



# WEIGHTS & MEASURES IN AGRICULTURE

## NCWM Interim Meeting

January 8 – 11, 2017

Ron Hayes

*Agriculture.Mo.Gov*



[agriculture.mo.gov/](http://agriculture.mo.gov/)

**MISSOURI AGRICULTURE**  
*2016 Economic Contribution Study*

Brought to you by:

Missouri Department of Agriculture | Missouri Farm Bureau | Missouri Agricultural & Small Business Development Authority

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## ***Mission Statement***

***"To serve, promote, and protect the agricultural producers, processors, and consumers of Missouri's food, fuel, and fiber products."***

# Missouri Agriculture's Economic Impact

In 2016, agriculture, forestry and related industries in Missouri contributed:

**\$88.4 billion** economic impact

\$33.0 in value-added plus \$55.4 billion in inputs

**378,232** jobs

**\$17.5 billion** in labor income

**\$2.2 billion** in state/local taxes

**\$4.0 billion** in federal taxes

Of the \$33.0 billion in added value from the agriculture, forestry, and related economic activity:

Crops, Livestock, Forestry, and Fisheries Production contributed: **\$9.4 billion**

Agriculture Inputs and Services contributed: **\$5.0 billion**

Food and Related Products Manufacturing contributed: **\$15.5 billion**

Forestry Products Manufacturing contributed: **\$3.2 billion**

# Missouri Agriculture's Economic Impact

Of the industries studied, the following are the top three contributors of value-added to the State of Missouri:

Breweries: **\$2.9 billion**

Oilseed Farming: **\$2.3 billion**

Dog and Cat Food Manufacturing: **\$2.3 billion**

In addition to analyzing agriculture, forestry, and related economic activity at the state level, county level and congressional district results are available in separate reports.

