IowaNREC 2017-2024 Crop Year Survey Data Extrapolation

**The statistical collection portrayed herein has been rounded for displaying data extrapolation.*

Corn & Soy Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Corn acres (CDL)	13,212,913	13,012,207	13,648,497	13,793,805	12,826,886	12,686,886	12,805,034	13,082,234	13,133,558
Soy acres (CDL)	9,782,215	9,956,734	9,275,193	9,553,928	10,150,325	10,046,351	9,850,104	10,128,623	9,842,934
Corn & soy acres total (CDL)	22,995,128	22,968,941	22,923,690	23,347,733	22,977,211	22,733,237	22,655,138	23,210,857	22,976,492

CDL = USDA Cropland Data Layer

Commercial Only Nitrogen Rates (lb/ac)	2017	2018	2019	2020	2021	2022	2023	2024	Average
Average N rate on corn in rotation	170.0	172.3	177.5	183.4	170.9	173.4	166.6	179.2	174.2
Average N rate on continuous corn	200.4	201.9	200.4	208.9	199.9	192.6	185.7	205.0	199.4

Crop Rotation	2022	2023	2024	Average
Continuous Corn	10.6%	12.7%	11.6%	11.6%
Corn-Soy	85.3%	84.6%	81.7%	83.9%
Extended Rotation	2.0%	1.4%	3.3%	2.2%
Corn-Small Grain-Soy	0.2%	0.1%	0.3%	0.2%
Other	1.9%	1.2%	3.1%	2.1%

