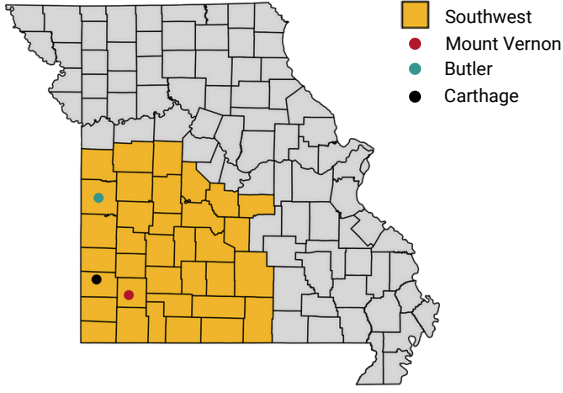




# SOYBEAN GROWTH MONITORING

WEEK: 07/09 - SOUTHWEST - MO



- The rainfall over the last two weeks has brought soil moisture back to high levels. This increased water availability helps initiate seed filling and pod setting in beans planted from April to mid-June in soils with moderate to good drainage.
- A brief drought spell between June 6 and June 26 affected beans planted in April during their pod-setting or flowering stages. The drought and high temperatures during these critical developmental stages are likely to decrease yield predictions for the region.
- Late-planted beans are unaffected by the June drought and remain with yield prediction close to the "normal" expected yield.
- The yield prediction model is not yet calibrated for oxygen stress.

## 2024 Relative Yield Prediction

Planting date:

04-05-2024			04-26-2024			05-17-2024			06-07-2024		
MG 3	MG 4	MG 5	MG 3	MG 4	MG 5	MG 3	MG 4	MG 5	MG 3	MG 4	MG 5
-4%	-6%	-9%	-4%	-6%	-9%	+3%	+1%	+1%	0%	-1%	+1%

### Historical Baseline Yield\*

<b>Mount Vernon</b> (Lawrence County) <b>37 bu/acre</b>	<b>Butler</b> (Bates County) <b>40 bu/acre</b>	<b>Carthage</b> (Jasper County) <b>36 bu/acre</b>
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- **Obs 1:** The 2024 yield prediction is relative to the normal yield of the same maturity group planted on the same date.
- **Obs 2:** \*The historical baseline yield is the average from 2019 to 2023 reported by USDA-NASS Survey Program.

