

How to Assess Corn After a Hail Event

Damage to a corn crop by hail can differ in severity, ranging from mild to total crop loss. Yield loss will be dependent on the stage of crop at the time of the hail event and the level of crop damage. In corn, most yield reduction due to hail damage is a result of leaf loss but can also be from reduced stands.

To determine yield loss due to defoliation, both the growth stage and the percent leaf area removed from the plant must be determined (Table 1). Significant yield damage due to defoliation occurs immediately after silking and decreases as the plant matures. When making this estimate of defoliation, consider both leaf area removed and leaf area still attached to the plant but no longer green. Live green tissue, although damaged, should not be considered as leaf area destroyed. It can also help delaying your assessment seven to 10 days to provide a more accurate picture as it can be difficult to distinguish living from dead tissue immediately after a storm.

Table 1. Estimated Percentage Corn Grain Yield Loss

Due to Defoliation at Various Growth Stages¹

Growth Stage ²	% Leaf Defoliation / % Yield Loss																		
	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100
7 leaf	0	0	0	0	0	0	1	1	2	3	4	4	5	5	6	7	8	9	9
9 leaf	0	0	0	1	1	2	2	3	4	5	6	6	7	7	9	10	11	12	13
11 leaf	0	0	1	1	2	3	5	6	7	8	9	10	11	12	14	16	18	20	22
13 leaf	0	1	1	2	3	4	6	8	10	11	13	15	17	19	22	25	28	31	34
Tassel	3	5	7	9	13	17	21	26	31	36	42	48	55	62	68	75	83	91	100
Silked	3	5	7	9	12	16	20	24	29	34	39	45	51	58	65	72	80	88	97
Silks																			
brown	2	4	6	8	11	15	18	22	27	31	36	41	47	54	60	66	74	81	90
Pre-																			
blister	2	3	5	7	10	13	16	20	24	28	32	37	43	49	54	60	66	73	81
Blister	2	3	5	7	10	13	16	19	22	26	30	34	39	45	50	55	60	66	73

Early

milk 2 3 4 6 8 11 14 17 20 24 28 32 36 41 45 50 55 60 66

Milk 1 2 3 5 7 9 12 15 18 21 24 28 32 37 41 45 49 54 59

Late

milk 1 2 3 4 6 8 10 12 15 18 21 24 28 32 35 38 2 46 50

Soft

dough 1 1 2 2 4 6 8 10 12 14 17 20 23 26 29 32 35 38 41

Early

dent 0 0 1 1 2 3 5 7 9 11 13 15 18 21 23 25 27 29 32

Dent 0 0 0 1 2 3 4 6 7 8 10 12 14 15 17 19 20 21 23

Late

dent 0 0 0 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

Nearly

mature 0 0 0 0 0 0 0 0 0 1 2 3 4 5 5 6 6 7 7 8

Mature 0

¹Adapted from the National Crop Insurance Services Corn Loss Instruction (Rev. 1984).

²As determined by counting leaves using the leaf over method (i.e., those with 40% – 50% of leaf exposed from whorl and whose tip points below the horizontal).

After silking, and if the hail event hasn't caused total crop loss, additional assessments are made including determining:

1. yield loss due to stand reduction,
2. yield loss due to defoliation,
3. direct ear damage, and
4. impact of bruising and stalk damage.

Remember that estimating yield loss due to hail is only an estimate, particularly if the damage is not severe and depending upon growth stage of the plant when the hail event occurred. The remainder of the growing season will help determine final yields. Please contact your hail insurance provider for their procedures in assessing hail damage as they may be different than what has been provided here.

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