	Percentage									Acres									Extrapolation
Cover Crop Practices:	2017	2018	2019	2020	2021	2022	2023	2024	Average	2017	2018	2019	2020	2021	2022	2023	2024	Average	Extrapolated Using
Cover crop planted	6.9%	8.8%	9.5%	13.3%	12.1%	16.6%	17.0%	16.7%	12.6%	1,586,664	2,021,267	2,177,751	3,105,248	2,780,243	3,773,717	3,851,373	3,876,213	2,896,560	Corn & soy acres
Rye cover crop	69.4%	82.8%	81.3%	90.9%	80.8%	81.8%	86.6%	89.6%	82.9%	1,101,145	1,673,609	1,770,511	2,822,671	2,246,436	3,086,901	3,335,289	3,473,087	2,438,706	Cover crop acres
Oat cover crop	9.1%	9.8%	2.8%	1.30%	5.50%	4.4%	6.1%	4.3%	5.4%	100,204	164,014	49,574	36,695	123,554	135,824	203,453	149,343	120,332	Cover crop acres
Species mix	NA	NA	11.20%	6.7%	12.30%	8.5%	5.5%	5.5%	8.3%	NA	NA	243,908	208,052	341,970	320,766	211,826	213,192	256,619	Cover crop acres
Other cover crop	21.5%	7.4%	4.80%	1.10%	1.5%	5.3%	1.7%	0.6%	5.5%	341,133	149,574	104,532	34,158	41,704	207,083	65,473	23,257	120,864	Cover crop acres
Commercial Nitrogen Application Practices:	2017	2018	2019	2020	2021	2022	2023	2024	Average	2017	2018	2019	2020	2021	2022	2023	2024	Average	Extrapolated Using
Fall anhydrous ammonia applied	38.9%	24.1%	23.5%	28.9%	43.1%	50.3%	49.5%	42.0%	37.5%	5,139,823	3,135,942	3,207,397	3,986,410	5,528,388	6,381,504	6,338,492	5,494,538	4,901,562	Corn acres
EPA-labeled inhibitor with fall anhydrous ammonia							63.1%	62.0%	62.6%							3,999,588	3,406,614	3,703,101	Fall anhydrous ammonia acres
Nitrapyrin inhibitor with fall anhydrous ammonia	72.6%	73.9%	84.8%	83.8%	86.0%	64.7%			77.6%	3,731,512	2,317,461	2,719,872	3,340,611	4,754,414	4,128,833			3,498,784	Fall anhydrous ammonia acres
Fall only	NA	NA	14.0%	17.4%	22.4%	27.8%	34.7%	23.9%	23.4%	NA	NA	1,910,790	2,400,122	2,873,222	3,526,954	4,443,347	3,126,654	3,046,848	Corn acres
Spring pre-plant only	42.1%	56.3%	50.9%	46.7%	40.3%	33.8%	36.5%	41.9%	43.6%	5,562,636	7,325,873	6,947,085	6,441,707	5,169,235	4,288,167	4,673,837	5,481,456	5,736,250	Corn acres
Spring pre-plant & in-season	9.9%	15.4%	16.9%	13.8%	13.2%	14.5%	10.5%	12.3%	13.3%	1,308,078	2,003,880	2,306,596	1,903,545	1,693,149	1,839,598	1,344,529	1,609,115	1,751,061	Corn acres
In-season only	2.1%	1.1%	1.1%	3.8%	1.7%	1.0%	2.5%	1.8%	1.9%	277,471	143,134	150,133	524,165	219,340	126,869	320,126	235,480	249,590	Corn acres
Fall & spring pre-plant	NA	NA	11.6%	9.7%	14.3%	14.4%	10.2%	10.7%	11.8%	NA	NA	1,583,226	1,337,999	1,834,245	1,826,912	1,306,113	1,399,799	1,548,049	Corn acres
Fall & in-season	NA	NA	3.2%	5.4%	4.7%	6.1%	3.7%	8.0%	5.2%	NA	NA	436,752	744,865	602,864	773,900	473,786	1,046,579	679,791	Corn acres
Fall & spring & in-season	NA	NA	2.3%	3.2%	3.4%	2.3%	2.0%	1.4%	2.4%	NA	NA	313,915	441,402	436,114	291,798	256,101	183,151	320,414	Corn acres
Variable rate applied	NA	NA	8.7%	10.1%	16.1%	9.8%	15.2%	12.2%	12.0%	NA	NA	1,187,419	1,393,174	2,065,129	1,243,315	1,946,365	1,596,033	1,571,906	Corn acres
Manure Practices:	2017	2018	2019	2020	2021	2022	2023	2024	Average	2017	2018	2019	2020	2021	2022	2023	2024	Average	Extrapolated Using
No manure used	81.5%	81.4%	80.8%	82.0%	79.7%	78.8%	76.5%	77.5%	79.8%	10,768,524	10,591,936	11,027,986	11,310,920	10,223,028	9,997,266	9,795,851	10,138,731	10,481,780	Corn acres
Beef manure used	6.8%	10.3%	8.8%	6.3%	9.5%	9.0%	11.8%	10.2%	9.1%	898,478	1,340,257	1,201,068	869,010	1,218,554	1,141,820	1,510,994	1,334,388	1,189,321	Corn acres
Beef & liquid swine manure used	0.0%	0.0%	0.3%	0.1%	0.1%	0.2%	0.4%	0.1%	0.2%	0	0	40,945	13,794	12,827	25,374	51,220	13,082	19,655	Corn acres
Liquid swine manure used	7.6%	5.4%	7.4%	8.1%	8.1%	8.9%	8.3%	7.9%	7.7%	1,004,181	702,659	1,009,989	1,117,298	1,038,978	1,129,133	1,062,818	1,033,496	1,012,319	Corn acres
Poultry manure used	1.6%	1.7%	1.9%	1.2%	1.6%	1.4%	1.7%	0.9%	1.5%	211,407	221,208	259,321	165,526	205,230	177,616	217,686	117,740	196,967	Corn acres
Dairy manure used	2.5%	1.1%	0.8%	2.1%	1.1%	1.7%	1.5%	3.3%	1.8%	330,323	143,134	109,188	289,670	141,096	215,677	192,076	431,714	231,610	Corn acres
Liquid swine manure fall applied	94.7%	84.2%	78.5%	87.3%	82.4%	91.8%	83.1%	91.2%	86.7%	950,960	591,639	792,841	975,401	856,118	1,036,544	883,202	942,549	878,657	Swine manure acres
Liquid swine manure spring applied	1.8%	2.5%	11.7%	3.4%	7.0%	4.7%	5.6%	0.0%	4.6%	18,075	17,566	118,169	37,988	72,728	53,069	59,518	0	47,139	Swine manure acres
Liquid swine manure fall & spring applied	3.5%	13.3%	9.9%	9.4%	10.6%	3.6%	11.3%	8.8%	8.8%	35,146	93,454	99,989	105,026	110,132	40,649	120,098	90,948	86,930	Swine manure acres
Phosphorus Application Practices:	2017	2018	2019	2020	2021	2022	2023	2024	Average	2017	2018	2019	2020	2021	2022	2023	2024	Average	Extrapolated Using
Commercial P incorporated with planter	11.0%	3.8%	1.2%	2.7%	0.6%	0.7%	1.6%	0.9%	2.8%	2,529,464	872,820	275,084	630,389	137,863	159,133	362,482	208,898	647,017	Corn & soy acres
Commercial P applied in knifed bands	2.9%	2.7%	2.7%	2.3%	2.7%	1.1%	4.0%	6.6%	3.1%	666,859	620,161	618,940	536,998	620,385	250,066	906,206	1,531,917	718,941	Corn & soy acres
Commercial P broadcast & incorporated in 1 week	47.0%	70.3%	69.1%	40.4%	43.2%	37.9%	31.4%	31.6%	46.4%	10,807,710	16,147,166	15,840,270	9,432,484	9,926,155	8,615,897	7,113,713	7,334,631	10,652,253	Corn & soy acres
Liquid P (commercial/manure) injected	1.8%	3.8%	8.9%	7.8%	5.0%	6.8%	5.6%	1.8%	5.2%	413,912	872,820	2,040,208	1,821,123	1,148,861	1,545,860	1,268,688	417,795	1,191,158	Corn & soy acres
Other P application type (unincorporated)	37.4%	19.5%	18.1%	46.0%	48.4%	53.5%	57.4%	59.2%	42.4%	8,600,178	4,478,943	4,149,188	10,739,957	11,120,970	12,162,282	13,004,049	13,740,827	9,749,549	Corn & soy acres
Variable rate applied	NA	NA	49.6%	45.7%	57.0%	52.8%	61.5%	58.3%	54.2%	NA	NA	11,370,150	10,669,914	13,097,010	12,003,149	13,932,910	13,531,930	12,434,177	Corn & soy acres
Soil testing for P	81.2%	72.1%	85.5%	80.6%	81.2%	79.6%	82.2%	77.1%	79.9%	18,672,044	16,560,606	19,599,755	18,818,273	18,657,495	18,095,657	18,622,523	17,895,571	18,365,241	Corn & soy acres
P application when at or below optimum levels	74.3%	94.4%	94.3%	99.1%	98.2%	95.4%	91.0%	94.9%	92.7%	13,873,329	15,633,212	18,482,569	18,648,908	18,321,660	17,263,256	16,946,496	16,982,897	17,019,041	Soil test phosphorus acres

