

Estimating Corn Yield before Harvest

Predicting corn yield before harvest is popular with growers, but these estimates can be misleading. It is important to be careful when calculating estimated yields. You must determine the number of ears in 1/1,000 of an acre, average kernels per row, average rows per ear, and average value for seed weight based on the growing conditions.

Counting Harvestable Ears

Yield estimate accuracy increases with more sites tested.

Yield estimates should be determined from at least five—and preferably ten—sites within a field. Field data collection is based on a 1/1,000-acre area. Table 1 gives row length needed to equal a 1/1,000-acre area for popular corn row widths. It is likely that actual yield will be 10 percent higher or lower than the estimated yield because of variation in plant uniformity, health, and height, and soil moisture levels in a field.

Table 1. Row width and length needed to equal 1/1,000 of an acre.

Row width (inches)	Row length (to equal 1/1,000 acre)
30	17 ft 5 in
36	14 ft 6 in
38	13 ft 10 in
40	13 ft 1 in

Yield Estimate Equation

- ▶ Step 1. Count the number of harvestable ears in the length of row equivalent to 1/1,000 of an acre. For 30-inch rows, this will equal 17 feet 5 inches.
- ▶ Step 2. Count the number of kernel rows and kernels per row on every fifth ear, and determine an average for each yield component. Do not count small kernels located on the butt or ear tip. If variability in crop development exists within a given field, increase the sample size for better yield estimates.
- ▶ Step 3. To determine the yield, transfer the values from steps 1 and 2, rounded to the nearest number, to Table 2, 3, or 4 depending on the current year's growing conditions.

Example

30 ears in 1/1,000 of an acre

14 kernel rows per ear

30 kernels per row

In a good irrigated corn field with no stress from pollination to physiological maturity, use Table 2 to find the yield estimate is 164 bushels per acre. If your growing conditions were evaluated as extreme stress in dryland corn from pollination to physiological maturity, use Table 4 to find the yield estimate is 113 bushels per acre.

Table 2. Yield estimates for irrigated corn with no stress from pollination to physiological maturity.

Ears per 1/1,000 acre	Average rows/ear = 12					Average rows/ear = 14					Average rows/ear = 16					Average rows/ear = 18				
	Kernels/row					Kernels/row					Kernels/row					Kernels/row				
	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45
	Bushel/acre					Bushel/acre					Bushel/acre					Bushel/acre				
27	105	126	147	168	190	123	147	172	196	221	140	168	196	225	253	158	190	221	253	284
28	109	131	153	175	196	127	153	178	204	229	146	175	204	233	262	164	196	229	262	295
29	113	136	158	181	204	132	158	185	211	238	151	181	211	241	271	170	204	238	271	305
30	117	140	164	187	211	136	164	191	218	246	156	187	218	250	281	176	211	246	281	316
31	121	145	169	193	218	141	169	197	226	254	161	193	226	258	290	181	218	254	290	326
32	125	150	174	200	225	146	175	204	233	262	166	200	233	266	300	187	225	262	300	337
33	129	154	180	206	232	150	180	210	240	270	172	206	240	274	309	193	232	270	309	347
34	133	159	186	212	239	155	186	216	248	278	177	212	248	283	318	199	239	278	318	358
35	136	164	191	218	246	159	191	223	255	287	182	218	255	291	328	205	246	287	328	368

Table 3. Yield estimates for average growing conditions from pollination to physiological maturity.

Ears per 1/1,000 acre	Average rows/ear = 12					Average rows/ear = 14					Average rows/ear = 16					Average rows/ear = 18				
	Kernels/row					Kernels/row					Kernels/row					Kernels/row				
	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45
	Bushel/acre					Bushel/acre					Bushel/acre					Bushel/acre				
27	90	108	126	145	163	105	126	148	169	190	120	145	169	193	217	136	163	190	217	244
28	94	112	131	150	169	109	131	153	175	197	125	150	175	200	225	141	169	197	225	253
29	97	116	136	155	175	113	136	158	181	204	129	155	181	207	233	146	175	204	233	262
30	100	120	141	161	181	117	141	164	187	211	134	161	187	214	241	151	181	211	241	271
31	104	124	145	166	187	121	145	170	194	218	138	166	194	221	249	156	187	218	249	280
32	107	128	150	171	193	125	150	175	200	225	143	171	200	228	257	161	193	225	257	289
33	110	132	155	177	199	129	155	180	206	232	147	177	206	236	265	166	199	232	265	298
34	114	136	159	182	205	133	159	186	212	239	152	182	212	243	273	171	205	239	273	307
35	117	141	164	187	211	137	164	191	219	246	156	187	219	250	281	176	211	246	281	316

Table 4. Yield estimates for stressed dryland corn from pollination to physiological maturity.

Ears per 1/1,000 acre	Average rows/ear = 12					Average rows/ear = 14					Average rows/ear = 16					Average rows/ear = 18				
	Kernels/row					Kernels/row					Kernels/row					Kernels/row				
	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45	25	30	35	40	45
	Bushel/acre					Bushel/acre					Bushel/acre					Bushel/acre				
27	73	87	102	117	131	85	102	119	136	153	97	117	136	156	175	109	131	153	175	197
28	76	91	106	121	136	88	106	123	141	159	101	121	141	161	181	113	136	159	181	204
29	78	94	110	125	141	91	110	128	146	164	104	125	146	167	188	117	141	164	188	211
30	81	97	113	130	146	94	113	132	151	170	108	130	151	171	194	122	146	170	194	219
31	84	100	117	134	151	98	117	137	156	176	112	134	156	178	201	126	151	176	201	226
32	86	104	121	138	156	101	121	141	161	181	115	138	161	184	207	130	156	181	207	233
33	89	107	125	142	160	104	125	146	166	187	119	142	166	190	214	134	160	187	214	240
34	92	110	128	147	165	107	128	150	171	193	122	147	171	196	220	138	165	193	220	248
35	94	113	132	151	170	110	132	154	176	198	126	151	176	202	227	142	170	198	227	255

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