

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%

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 Percentage	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%	1.3%	5.5%	4.4%	6.1%	4.3%	5.4%
Species mix	NA	NA	11.2%	6.7%	12.3%	8.5%	5.5%	5.5%	8.3%
Other cover crop	21.5%	7.4%	4.8%	1.1%	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	1,597,614	2,015,688	2,180,043	3,107,063	2,768,754	3,773,717	3,841,525	3,873,663	2,894,759
Rye cover crop	1,108,954	1,669,641	1,771,503	2,823,418	2,236,599	3,086,901	3,327,999	3,469,663	2,436,835
Oat cover crop	144,610	197,070	61,041	41,452	151,174	166,044	234,047	166,820	145,282
Species mix	NA	NA	243,293	207,104	339,449	320,766	213,057	212,479	256,025
Other cover crop	344,051	148,977	104,206	35,089	40,978	200,007	66,422	24,701	120,554

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%	28.7%	27.1%
Combined corn & soy conservation tillage acreage	50.5%	44.6%	41.3%	21.1%	22.9%	28.8%	22.7%	19.9%	31.5%
Combined corn & soy no-till acreage	0.335	30.4%	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	7,441,970	6,805,748	6,341,092	3,171,203	3,260,594	3,768,005	2,977,177	2,995,644	4,823,684
No-till before corn	3,486,345	2,890,908	4,018,117	4,071,389	4,052,013	3,755,318	4,188,876	3,805,549	3,780,424
Conventional tillage before corn	NA	3,299,680	3,289,288	6,551,214	5,512,867	5,150,876	5,638,982	6,281,041	4,907,151
Conservation tillage before soy	4,169,316	3,441,481	3,134,088	1,764,290	1,993,219	2,782,839	2,173,803	1,623,454	2,779,862
No-till before soy	4,221,350	4,081,526	4,134,881	4,517,853	5,409,108	4,711,739	4,892,801	5,602,069	4,567,037
Conventional tillage before soy	NA	2,433,727	2,006,224	3,271,784	2,746,678	2,561,820	2,783,500	2,903,099	2,633,956
Combined corn & soy conservation tillage acreage	11,611,287	10,247,229	9,475,179	4,935,493	5,253,814	6,550,844	5,150,980	4,619,099	7,603,547
Combined corn & soy no-till acreage	7,707,695	6,972,434	8,152,999	8,589,242	9,461,121	8,467,057	9,081,676	9,407,618	8,347,461
Combined corn & soy conventional tillage acreage	NA	5,733,407	5,295,512	9,822,998	8,259,545	7,712,695	8,422,482	9,184,140	7,541,107

Data Notes:

* These numbers are extrapolated using USDA's corn and soybean acre numbers across Iowa.

** 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.