Soil Test P Levls	2022	2023	2024	Average
Average Bray-P1 (ppm)	31.2	34.4	33.7	33.1
Average Olsen (ppm)		20.9	28.8	24.9
Average Melich-3 (ppm)	36.1	34.1	41.9	37.4

Tillage Practices:	2017	2018	2019	2020	2021	2022	2023	2024	Average	2017	2018	2019	2020	2021	2022	2023	2024	Average	Extrapolated Using
Conservation tillage before corn	56.3%	52.3%	46.5%	23.0%	25.4%	29.7%	23.3%	22.9%	34.9%	7,438,870	6,805,748	6,341,092	3,171,203	3,260,594	3,768,005	2,983,573	2,995,832	4,595,615	Corn acres
No-till before corn	26.4%	22.2%	29.4%	29.5%	31.6%	29.6%	32.7%	29.1%	28.8%	3,488,209	2,888,710	4,012,658	4,069,172	4,053,296	3,755,318	4,187,246	3,806,930	3,782,693	Corn acres
Conventional tillage before corn	NA	25.4%	24.1%	47.5%	43.0%	40.6%	44.0%	48.0%	38.9%	NA	3,305,101	3,289,288	6,552,057	5,515,561	5,150,876	5,634,215	6,279,472	5,103,796	Corn acres
Conservation tillage before soy	42.6%	34.6%	33.8%	18.5%	19.6%	27.7%	22.1%	16.0%	26.9%	4,167,224	3,445,030	3,135,015	1,767,477	1,989,464	2,782,839	2,176,873	1,620,580	2,635,563	Soy acres
No-till before soy	43.2%	41.0%	44.6%	47.3%	53.3%	46.9%	49.7%	55.3%	47.7%	4,225,917	4,082,261	4,136,736	4,519,008	5,410,123	4,711,739	4,895,502	5,601,129	4,697,802	Soy acres
Conventional tillage before soy	NA	24.4%	21.6%	34.2%	27.1%	25.5%	28.3%	28.7%	27.1%	NA	2,429,443	2,003,442	3,267,443	2,750,738	2,561,820	2,787,579	2,906,915	2,672,483	Soy acres
Combined corn & soy conservation tillage acreage	50.5%	44.6%	41.3%	21.2%	22.8%	28.8%	22.8%	19.9%	31.5%	11,606,094	10,250,778	9,476,107	4,938,679	5,250,058	6,550,844	5,160,446	4,616,411	7,231,177	Corn & soy conservation tillage acres
Combined corn & soy no-till acreage	33.5%	30.3%	35.6%	36.8%	41.2%	37.2%	40.1%	40.5%	36.9%	7,714,126	6,970,971	8,149,394	8,588,180	9,463,419	8,467,057	9,082,748	9,408,059	8,480,494	Corn & soy no-till acres
Combined corn & soy conventional tillage acreage	NA	25.0%	23.1%	42.1%	35.9%	33.9%	37.2%	39.6%	33.8%	NA	5,734,544	5,292,729	9,819,501	8,266,299	7,712,695	8,421,794	9,186,387	7,776,279	Corn & soy conventional tillage acres

