 million acres in the most recent acreage report, whereas wheat acreage has been similar in all three reports.

Looking at the possible price impacts in the acreage report, we closely examine corn and soybeans, which have experienced the largest acreage changes. Recent upticks in the prices of both commodities

Table 1: Acres Planted by USDA Report and Percentage Change

Report Month	AOF February	PPR March	AR June	% Change from February	% Change from March
Corn Acres (Millions)	91	92.0	94.1	3.4%	2.3%
Soybean Acres (Millions)	87.5	87.5	83.5	-4.6%	-4.6%
Wheat Acres (Millions)	49.5	49.9	49.6	0.3%	-0.5%

Note: In February, initial estimates are released at the Agricultural Outlook Forum (AOF) (Smith and Gardner, 2023). Acreage is then updated in March in Prospective Planting Report (PPR) (Gardner, 2023). The June Acreage Report (AR) released the most recent estimate.

have been driven by drought throughout major crop-producing states, causing a weather-induced "crop scare event." During this crop scare, the drought impacted corn and soybean supply expectations which caused market and futures prices to increase drastically. Prices peaked on June 21 and began to fall due to rainfall in key production states such as Indiana, Illinois, and Iowa. The large increase in corn acreage in the June acreage report will make the corn market price less susceptible to future supply shocks, causing a lower price environment. However, the opposite may hold for soybeans which have dropped 4 million acres. As there are fewer soybean acres than previously projected, soybean prices could be more susceptible to further price increases due to detrimental weather, which causes deterioration in crop conditions and expected yield.

Corn and soybeans had opposite price responses to the June Acreage Report, with the corn price decreasing 33 cents to \$4.95/bu and soybeans increasing 77 cents to \$13.42/bu. As of July 11, corn prices have rebounded to above \$5.00, and soybean prices have increased to \$13.62/bu. A marketing tool available to producers that could be considered is buying a put option to place a floor on the futures price. A put option gives the right but not the obligation to sell a futures contract at the strike price specified in the put option contract, so long as the futures price is below the strike price when the option is exercised (i.e., "in the money"). Producers can use this strategy to protect against futures market price declines while allowing them to benefit if prices rally. See Biram and Smith (2022) for an explanation of using options to augment one's risk management plan. Additionally, producers can manage price risk in their local cash market by locking in prices received at harvest at a local grain elevator or grain purchaser through forward contracting (see Maples, 2023).

Lastly, we look at a producer's potential price protections with purchased crop insurance by considering the futures price as of the afternoon of July 11, 2023, relative to the projected crop insurance price released by USDA-RMA in the winter (Table 2). Harvest month soybean futures contracts are very

Table 2. Current Futures Price as a Percentage of RMA Projected Price

Crop	Futures Price	Projected Price	% of Projected Price
Corn (ZCZ23)	\$5.04/bu	\$5.94/bu	84.8%
Soybeans (ZSX23)	\$13.63/bu	\$13.65/bu	99.9%

close to the projected price; however, harvest month corn futures contracts are substantially lower. Notably, if the 2023 growing season were to end today, holding the 2023 harvest yield the same as the APH yield, 85% Revenue Protection would trigger an indemnity for corn, with ZCZ23 being 84.9% of the projected price. The current harvest month corn futures price would also trigger an indemnity under Enhanced Coverage Option (ECO) and Supplemental Coverage Option (SCO), assuming no difference in the county expected harvest yield and established APH. ECO and SCO trigger an indemnity once county-level revenue falls below 95% and 86% of the county-level revenue guarantee, respectively.

Note: Hunter Biram, University of Arkansas contributed to this article.

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2023

UK Corn, Soybean & Tobacco Field Day

July 25, 2023

UKREC

1205 Hopkinsville St.

Talks begin: 8 am (CT)

Pre-register:

[2023 C,S&T Field Day](#)



EDUCATIONAL CREDITS:

GC IPM Stop

CCA: 1 PM

Pesticide: 1hr Cat 4

GC Management stop

CCA: 1 CM

Pesticide: 1hr Cat 10

Tobacco Stop

CCA: 0.5 CM, 0.5 PM

Pesticide: 1hr Cat 1A

TOPICS INCLUDE:

- Corn Disease Concerns for 2023
- Red Crown Rot of Soybean: A New Disease to Kentucky
- The New “Non-certified Pesticide Applicator’s” Category
- UKREC Tobacco Barn Construction Update
- Evaluating Biological N Fixation for Corn
- Tobacco Types Grown in Kentucky: Old vs. New Varieties
- Do We Need to Spray for Caterpillars in Soybeans?
- Comparing Wheat, Barley, and Rye Cover Crops Before Corn
- Flea Beetle Management in Tobacco
- The Continuing Battle Against Problematic Weeds!
- Corn & Soybean Outlook
- Potassium Chloride Use in Tobacco
- Effect of Fungicides on Cigar Wrapper Leaf Production