## State of Missouri Sales Summary (\$88.4 Billion)

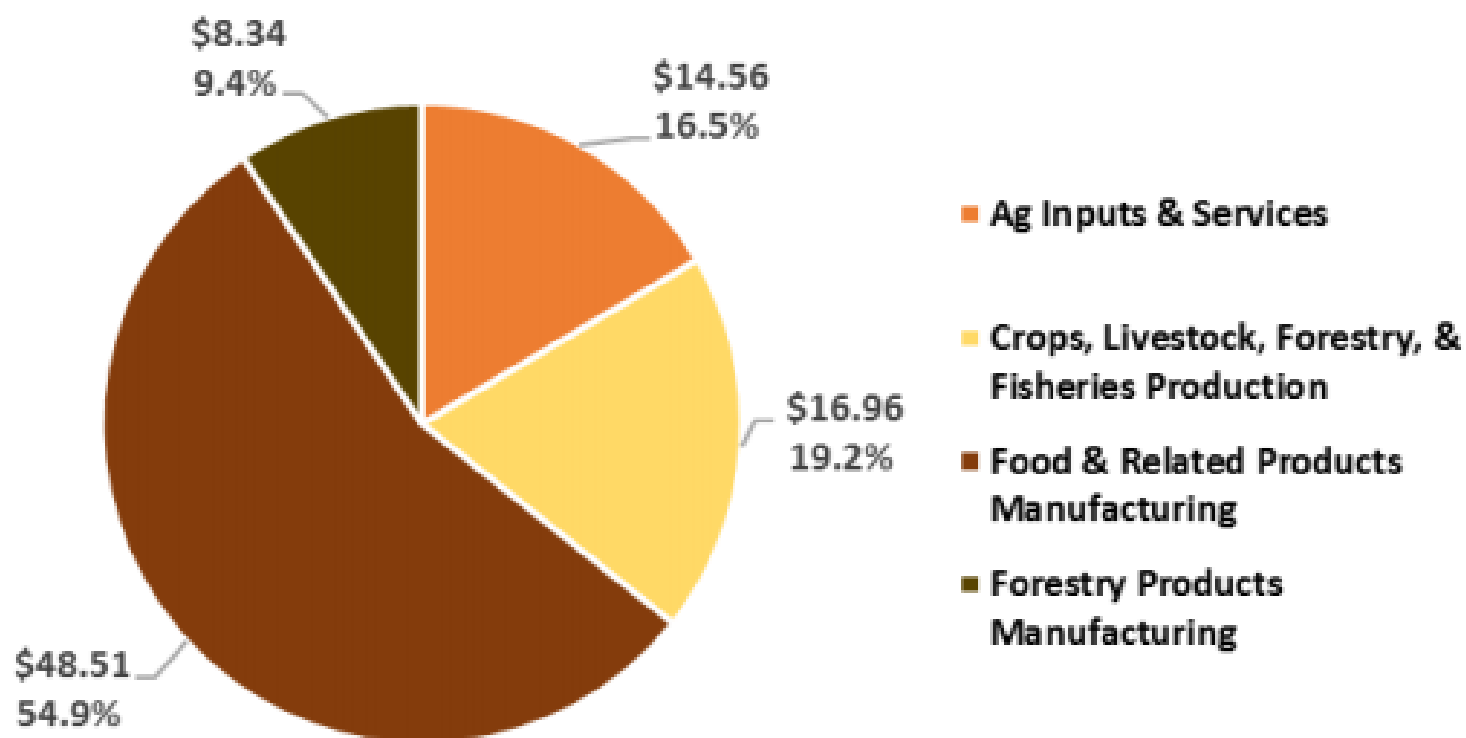


Figure 5, State of Missouri Value-Added Summary (\$B)





Figure 6, Agriculture, Forestry and Related Industries: Total Sales by County (\$M)

**Missouri is ranked in the top ten states for:**

- Number of farm operations (#2)
- Biodiesel production (#2)
- Forage land used for all hay, haylage, grass silage, and greenchop acres (#2)
- Beef cows (#3)
- Turkeys inventory (#4)
- Soybean acres (#4)
- Rice acres harvested (#4)
- Hogs and pigs sales (#7)
- Broilers and other meat-type chickens inventory (#9)
- Corn acres planted (#9)
- Cotton and cotton seed sales (#9)
- Ice cream production (#9)

**Additionally, other important agricultural production in Missouri includes:**

- Ethanol production<sup>1</sup> (#12)
- Pullets inventory (#13)
- All wheat for grain acres (#13)
- Tobacco sales (#15)
- Sheep, goats and their products (#15)



## EXPLORE THE JOURNEY OF FOOD!

Dig Deeper as we take a look at the science of the most important element of our daily lives: Our food. Where does it come from? How does it grow? How far does it travel? And how can each of us make a difference so we can all eat? You'll find the answers to all these questions and so much more at this one-of-a-kind exhibit focusing in on the journey of food.

We all have a role to play in the stewardship of our food supply and right here at the Saint Louis Science Center, we have the opportunity to show you exactly how you can make a difference. Welcome to **GROW!**



## GROW CARTS

Look for our activity carts used by staff for educational programs and activities around GROW

## GREENHOUSE

- Tours offered as part of scheduled program

## FARM TECH FIELD

- The Harvester
- Tractor Run
- Technology in Agriculture

## ANIMAL CORRAL

- Digest This!
- Tummy Textures
- Livestock Corral
- The Milking Parlor

## GROW PAVILION

- Bi-State Agriculture Map
- Farm to Fork Adventure
- Seed Lending Library
- The Hive

## BOTANY BASICS

- Plant Power
- Roots to Branches
- Birds, Bees, Plants, and Seeds
- Fruit Orchard
- Ozone Garden