2017-2024 Crop Year Survey Data: Corn & Soy Acres

This part of the survey starts with statewide corn and soybean acre data from USDA. These numbers form the foundation for the rest of INREC's analysis because they help paint a picture of what's happening across Iowa farmland.

Acre trends matter because they drive almost everything else: fertility needs, crop rotations, cover crop opportunities, and conservation impact. When corn or soybean acres shift, it is usually due to a mix of factors such as crop prices, input costs, weather, or global markets. For example, a wet spring might push more acres into soybeans, while strong corn prices could pull them back the following year.

Changes in total acres also affect how we interpret conservation practice adoption. Tracking acre trends alongside management practices gives a clearer sense of what is really happening on the ground

Corn & Soy Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Corn acres (CDL)	13,212,913	13,012,207	13,648,497	13,793,805	12,826,886	12,686,886	12,805,034	13,082,234	13,133,558
Soy acres (CDL)	9,782,215	9,956,734	9,275,193	9,553,928	10,150,325	10,046,351	9,850,104	10,128,623	9,842,934
Corn & soy acres total (CDL)	22,995,128	22,968,941	22,923,690	23,347,733	22,977,211	22,733,237	22,655,138	23,210,857	22,976,492

CDL = USDA Cropland Data Layer

Out of the 600+ agricultural retailers in Iowa, 150 retail locations are selected at random and stratified across eight major land resource areas based on the percentage of row crops each year. About 1,000 of the potential 1,500 surveys are completed, ensuring oversampling of Iowa State University's target of 500 surveys for statistical significance. INREC aggregates the data to ensure confidentiality, and the Iowa State University Center of Survey Statistics Methodology extrapolates the data for statewide adoption. Iowa State University models nutrient load reduction based on performances documented in the NRS science assessment.

2017-2024 Crop Year Survey Data: Commercial Only Nitrogen Rates

When we look at commercial-only nitrogen rates, we're talking about fertilizer that comes strictly from commercial sources—no manure inputs. Since 2017, those rates have stayed fairly steady. That tells us farmers are applying what the crop needs, not more, not less. It also shows a good balance between increasing yields and protecting water quality.

Commercial Only Nitrogen Rates (lb/ac)	2017	2018	2019	2020	2021	2022	2023	2024	Average
Average N rate on corn in rotation	170.0	172.3	177.5	183.4	170.9	173.4	166.6	179.2	174.2
Average N rate on continuous corn	200.4	201.9	200.4	208.9	199.9	192.6	185.7	205.0	199.4

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2017-2024 Crop Year Survey Data: Crop Rotation

This section highlights how farmers are rotating crops, whether it is the standard corn-soybean rotation or longer cycles that include small grains, hay or forage.

Healthy rotations help break pest and disease cycles, improve soil structure and spread out weather and market risks. Rotation decisions depend on several factors, including weather, yield expectations, input costs and available markets.

