

## Estimates of State-Level Losses on Corn Acres Resulting from COVID-19 on 2019 and 2020 Production

Report prepared for National Corn Growers Association  
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We provide estimates of losses from COVID-19 on corn acres by state on 2019 and 2020 production. Table 1 summarizes losses by state.

**Table 1. Decline in Corn Revenue on 2019 and 2020 Production Due to COVID-19.**

State	2019 Production	2020 Production	Two-Year Total
	Dollars	Dollars	Dollars
Colorado	-13,647,400	-38,094,189	-51,741,589
Illinois	-137,659,200	-342,127,408	-479,786,608
Indiana	-48,845,880	-159,817,533	-208,663,413
Iowa	-303,255,900	-511,441,245	-814,697,145
Kansas	-68,013,960	-205,841,285	-273,855,245
Kentucky	-25,076,300	-36,611,550	-61,687,850
Michigan	-30,561,020	-60,047,102	-90,608,122
Minnesota	-213,643,000	-302,181,615	-515,824,615
Missouri	-47,301,800	-102,517,766	-149,819,566
Nebraska	-269,500,320	-406,023,312	-675,523,632
North Carolina	-9,082,380	-24,697,536	-33,779,916
North Dakota	-63,553,480	-99,750,535	-163,304,015
Ohio	-53,080,780	-102,922,903	-156,003,683
Pennsylvania	-22,448,680	-65,139,892	-87,588,572
South Dakota	-79,621,380	-194,411,536	-274,032,916
Tennessee	-20,558,720	-38,165,359	-58,724,079
Texas	-40,372,700	-69,734,219	-110,106,919
Wisconsin	-71,839,020	-115,610,567	-187,449,587

<sup>1</sup> See Table 2 for detailed estimates

<sup>2</sup> See Table 3 for detailed estimates

<sup>3</sup> Sum of 2019 and 2020 impacts. COVID-19 control measures are expected to continue to impact revenues in future crop in 2021 and beyond.

Several notes:

1. The above loss estimates include a Coronavirus Food Assistance Payment (CFAP) payment on 2019 production. PLC payments also are included and offset losses from price declines in 2019 and 2020.
2. PLC payments are decoupled and do not occur on planted acres. PLC payments will provide lower support for losses caused by COVID-19 on soybean acres. In some senses, the PLC payments shown in this report over-state support offered by the commodity title programs.
3. We do not include losses for 2021 and succeeding years. Losses will continue into 2021 and beyond.
4. Detail on the above loss estimates are provided in Tables 2 and 3.

Note that Table 2 is an update from a May 30, 2020 report prepared for NCGA entitled “Estimates of State-Level Losses on Corn Acres Resulting from COVID-19 on 2019 Production”. The table is updated to include CFAP payments;

**Table 2. Change in Revenue and PLC Payments By State for Corn Resulting from COVID-19 on 2019 Production.**

State	Price Change 2019 Crop <sup>1</sup>	2019 Yield <sup>2</sup>	Revenue Change <sup>3</sup>	Increase in PLC Payment <sup>4</sup>	CFAP Payment <sup>5</sup>	Revenue and PLC Change <sup>6</sup>	Acres Harvested <sup>7</sup>	Revenue Change <sup>8</sup>
	\$/bu.	Bu/acre	\$/acre	\$/acre		\$/acre	acre	Dollars
Colorado	-0.29	123	-35.67	8.69	16.48	-10.50	1,300,000	-13,647,400
Illinois	-0.28	181	-50.68	12.93	24.25	-13.50	10,200,000	-137,659,200
Indiana	-0.27	169	-45.63	12.85	22.65	-10.13	4,820,000	-48,845,880
Iowa	-0.31	198	-61.38	11.61	26.53	-23.24	13,050,000	-303,255,900
Kansas	-0.26	133	-34.58	5.46	17.82	-11.30	6,020,000	-68,013,960
Kentucky	-0.30	169	-50.70	10.76	22.65	-17.29	1,450,000	-25,076,300
Michigan	-0.37	147	-54.39	15.71	19.70	-18.98	1,610,000	-30,561,020
Minnesota	-0.37	173	-64.01	11.36	23.18	-29.47	7,250,000	-213,643,000
Missouri	-0.30	155	-46.50	9.91	20.77	-15.82	2,990,000	-47,301,800
Nebraska	-0.34	182	-61.88	10.02	24.39	-27.47	9,810,000	-269,500,320
North Carolina	-0.29	111	-32.19	7.55	14.87	-9.77	930,000	-9,082,380
North Dakota	-0.32	141	-45.12	6.55	18.89	-19.68	3,230,000	-63,553,480
Ohio	-0.35	164	-57.40	14.77	21.98	-20.65	2,570,000	-53,080,780
Pennsylvania	-0.32	153	-48.96	7.28	20.50	-21.18	1,060,000	-22,448,680
South Dakota	-0.36	144	-51.84	11.97	19.30	-20.57	3,870,000	-79,621,380
Tennessee	-0.31	177	-54.87	8.56	23.72	-22.59	910,000	-20,558,720
Texas	-0.34	133	-45.22	8.62	17.82	-18.78	2,150,000	-40,372,700
Wisconsin	-0.38	166	-63.08	13.93	22.24	-26.91	2,670,000	-71,839,020