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Corn & Soybean Plant Tissue Analyses: Problem Diagnosis and Fertility Program Evaluation

Corn and soybean are at or approaching growth stage R1 (silking for corn and early flowering for soybean). This makes it a good time to take leaf tissue samples. Objectives of sampling at this time in the crop's lifecycle are either: a) monitoring/evaluating your fertility/nutrition program for the season; or b) evaluating areas of poor crop growth by taking samples within and outside of those areas to discover any nutrient limitations within the areas of poor crop growth.

Taking Samples – Right Growth Stage/Right Leaf on The Plant. In corn, growth stage R1 starts when the silks are visible outside the husks. The sample consists of 5 to 10 randomly selected ear leaves – leaves taken at the ear node where the silk is emerging. In soybean, growth stage R1 begins with the first flower in the middle (nodes 3 to 6) of the plant. The sample consists of 20 to 30 randomly taken most recent but mature trifoliolate leaves (typically 3rd trifoliolate from the top of the plant). Plants need to be at the right growth stage when sampled. The right leaf on the plant needs to be taken. Otherwise, the lab results could mislead, causing poor diagnoses and/or incorrect recommendations for changing the current nutrient management program.

As the crop matures the diagnostic value of plant tissue analysis declines – leaf nutrient values fall as many of those nutrients are transported into the developing grain. Corn and soybean leaves have a high N concentration when young, but that concentration can decrease quickly as the plant grows because the crop plants will mobilize N from older to younger tissues (leaves and grain). This is also true for leaf phosphorus (P) and potassium (K) levels. This means that the N, P and K analyses you get from the lab could vary depending on the age of the leaves that were sent. That is why useful results require close attention to sampling a specific plant part at a particular growth stage.

Sample Handling. Place the sample in a clean brown paper bag. Avoid dust or soil contamination. If dust is present, shake or brush to remove. Don't rinse/wash as some nutrients, especially K, may be lost. Allow samples to air or microwave dry (to a moisture content like that of dry hay) or send immediately to the lab using next-day delivery. Don't use a plastic bag – encourages mold formation.

Interpreting the Lab Results. When your lab results arrive, you can compare them with these data from AGR-92 (Table 1). Note the width in sufficiency ranges. This makes interpretations based on nutrient ratios less valuable.

Table 1. Nutrient sufficiency ranges for corn and soybean leaves taken at growth stage R1.

Crop	N	P	K	Ca	Mg	S
	----- Percent (%) -----					
corn	2.80-4.00	0.25-0.50	1.80-3.00	0.25-0.80	0.15-0.60	0.15-0.60
soybean	3.25-5.00	0.30-0.60	1.50-2.25	0.80-1.40	0.25-0.70	0.25-0.60

Crop	Fe	Mn	Zn	Cu	B	Mo
	----- Parts per Million (ppm) -----					
corn	30-250	15-250	20-70	5-25	5-25	0.1-2.0
soybean	25-300	17-100	21-80	4-30	20-60	0.1-2.0


You do need to consider recent seasonal weather that can impact crop nutrient uptake, and especially any drought conditions that may have restricted plant dry matter (DM) growth. Drought can cause tissue nutrient concentrations to be higher than normal. Remember that tissue nutrient concentrations are a ratio: nutrient mass/DM mass) and water stress tends to restrict DM formation, causing the ratio to be greater than normal.

Nutrient uptake can be affected by factors other than soil nutrient availability or drought. These may include soil pH, compaction, herbicide injury, temperature, wetness, cloudiness, insects, diseases, etc. When the analysis results are not optimal, you need to find the cause before trying to remedy any deficiency. Symptoms might not be relieved by simply applying more fertilizer containing a deficient nutrient element. This means that plant tissue analysis is a complement to, not a substitute for, soil testing. Indeed, when taking tissue samples to diagnose problem areas that appear stunted or discolored, soil samples should be taken coincident with plant samples, in both good and bad areas, to improve the likelihood of a proper diagnosis of the problem. See [AGR-92, Sampling Plant Tissue for Nutrient Analysis](#) , for additional information.



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The University of Kentucky Crop Variety Testing Program has a new centralized website: <https://varietytesting.ca.uky.edu/>. Use this new site for direct access to the most current results and information on Kentucky soybean, corn, wheat and small grain variety trials.



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UK CORN, SOYBEAN & TOBACCO

FIELD DAY

July 25, 2023

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