Crop Rotation	2022	2023	2024	Average
Continuous Corn	10.6%	12.7%	11.6%	11.6%
Corn-Soy	85.3%	84.6%	81.7%	83.9%
Extended Rotation	2.0%	1.4%	3.3%	2.2%
Corn-Small Grain-Soy	0.2%	0.1%	0.3%	0.2%
Other	1.9%	1.2%	3.1%	2.1%

*** Years without data reflect how survey questions evolve with the NRS science assessment as practices are added or refined.*

Out of the 600+ agricultural retailers in Iowa, 150 retail locations are selected at random and stratified across eight major land resource areas based on the percentage of row crops each year. About 1,000 of the potential 1,500 surveys are completed, ensuring oversampling of Iowa State University's target of 500 surveys for statistical significance. INREC aggregates the data to ensure confidentiality, and the Iowa State University Center of Survey Statistics Methodology extrapolates the data for statewide adoption. Iowa State University models nutrient load reduction based on performances documented in the NRS science assessment.

2017-2024 Crop Year Survey Data: Cover Crop Practices

Here you will find data on how many acres are planted with cover crops, the percentage of total acres that represents and how adoption has changed over time. Cover crops protect soil from erosion, hold nutrients such as nitrogen and build organic matter. They are one of the few practices that reduce both nitrogen and phosphorus loss. These benefits align with the goals of the Iowa Nutrient Reduction Strategy.

Research from Iowa State University shows that rye cover crops can reduce nitrate losses by around 30% compared to no cover crop in a corn-soybean rotation. Adoption usually grows gradually rather than all at once. Costs, weather and timing all play a role. A late fall or wet spring can make planting or terminating cover crops difficult. For some farmers, the uncertainty of short-term results also slows adoption.

Cover Crop Practices | Percentages	2017	2018	2019	2020	2021	2022	2023	2024	Average
Cover crop planted	6.9%	8.8%	9.5%	13.3%	12.1%	16.6%	17.0%	16.7%	12.6%
Rye cover crop	69.4%	82.8%	81.3%	90.9%	80.8%	81.8%	86.6%	89.6%	82.9%
Oat cover crop	9.1%	9.8%	2.8%	1.30%	5.50%	4.4%	6.1%	4.3%	5.4%
Species mix	NA	NA	11.20%	6.7%	12.30%	8.5%	5.5%	5.5%	8.3%
Other cover crop	21.5%	7.4%	4.80%	1.10%	1.5%	5.3%	1.7%	0.6%	5.5%

Cover Crop Practices | Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Cover crop planted	1,586,664	2,021,267	2,177,751	3,105,248	2,780,243	3,773,717	3,851,373	3,876,213	2,896,560
Rye cover crop	1,101,145	1,673,609	1,770,511	2,822,671	2,246,436	3,086,901	3,335,289	3,473,087	2,438,706
Oat cover crop	100,204	164,014	49,574	36,695	123,554	135,824	203,453	149,343	120,332
Species mix	NA	NA	243,908	208,052	341,970	320,766	211,826	213,192	256,619
Other cover crop	341,133	149,574	104,532	34,158	41,704	207,083	65,473	23,257	120,864

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2017-2024 Crop Year Survey Data: Commercial Nitrogen Application Practices

Here, we are looking at how nitrogen from commercial fertilizer is being applied, how timing and methods are changing and how those adjustments tie into nutrient-loss goals. Managing nitrogen is a key part of the Nutrient Reduction Strategy since excess nitrogen contributes to water quality challenges. The "4Rs" approach (right rate, right source, right time, right place) guides this effort.

Survey data shows nitrogen rates holding steady, which suggests farmers are applying responsibly and following best practices. Even small year-to-year changes can point to larger factors, such as fertilizer price swings, yield expectations, soil nitrogen levels, or weather challenges like wet or dry springs. Nitrification inhibitor adoption is strong, protecting fall applied nitrogen from loss. Timing can vary with weather and fertilizer prices but spring is the most widely used application time with a variety of combinations of fall, spring, and in-season timing used.