<sup>1</sup> Equals the price change from March onward resulting from COVID-19 concerns. Calculated using information from NASS, AMS, and ERS.

<sup>2</sup> Taken from NASS.

<sup>3</sup> Equals price change times yield per acre.

<sup>4</sup> Estimate of PLC payment change based on a \$3.60 MYA price, average yield in state from 2013 to 2017 times .81, times average base acres in corn divided by 2019 harvested acres times .75 enrolled in PLC.

<sup>5</sup> Equals 2019 yield x .335 payment rate times 40%. We assume 40% of corn production was eligible inventory on January 15.

<sup>6</sup> Sum of revenue and PLC change.

<sup>7</sup> Acres harvested reported by NASS

<sup>8</sup> Revenue and PLC change times acres harvested.

**Table 3. Change in Revenue and PLC Payments By State for Corn Resulting from COVID-19 on 2020 Production.**

State	2020 Expected Yield <sup>1</sup>	COVID Induced Revenue Decline <sup>2</sup>	PLC Payment <sup>3</sup>	Per Acre Revenue Change <sup>4</sup>	Acres Harvested <sup>5</sup>	Revenue Change <sup>6</sup>
	\$/bu.	\$/acre	\$/acre	\$/acre	acres	Dollars
Colorado	138	-\$69.00	43.47	-25.53	1,492,134	-38,094,189
Illinois	196	-\$98.00	64.52	-33.48	10,218,859	-342,127,408
Indiana	179	-\$89.50	59.03	-30.47	5,245,078	-159,817,533
Iowa	199	-\$99.50	59.39	-40.11	12,750,966	-511,441,245
Kansas	130	-\$65.00	28.87	-36.13	5,697,240	-205,841,285
Kentucky	169	-\$84.50	57.51	-26.99	1,356,486	-36,611,550
Michigan	165	-\$82.50	55.94	-26.56	2,260,810	-60,047,102
Minnesota	188	-\$94.00	54.22	-39.78	7,596,320	-302,181,615
Missouri	154	-\$77.00	45.51	-31.49	3,255,566	-102,517,766
Nebraska	189	-\$94.50	51.74	-42.76	9,495,400	-406,023,312
North Carolina	126	-\$63.00	36.99	-26.01	949,540	-24,697,536
North Dakota	142	-\$71.00	36.53	-34.47	2,893,836	-99,750,535
Ohio	175	-\$87.50	56.74	-30.76	3,345,998	-102,922,903
Pennsylvania	155	-\$77.50	28.83	-48.67	1,338,399	-65,139,892
South Dakota	157	-\$78.50	42.67	-35.83	5,425,943	-194,411,536
Tennessee	164	-\$82.00	41.42	-40.58	940,497	-38,165,359
Texas	133	-\$66.50	37.94	-28.56	2,441,674	-69,734,219
Wisconsin	171	-\$85.50	52.72	-32.78	3,526,863	-115,610,567

<sup>1</sup> Equals the trend yield for each state based on the past 25-years of yields.

<sup>2</sup> Equals the 2020 expected yield times a \$.50 price decline. The \$.50 price decline is based on MYA prices averaging \$3.70 pre-COVID to \$3.20 post-COVID. See farmdoc Daily, April 29, 2020 for more discussion.

<sup>3</sup> Estimate of PLC payment change based on a \$3.60 MYA price, average yield in state from 2013 to 2017 times .81, times average base acres in corn divided by 2019 harvested acres time .75 enrolled in PLC.

<sup>4</sup> The sum of COVID induced revenue declines and PLC payments.

<sup>5</sup> Based on acres planted in *2020 Prospective Planting* report multiplied by 90.4%, the percent of harvested acres of planted acres in US projections in June WASDE report.

<sup>6</sup> Per acre revenue change times acres harvested.