## Soil water content

Planting date: 04-05-2024

04-26-2024

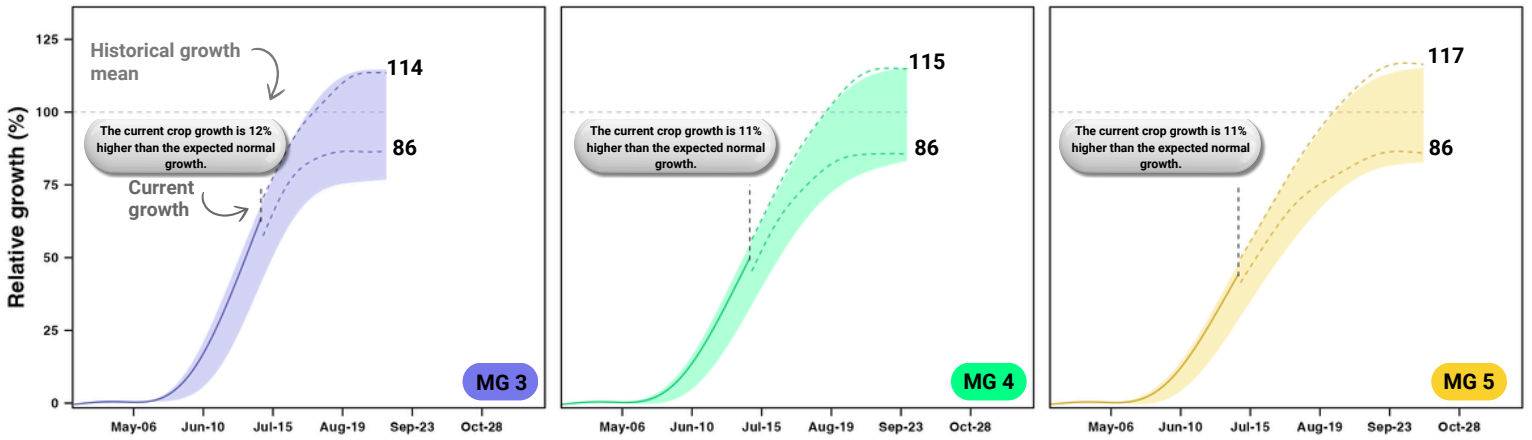
05-17-2024

06-07-2024

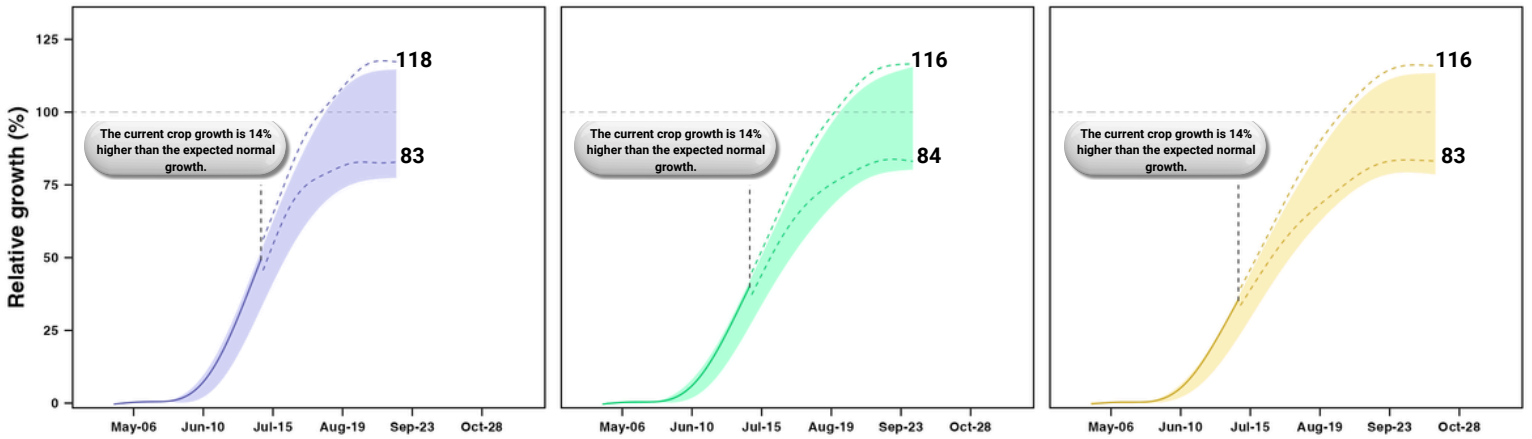
Soil layer	04-05-2024			04-26-2024			05-17-2024			06-07-2024		
	0-9in	9-23in	23-54in	0-9in	9-23in	23-54in	0-9in	9-23in	23-54in	0-8in	8-30in	30-60in
<b>Mount Vernon</b> (Wilderness gravelly silt loam)	95%	90%	76%	98%	90%	79%	98%	95%	90%	90%	95%	98%
<b>Butler</b> (Kenoma silt loam)	86%	82%	79%	86%	82%	80%	80%	78%	75%	62%	69%	74%
<b>Carthage</b> (Maple Grove silt loam)	72%	50%	41%	70%	40%	40%	60%	46%	42%	56%	62%	67%