Commercial Nitrogen Application Practices | Percentages	2017	2018	2019	2020	2021	2022	2023	2024	Average
Fall anhydrous ammonia applied	38.9%	24.1%	23.5%	28.9%	43.1%	50.3%	49.5%	42.0%	37.5%
EPA labeled inhibitor with fall anhydrous ammonia							63.1%	62.0%	62.6%
Nitrapyrin inhibitor with fall anhydrous ammonia	72.6%	73.9%	84.8%	83.8%	86.0%	64.7%			77.6%
Fall only	NA	NA	14.0%	17.4%	22.4%	27.8%	34.7%	23.9%	23.4%
Spring pre-plant only	42.1%	56.3%	50.9%	46.7%	40.3%	33.8%	36.5%	41.9%	43.6%
Spring pre-plant & in-season	9.9%	15.4%	16.9%	13.8%	13.2%	14.5%	10.5%	12.3%	13.3%
In-season only	2.1%	1.1%	1.1%	3.8%	1.7%	1.0%	2.5%	1.8%	1.9%
Fall & spring pre-plant	NA	NA	11.6%	9.7%	14.3%	14.4%	10.2%	10.7%	11.8%
Fall & in-season	NA	NA	3.2%	5.4%	4.7%	6.1%	3.7%	8.0%	5.2%
Fall & spring & in-season	NA	NA	2.3%	3.2%	3.4%	2.3%	2.0%	1.4%	2.4%
Variable rate applied	NA	NA	8.7%	10.1%	16.1%	9.8%	15.2%	12.2%	12.0%

Commercial Nitrogen Application Practices | Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Fall anhydrous ammonia applied	5,139,823	3,135,942	3,207,397	3,986,410	5,528,388	6,381,504	6,338,492	5,494,538	4,901,562
EPA labeled inhibitor with fall anhydrous ammonia							3,999,588	3,406,614	3,703,101
Nitrapyrin inhibitor with fall anhydrous ammonia	3,731,512	2,317,461	2,719,872	3,340,611	4,754,414	4,128,833			3,498,784
Fall only	NA	NA	1,910,790	2,400,122	2,873,222	3,526,954	4,443,347	3,126,654	3,046,848
Spring pre-plant only	5,562,636	7,325,873	6,947,085	6,441,707	5,169,235	4,288,167	4,673,837	5,481,456	5,736,250
Spring pre-plant & in-season	1,308,078	2,003,880	2,306,596	1,903,545	1,693,149	1,839,598	1,344,529	1,609,115	1,751,061
In-season only	277,471	143,134	150,133	524,165	219,340	126,869	320,126	235,480	249,590
Fall & spring pre-plant	NA	NA	1,583,226	1,337,999	1,834,245	1,826,912	1,306,113	1,399,799	1,548,049
Fall & in-season	NA	NA	436,752	744,865	602,864	773,900	473,786	1,046,579	679,791
Fall & spring & in-season	NA	NA	313,915	441,402	436,114	291,798	256,101	183,151	320,414
Variable rate applied	NA	NA	1,187,419	1,393,174	2,065,129	1,243,315	1,946,365	1,596,033	1,571,906

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2017-2024 Crop Year Survey Data: Manure Practices

These numbers reflect how manure is being used, including how many acres receive it, what types are applied and when applications occur. Manure remains a key nutrient source for Iowa farmers, providing nitrogen, phosphorus and organic matter that feed the soil.

Fall application is still the most common, although spring application is slowly increasing as farmers look to better match nutrient release with crop needs. While Iowa is a large producer of livestock, approximately 80% of the corn acres receive no manure.

Manure Practices | Percentages	2017	2018	2019	2020	2021	2022	2023	2024	Average
No manure used	81.5%	81.4%	80.8%	82.0%	79.7%	78.8%	76.5%	77.5%	79.8%
Beef manure used	6.8%	10.3%	8.8%	6.3%	9.5%	9.0%	11.8%	10.2%	9.1%
Beef & liquid swine manure used	0.0%	0.0%	0.3%	0.1%	0.1%	0.2%	0.4%	0.1%	0.2%
Liquid swine manure used	7.6%	5.4%	7.4%	8.1%	8.1%	8.9%	8.3%	7.9%	7.7%
Poultry manure used	1.6%	1.7%	1.9%	1.2%	1.6%	1.4%	1.7%	0.9%	1.5%
Dairy manure used	2.5%	1.1%	0.8%	2.1%	1.1%	1.7%	1.5%	3.3%	1.8%
Liquid swine manure fall applied	94.7%	84.2%	78.5%	87.3%	82.4%	91.8%	83.1%	91.2%	86.7%
Liquid swine manure spring applied	1.8%	2.5%	11.7%	3.4%	7.0%	4.7%	5.6%	0.0%	4.6%
Liquid swine manure fall & spring applied	3.5%	13.3%	9.9%	9.4%	10.6%	3.6%	11.3%	8.8%	8.8%

