

MN Extension N Recommendations 2022

2020

2022

UNIVERSITY OF MINNESOTA
EXTENSION

NUTRIENT MANAGEMENT

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Fertilizing Corn in Minnesota

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NUTRIENT MANAGEMENT | CORN (COR) | REVISED 2022

Fertilizing Corn in Minnesota

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Table 1. Guidelines for use of nitrogen fertilizer for corn grown following corn or soybean when supplemental irrigation is not used.

N price/Crop value ratio	Corn/Corn		Soybean/Corn	
	MRTN	Acceptable range	MRTN	Acceptable range
	----- lbs N/acre -----			
0.05	195	175 to 210	150	140 to 165
0.10	165	152 to 180	130	120 to 145
0.15	150	140 to 160	115	105 to 125
0.20	145	135 to 155	105	95 to 115

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Table COR-1. Guidelines for use of nitrogen fertilizer for corn grown following corn or soybean when supplemental irrigation is not used

Prior crop	N price/Crop value ratio	MRTN	Acceptable range	Prior crop	N price/Crop value ratio	MRTN	Acceptable range
Corn	0.075	190 lbs N/acre	170-205 lbs N/acre	Soybeans	0.075	150 lbs N/acre	135-165 lbs N/acre
Corn	0.100	175	155-180	Soybeans	0.100	140	130-150
Corn	0.125	165	150-175	Soybeans	0.125	135	125-145
Corn	0.150	155	135-155	Soybeans	0.150	130	120-140

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Table 7. Nitrogen suggestions for corn when manure is used as a fertilizer source

Crop grown prior to corn	Crop 2 years prior to corn	Suggested PAN to apply lb N/acre
Corn		195
Corn	Alfalfa (1 yr old stand)	120
Corn	Alfalfa (≥ 2 yr old stand)	80
Soybean		150
Alfalfa (1 yr old stand)		80
Alfalfa (≥ 2 yr old stand)		40

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Table COR-7. Nitrogen suggestions for corn when manure is used as a fertilizer source

Crop grown prior to corn	Crop 2 years prior to corn	Suggested PAN to apply
Com	—	195 lbs N/acre
Com	Alfalfa (1 yr. old stand)	120
Com	Alfalfa (>2 yr. old stand)	80
Soybean	—	150
Alfalfa (1 yr old stand)	—	80
Alfalfa (>2 yr old stand)	—	40

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Table 4. Nitrogen suggestions for first- and second-year corn following alfalfa.^a

Soil texture ^b	Irrigated or non-irrigated	Alfalfa stand age ^c	Alfalfa termination time	First-year corn following alfalfa lbs N/acre	Second-year corn following alfalfa lbs N/acre
Coarse	Irrigated	1	Fall or spring	140-170	140-170 ^d
Coarse	Irrigated	2 or more	Fall or spring	70-150	70-150
Coarse	Non-irrigated	1	Fall or spring	40-80 ^d	80-120 ^d
Coarse	Non-irrigated	2 or more	Fall or spring	0-20	0-80
Medium	Both	1	Fall or spring	40-80 ^d	80-120 ^d
Medium	Both	2 or more	Fall	0-20	0-80
Medium	Both	2 or more	Spring	0-40	0-80
Fine	Both	1	Fall or spring	40-80 ^d	80-120 ^d
Fine	Both	2 or more	Fall	0-20 ^d	0-80 ^d
Fine	Both	2 or more	Spring	0-40 ^d	0-80 ^d

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Table COR-4. Nitrogen suggestions for first- and second-year corn following alfalfa^a

Soil texture ^b	Irrigated or non-irrigated	Alfalfa stand age ^c	Alfalfa termination time	First-year corn following alfalfa	Second-year corn following alfalfa
Coarse	Irrigated	1 year	Fall or spring	140-170 lbs N/acre	140-170 ^d lbs N/acre
Coarse	Irrigated	2 or more years	Fall or spring	70-150	70-150
Coarse	Non-irrigated	1 year	Fall or spring	40-80 ^d	80-120 ^d
Coarse	Non-irrigated	2 or more years	Fall or spring	0-20	0-80
Medium	Both	1 year	Fall or spring	40-80 ^d	80-120 ^d
Medium	Both	2 or more years	Fall	0-20	0-80
Medium	Both	2 or more years	Spring	0-40	0-80
Fine	Both	1 year	Fall or spring	40-80 ^d	80-120 ^d
Fine	Both	2 or more years	Fall	0-20 ^d	0-80 ^d
Fine	Both	2 or more years	Spring	0-40 ^d	0-80 ^d

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Table 2. Guidelines for use of N fertilizer for corn following corn when grown on irrigated sandy soils.

N price/Crop value ratio	MRTN	Acceptable range
	----- lbs N/acre -----	
0.05	235	210 to 255
0.10	210	190 to 225
0.15	190	175 to 210
0.20	180	165 to 190

Table 3. Nitrogen guidelines for corn grown on non-irrigated loamy fine sands with less than 3% organic matter.

N price/Crop value ratio	Corn/Corn	Corn/Soybean
	----- lbs N/acre -----	
0.05	100	70
0.10	90	60
0.15	80	50
0.20	70	40

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Table COR-2. Guidelines for use of N fertilizer for corn following corn when grown on irrigated sandy soils

N price/Crop value ratio	MRTN	Acceptable range
0.05	235 lbs N/acre	210-255 lbs N/acre
0.10	210	190-225
0.15	190	175-210
0.20	180	165-190

Table COR-3. Nitrogen guidelines for corn grown on non-irrigated loamy fine sands with less than 3% organic matter

N price/Crop value ratio	Corn/Corn	Corn/Soybean
0.05	100 lbs N/acre	70 lbs N/acre
0.10	90	60
0.15	80	50
0.20	70	40