## FERMENTATION STATION

## HOME GROWN

- Soil City
- The Chicken Yard
- UFO Chicken Coop

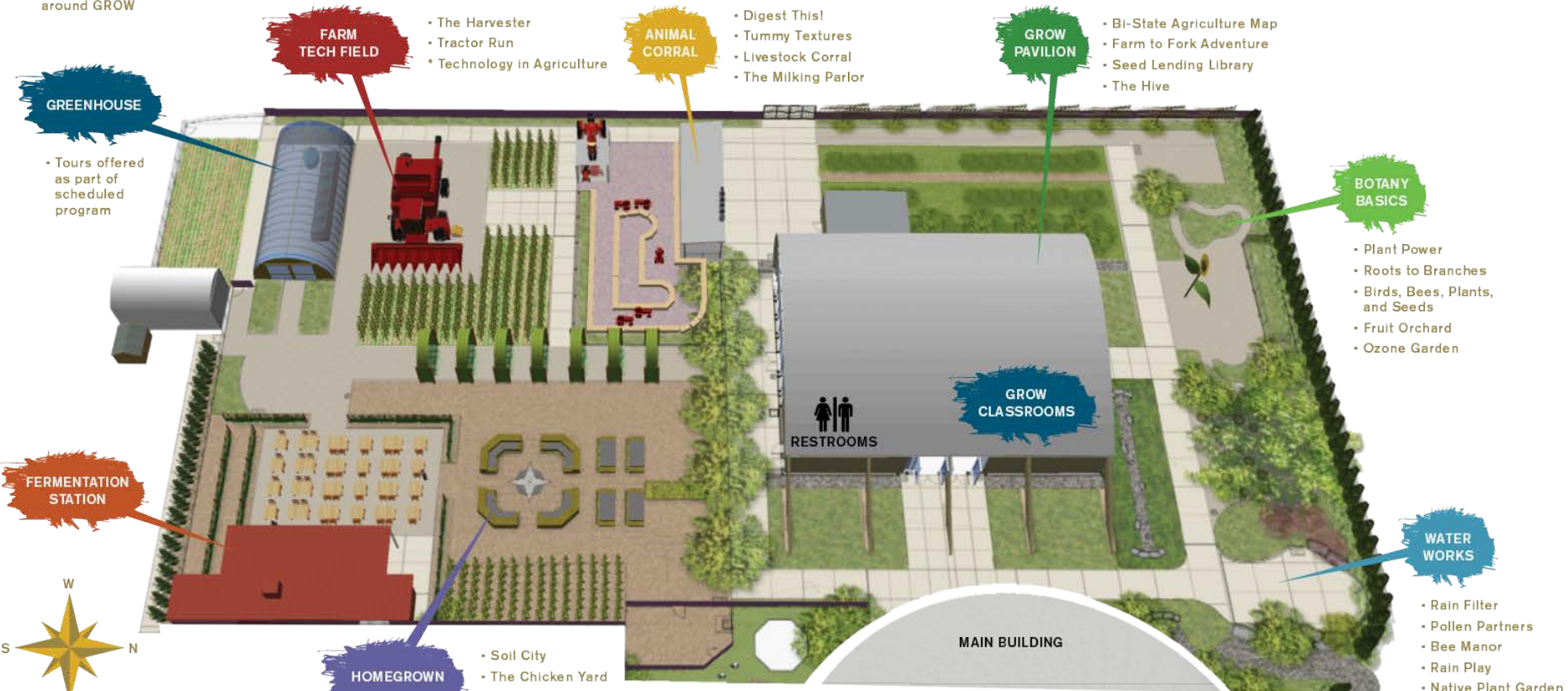
## GROW CLASSROOMS

RESTROOMS

## WATER WORKS

- Rain Filter
- Pollen Partners
- Bee Manor
- Rain Play
- Native Plant Garden

MAIN BUILDING























# FARM SCAPE

at St. Louis Ballpark Village



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# Governor Signs Ag Bills



# MISSOURI

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## *A Story to Tell*

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LIVESTOCK AND FAMILIES IN RURAL MISSOURI

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# SETTING THE STANDARD

Legendary ag leader Ron Hayes and his division enforce an equitable marketplace

For nearly 40 years, Ron Hayes has served in the unheralded, noble role of enforcing honesty and equity among goods in the marketplace. Along the way, he has earned a legendary reputation, particularly in setting the bar for fuel quality at the pump.

"When I think about fuel quality, every place you look, there is a reminder of Ron Hayes' work," says Jerry Bucodol, chairman of the National Conference on Weights and Measures. "A lot of Ron's thinking and leadership are reflected in the standards we have adopted across the nation. He is

the man behind these things we all take for granted."