Manure Practices | Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
No manure used	10,768,524	10,591,936	11,027,986	11,310,920	10,223,028	9,997,266	9,795,851	10,138,731	10,481,780
Beef manure used	898,478	1,340,257	1,201,068	869,010	1,218,554	1,141,820	1,510,994	1,334,388	1,189,321
Beef & liquid swine manure used	0	0	40,945	13,794	12,827	25,374	51,220	13,082	19,655
Liquid swine manure used	1,004,181	702,659	1,009,989	1,117,298	1,038,978	1,129,133	1,062,818	1,033,496	1,012,319
Poultry manure used	211,407	221,208	259,321	165,526	205,230	177,616	217,686	117,740	196,967
Dairy manure used	330,323	143,134	109,188	289,670	141,096	215,677	192,076	431,714	231,610
Liquid swine manure fall applied	950,960	591,639	792,841	975,401	856,118	1,036,544	883,202	942,549	878,657
Liquid swine manure spring applied	18,075	17,566	118,169	37,988	72,728	53,069	59,518	0	47,139
Liquid swine manure fall & spring applied	35,146	93,454	99,989	105,026	110,132	40,649	120,098	90,948	86,930

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2017-2024 Crop Year Survey Data: Phosphorus Application Practices

When we look at this category, we see the methods of application, the use of soil testing and how practices have evolved over time.

Targeted applications, such as commercial phosphorus incorporated with the planter, knifed bands or liquid injection, are less common but show modest adoption, with variability by year and field conditions. Some type of incorporation is the best practice to reduce soil erosion and phosphorus loss. Soil testing remains central to phosphorus management, with nearly 80% of fields tested for phosphorus, and most applications occurring when soil-test levels are at or below optimum, ensuring efficient use of nutrients and minimizing environmental impact.

Phosphorus Application Practices | Percentage	2017	2018	2019	2020	2021	2022	2023	2024	Average
Commercial P incorporated with planter	11.0%	3.8%	1.2%	2.7%	0.6%	0.7%	1.6%	0.9%	2.8%
Commercial P applied in knifed bands	2.9%	2.7%	2.7%	2.3%	2.7%	1.1%	4.0%	6.6%	3.1%
Commercial P broadcast & incorporated in 1 week	47.0%	70.3%	69.1%	40.4%	43.2%	37.9%	31.4%	31.6%	46.4%
Liquid P (commercial/manure) injected	1.8%	3.8%	8.9%	7.8%	5.0%	6.8%	5.6%	1.8%	5.2%
Other P application type (unincorporated)	37.4%	19.5%	18.1%	46.0%	48.4%	53.5%	57.4%	59.2%	42.4%
Variable rate applied	NA	NA	49.6%	45.7%	57.0%	52.8%	61.5%	58.3%	54.2%
Soil testing for P	81.2%	72.1%	85.5%	80.6%	81.2%	79.6%	82.2%	77.1%	79.9%
P application when at or below optimum levels	74.3%	94.4%	94.3%	99.1%	98.2%	95.4%	91.0%	94.9%	92.7%

Phosphorus Application Practices | Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Commercial P incorporated with planter	2,529,464	872,820	275,084	630,389	137,863	159,133	362,482	208,898	647,017
Commercial P applied in knifed bands	666,859	620,161	618,940	536,998	620,385	250,066	906,206	1,531,917	718,941
Commercial P broadcast & incorporated in 1 week	10,807,710	16,147,166	15,840,270	9,432,484	9,926,155	8,615,897	7,113,713	7,334,631	10,652,253
Liquid P (commercial/manure) injected	413,912	872,820	2,040,208	1,821,123	1,148,861	1,545,860	1,268,688	417,795	1,191,158
Other P application type (unincorporated)	8,600,178	4,478,943	4,149,188	10,739,957	11,120,970	12,162,282	13,004,049	13,740,827	9,749,549
Variable rate applied	NA	NA	11,370,150	10,669,914	13,097,010	12,003,149	13,932,910	13,531,930	12,434,177
Soil testing for P	18,672,044	16,560,606	19,599,755	18,818,273	18,657,495	18,095,657	18,622,523	17,895,571	18,365,241
P application when at or below optimum levels	13,873,329	15,633,212	18,482,569	18,648,908	18,321,660	17,263,256	16,946,496	16,982,897	17,019,041

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2017-2024 Crop Year Survey Data: Soil Test P Levels

This section shows the statewide average of soil test phosphorus levels across the three most common soil testing methods. Monitoring soil-test phosphorus helps ensure fertilizer is applied only where needed, supporting both yield and environmental goals.