### End-of-season growth prediction

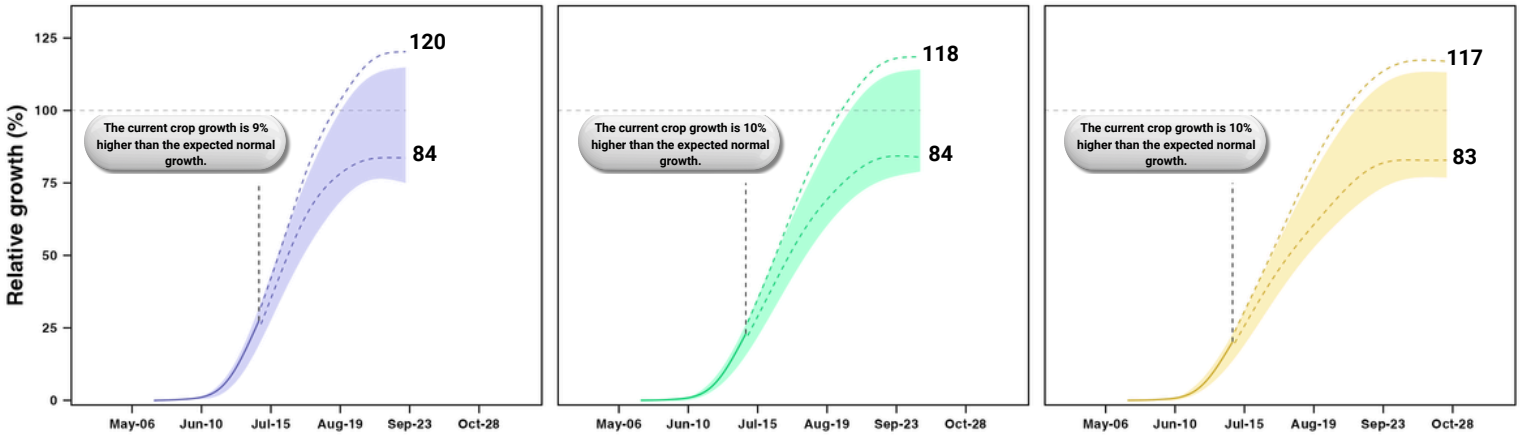
Planting date: 04-05-2024



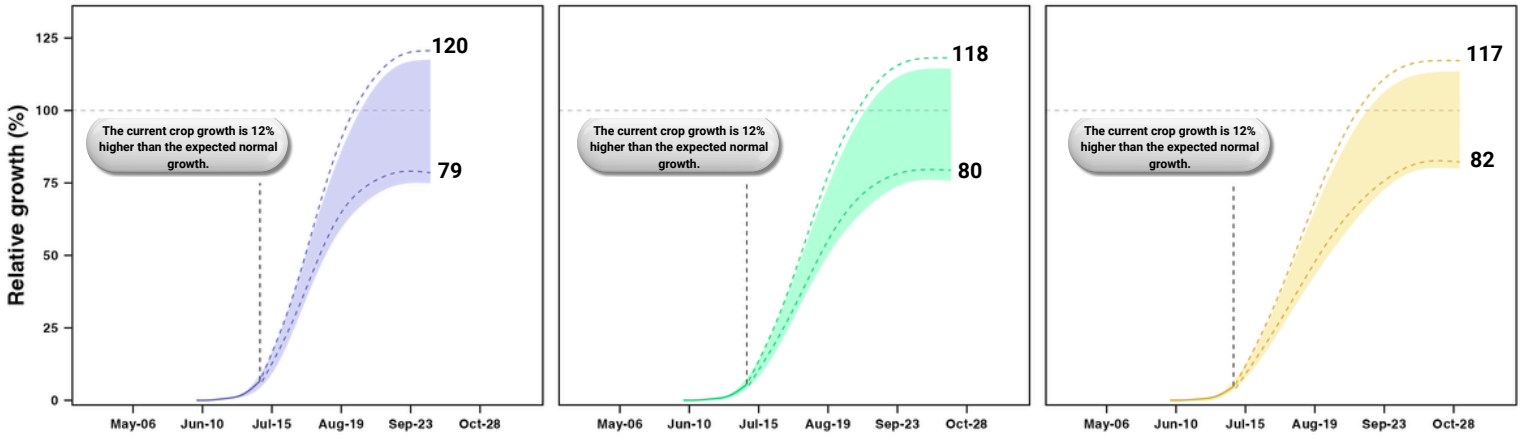
Planting date: 04-26-2024



Planting date: 05-17-2024



Planting date: 06-07-2024



Normal growth distribution
  Current growth
  Current growth distribution MIN/MAX

The normal growth represents the average growth expected at the reporting date, derived from simulating a current crop variety using 40 years of historical weather data specific to a particular location and planting date.

### Growth Cycle

Planting date: 04-05-2024

04-26-2024

05-17-2024

06-07-2024

Stage	Nodes	Harvest
MG 3 R5	16	08/14 ± 4 days
MG 4 R3	17	08/30 ± 5 days
MG 5 R1	16	09/11 ± 5 days

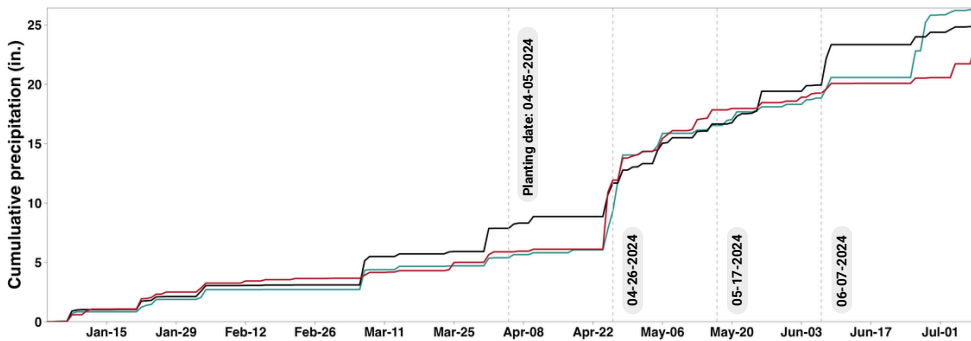
Stage	Nodes	Harvest
R3	14	08/22 ± 4 days
R3	14	09/05 ± 5 days
R1	14	09/17 ± 5 days

Stage	Nodes	Harvest
R1	11	09/02 ± 4 days
R1	11	09/14 ± 4 days
V11	11	09/26 ± 5 days

Stage	Nodes	Harvest
V6	6	09/13 ± 4 days
V6	6	09/24 ± 5 days
V6	6	10/05 ± 6 days

The stage and nodes indicate the current crop development as of the date of this report.

### Rainfall



### Drought Stress

Planting date:	MG 3	MG 4	MG 5
04-05-2024	3%	2%	3%
04-26-2024	0%	0%	0%
05-17-2024	0%	0%	0%
06-07-2024	0%	0%	0%

Drought stress is estimated by the cumulative crop transpiration reduction.