Whether setting the standard for octane, vapor pressure, cleanliness or labeling, Hayes deserves credit for the quality of fuel that makes the economy move forward. Meanwhile, he has helped set countless other nationwide weights and measures standards throughout his lengthy career. An educator and leader in the field, Hayes has served and continues to serve on various industry committees and boards at the national level.

As director of the Missouri Department of Agriculture's

Weights, Measures and Consumer Protection Division Director Ron Hayes helped form the international standard for measuring biodiesel content of diesel fuel, among other contributions.

Staff Photos by Michael D. Tidmore





Division of Weights, Measures and Consumer Protection, Hayes and his team monitor the accuracy of commercial weighing and measuring devices. His division makes sure consumers receive what they pay for in both quantity and quality. Such enforcement ensures Missouri businesses compete fairly and consumers buy with confidence, Hayes says.

"Consumers cannot be an expert in all these fields, so they have to have confidence in the products they buy," Hayes says. "What we are trying to do is protect the consumer in all of these areas."



From top: Ken Horman, metrologist in the Division of Weights, Measures and Consumer Protection, calibrates test weights to ensure accuracy; Larry Raymond, chief inspector, checks the precision of a grocery store scale and Tanner Reid, fuel device safety inspector, ensures accuracy of gas pumps and safety at fueling stations.



#### WIDE INFLUENCE

Hayes started with the division in 1976 as an inspector for the grain moisture tester program. In the 1980s, he helped establish the Missouri's first fuel quality testing program at the department.

"Fuel quality was my big, original passion," Hayes says. "I like to say we have the best fuel quality program in the nation."

Among his most notable work, Hayes helped form a standard to measure biodiesel content in diesel fuel. The standard quickly reached the international level, and today, Missouri-born standard ASTM D7371 ensures the biodiesel that consumers and businesses purchase contains the blend shown on the label.

Even with four decades of accomplishments, Hayes has barely thought of retirement. He has a few goals to attain first — no surprise to Buendel, who describes Hayes as determined. Even if an issue lacks early traction, Hayes will work for what he believes. Due to his persistence, consumers everywhere benefit.

"When we go to the grocery store or any place where consumers are being affected, you think about people like Ron and the work they do silently in the background to



MISSOURI DEPARTMENT OF AGRICULTURE'S DIVISION OF WEIGHTS, MEASURES AND CONSUMER PROTECTION MAINTAINS SURVEILLANCE OF COMMERCIAL WEIGHING AND MEASURING DEVICES.



Thanks to fuel pump inspectors at the division, more than 98 percent of devices pass inspections for accuracy.

DIRECTOR RON HAYES FIRST JOINED THE DIVISION IN 1976 AS AN INSPECTOR FOR THE GRAIN MOISTURE METER PROGRAM.

**17** sections under the Division of Weights, Measures and Consumer Protection

Source: Missouri Department of Agriculture Division of Weights, Measures and Consumer Protection

make sure consumers get what they pay for... and businesses are playing by the same rules," Buendel says.

#### GET WHAT YOU PAY FOR

Whether it's a cash register's produce scale, a fuel pump's octane label or net weights on wood packages, Hayes' division ensures consumers receive their money's worth at Missouri retailers.

The Division of Weights, Measures and Consumer Protection includes 84 employees in 17 sections. Among their duties, staff members inspect propane gas meters on delivery trucks and police against unfair milk pricing. They weigh store-packaged meats to ensure consumers pay per pound for only meat and not the packaging itself. The division's metrology lab calibrates weights and field testing equipment. Employees confirm country-of-origin labeling, and inspectors test fuel quality of gasoline, diesel and more.

Missouri inspectors also test fuel pumps every six months — more frequently than any other state. As a result, less than 2 percent of devices rate "out of tolerance" in terms of accuracy.

— Joanne Stiers

Learn more about the Missouri Department of Agriculture at [mo-agriculture.com](http://mo-agriculture.com).

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# Ag Rundown with Director Fordyce



# Ag Rundown with Director Fordyce





# Governor's Conference on Agriculture







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