Soil Test P Levels	2022	2023	2024	Average
Average Bray-P1 (ppm)	31.2	34.4	33.7	33.1
Average Olsen (ppm)		20.9	28.8	24.9
Average Melich-3 (ppm)	36.1	34.1	41.9	37.4

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2017-2024 Crop Year Survey Data: Tillage Practices

This section breaks down the tillage methods used before corn and soybeans and how those patterns have shifted over time. Reducing tillage leaves more crop residue to protect the soil from erosion, which reduces phosphorus loss.

Conservation tillage and no-till continue to play major roles in Iowa cropping systems. No-till is especially common before soybeans, while conservation tillage remains a popular choice before corn. Overall, the trend continues toward less intensive tillage as farmers look to improve soil health, protect water quality and support long-term productivity.

Tillage Practices | Percentage	2017	2018	2019	2020	2021	2022	2023	2024	Average
Conservation tillage before corn	56.3%	52.3%	46.5%	23.0%	25.4%	29.7%	23.3%	22.9%	34.9%
No-till before corn	26.4%	22.2%	29.4%	29.5%	31.6%	29.6%	32.7%	29.1%	28.8%
Conventional tillage before corn	NA	25.4%	24.1%	47.5%	43.0%	40.6%	44.0%	48.0%	38.9%
Conservation tillage before soy	42.6%	34.6%	33.8%	18.5%	19.6%	27.7%	22.1%	16.0%	26.9%
No-till before soy	43.2%	41.0%	44.6%	47.3%	53.3%	46.9%	49.7%	55.3%	47.7%
Conventional tillage before soy	NA	24.4%	21.6%	34.2%	27.1%	25.5%	28.3%	28.70%	27.1%
Combined corn & soy conservation tillage acreage	50.5%	44.6%	41.3%	21.2%	22.8%	28.8%	22.8%	19.9%	31.5%
Combined corn & soy no-till acreage	33.5%	30.3%	35.6%	36.8%	41.2%	37.2%	40.1%	40.5%	36.9%
Combined corn & soy conventional tillage acreage	NA	25.0%	23.1%	42.1%	35.9%	33.9%	37.2%	39.6%	33.8%

Tillage Practices | Acres	2017	2018	2019	2020	2021	2022	2023	2024	Average
Conservation tillage before corn	7,438,870	6,805,748	6,341,092	3,171,203	3,260,594	3,768,005	2,983,573	2,995,832	4,595,615
No-till before corn	3,488,209	2,888,710	4,012,658	4,069,172	4,053,296	3,755,318	4,187,246	3,806,930	3,782,693
Conventional tillage before corn	NA	3,305,101	3,289,288	6,552,057	5,515,561	5,150,876	5,634,215	6,279,472	5,103,796
Conservation tillage before soy	4,167,224	3,445,030	3,135,015	1,767,477	1,989,464	2,782,839	2,176,873	1,620,580	2,635,563
No-till before soy	4,225,917	4,082,261	4,136,736	4,519,008	5,410,123	4,711,739	4,895,502	5,601,129	4,697,802
Conventional tillage before soy	NA	2,429,443	2,003,442	3,267,443	2,750,738	2,561,820	2,787,579	2,906,915	2,672,483
Combined corn & soy conservation tillage acreage	11,606,094	10,250,778	9,476,107	4,938,679	5,250,058	6,550,844	5,160,446	4,616,411	7,231,177
Combined corn & soy no-till acreage	7,714,126	6,970,971	8,149,394	8,588,180	9,463,419	8,467,057	9,082,748	9,408,059	8,480,494
Combined corn & soy conventional tillage acreage	NA	5,734,544	5,292,729	9,819,501	8,266,299	7,712,695	8,421,794	9,186,387	7,776,279

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