

# MB Sunflower Crop Report



*"Despite the excessive moisture and sporadic thunderstorms, sunflower staging and maturity remains well ahead of last year."*

Report 12

Monday, August 16, 2010

**Staging**

R-4 to R-7. **Widespread hail damage** (Fig 1) from last week's thunderstorms is a concern for some growers. Crop injury includes severe leaf shredding, stem bruising and damage to the head. Many questions have been received about how this damage will affect yield. Unfortunately, studies have shown that plant stages R-1 through R-6 are the most sensitive to defoliation because the majority of photosynthate being produced is used for head development. Page 2 illustrates the relationship between % leaf loss and approximate leaf loss. Aside from reduced yield potential, bruising to the stem and head increases the risk of lodging (from stem weakening) and disease infection (dead tissue becomes food source for disease spores).

**Insects**

Banded Sunflower Moth trap counts have been decreasing since the end of July. Peak weekly trap counts ranged from 187 to 386. Highest cumulative counts are found in the Southwest at Waskada and Souris.

Following insecticide applications, Lygus bug numbers have decreased. The life cycle of Lygus though, is not complete and following at least two generations per year, feeding by Lygus will continue until hibernation. Sunflower is most susceptible to damage by Lygus from flowering through until seed hardening. Therefore, fields should be monitored throughout the entire flowering period even following an initial insecticide application. Damage is significantly reduced when an infestation occurs after flowering (R-6 to R-7).

**Disease**

Aside from hail damage, **lodging** (Fig. 2) is also being observed in many fields. Multiple components are contributing to increased lodging including high winds, reduced rooting depth and weakened stems from disease and/or insect tunneling. With the good to excess soil moisture in Manitoba since planting, lack of root formation and standability is a concern as we head into maturity. Phoma black stem is generally not of economic concern; *but* stem weevil larvae may be tunneling in the stem and spreading Phoma spores, leading to increased pith degradation and weakened stems. These factors along with severe weather are increasing lodging and stand reduction.

Sunflower rust and Sclerotinia continue to be the two major disease concerns.

**Limiting Factors** Hail Damage and Lodging



**Fig 1.** Severe hail damage. Leaf defoliation and stem bruising.

**Fig 2.** Stem breakage at site of Phoma infection (L) and at ground (R).

**Fig 3.** Blackbirds; a major pest of sunflower crops.



August 2010

**THE RELATIONSHIP BETWEEN LEAF LOSS AND EXPECTED YIELD:**

**The estimated percentage yield loss from leaf loss at the different growth stages:**

Growth stage	Percentage Leaf Loss									
	10	20	30	40	50	60	70	80	90	100
V9	0	1	1	2	2	3	3	5	7	9
V10	0	1	1	2	2	3	3	5	7	9
V11	0	1	1	2	2	3	3	6	12	21
V12	0	1	1	2	2	3	3	6	12	21
V13	1	1	2	2	2	3	4	7	14	25
V14	1	1	2	2	2	3	4	7	14	25
V15	1	1	2	2	3	4	4	8	17	29
V16	1	1	2	2	3	4	4	8	17	29
V17	1	2	2	3	4	4	5	10	20	34
V18	1	2	2	3	4	4	5	10	20	34
V19	1	2	3	4	5	6	9	14	25	40
V20	1	2	3	4	5	6	9	14	25	40
V21	1	2	4	5	7	9	13	19	30	47
V22	1	2	4	5	7	9	13	19	30	47
V23	2	3	5	7	9	12	17	24	35	54
V24	2	3	5	7	9	12	17	24	35	54
V25	2	4	6	8	10	14	19	27	40	63
V26	2	4	6	8	10	14	19	27	40	63
V27	2	4	7	9	12	16	22	31	46	73
V28	2	4	7	9	12	16	22	31	46	73
R1	2	5	8	11	14	18	25	35	52	83
R2	2	6	9	13	18	24	31	42	62	92
R3	3	6	10	15	20	26	33	45	65	94
R4	2	5	9	14	19	25	32	43	63	91
R5	2	4	7	11	16	23	30	40	55	87
R6	1	2	5	8	12	17	23	31	43	62
R7	0	1	3	5	8	12	16	22	30	37
R8	0	0	1	2	4	6	7	9	11	12

**Yield loss vs Leaf loss**

