



## August 2010

|                               |              |
|-------------------------------|--------------|
| July Cooler Than Normal       | 1            |
| Assessing Hail Damage to Corn | 2 - 3        |
| Soybean Tour                  | Insert and 4 |

## July Cooler Than Normal

July received 9.2% less heat units than normal according to the Agrimet data system measured at the Malheur Experiment Station. Right now it appears that if we had an avg. Aug., Sept. and October that we will be twice as far behind as 2005. 2005 was the previous coolest year from 2005-2009.

Crops such as corn may freeze before they mature reducing test weight and yield. Although the conversion of heat units to days in corn is not exact, if you normally grow a 105-day corn hybrid and knew you were going to receive 10% less heat units, then this suggests a 95-day hybrid would mature.

Averaging 2005 to 2009 for the months of April, May, June, and July and summing them you have 1852.8 GDD units. In 2010, the heat units we have received by the end of July is 1344.5 GDD units, or 83.4% (16.6% below normal). This means **if low temperatures continue we are on track for being over 17% below normal and now have less than half of the growing season left.** At 17% below normal an 87 day corn hybrid would mature.

I think it is time to consider what you might do with wet corn with possibly lower than normal test weight. Are you going to let it sit in the field all winter or find some place to dry it? Consider other options such as silage or storing as high moisture corn. Forward contracting etc. will need to be considered and will limit options.

## Ontario Growing Degree Day Units (86°F max & base 50°F from Agrimet Data)

| Year         | March | April | May   | June  | July  | August | Sept.  | Oct.   | Nov.  | GDD from April-Oct. | Percent of Average |
|--------------|-------|-------|-------|-------|-------|--------|--------|--------|-------|---------------------|--------------------|
| 2005         | 125.6 | 193.2 | 341.8 | 446.2 | 692.2 | 684.9  | 434.5  | 214.7  | 5.9   | 3007.5              | 95%                |
| 2006         | 48.4  | 203.5 | 406.4 | 597.3 | 790.9 | 647.3  | 446.4  | 219.0  | 60.1  | 3310.8              | 105%               |
| 2007         | 182.6 | 219.5 | 440.6 | 543.1 | 796.3 | 644.3  | 441.9  | 184.1  | 49.6  | 3269.8              | 103%               |
| 2008         | 38.8  | 144.3 | 389.4 | 512.3 | 712.7 | 665.0  | 452.1  | 227.9  | 35.7  | 3103.7              | 98%                |
| 2009         | 65.7  | 209.0 | 414.6 | 509.2 | 701.5 | 644.3  | 523.0  | 129.9  | 33.9  | 3131.5              | 99%                |
| Average      | 92.2  | 193.9 | 398.6 | 521.6 | 738.7 | 657.2  | 459.6  | 195.1  | 37.0  | 3164.7              | 100%               |
| 2010         | 91.9  | 159.2 | 248.0 | 466.6 | 670.7 | 657.2* | 459.6* | 195.1* | 37.0* | 2856.4*             | 90%*               |
| % Below Avg. | 0.3   | 7.9   | 37.8  | 10.5  | 9.2   |        |        |        |       |                     |                    |

\*Note: To estimate the rest of the 2010 year I used averages from the previous five years for months not completed yet.

For More Information:

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## **Assessing Hail Damage to Corn**

**(From Iowa State University, National Corn Handbook—NH1)**  
**Written by: James V. Vorst, Purdue University**

**Growth stages AFTER tasseling** are identified according to development of the ear shoot and kernels as follows:

- Silked stage: silks have emerged and tassel is shedding pollen.
- Silks brown stage: 75 percent of silks on ear shoot show purple to brown color but are not dry to the touch
- Pre-blister stage: silks all brown but not dry; no fluid in kernels, which look like pimples.
- Blister stage: kernels look like white, water blisters; fluid is colorless.
- Milk stage: roasting ear stage with cob at its maximum length and kernels yellow in color and containing only milky fluid (no solid substance).
- Late milk stage: milky fluid thickening and solids forming in base of kernels.
- Soft dough stage: kernels contain semi-solid substance, but still produce thick milky material when squeezed; kernels near butt end of ear beginning to dent.
- Early dent stage: all kernels beginning to dent and containing thick gummy substances; but many still squirt “milk” when mashed.
- Dent stage: kernels denting or dented and can be cut easily with fingernail.
- Nearly mature stage: kernel hull on opposite side of embryo has shiny appearance
- halfway to cob.
- Mature stage: black layer formed at base of kernels; kernel moisture 35-40 percent.

The first step in assessing yield loss due to defoliation is to estimate percent of leaf area destroyed per plant. In making this estimate, consider both leaf area removed and leaf area still attached to the plant but no longer green. Live green tissue remaining on the plant, even though mutilated should not be considered as leaf area destroyed. Examine plants in each of at least three areas of damaged field to be assured of an accurate estimate

With corn growth stage established, and amount of leaf area loss estimated, use the table on the next page to determine likely yield reduction from defoliation.

### **Determining Direct Ear Damage**

Ear damage due to hail may result from hailstorms occurring late in the season. To determine the extent of crop loss due to ear damage, select ears from 10 consecutive plants and count the number of damaged kernels on all the ears. Next, determine the total number of kernels on all 10 ears, and calculate the percent of total kernels damaged. This figure is the percent of loss due to direct ear damage. If direct ear damage occurs in association with stand reduction, the percent ear damage is adjusted to account for plants lost. This is done by multiplying the percent ear damage times the percent of plants remaining.

### **Bruising and Stalk Damage**

After the corn has reached the 10-leaf stage, stem bruising may occur. To calculate the damage due to bruising, determine the number of totally destroyed plants out of 100 consecutive plants. Cruised plants that do not actually go down should not be counted. Bruising may allow an avenue of infection for stalk rots, which may increase lodging later in the season. Since weather conditions during the remainder of the growing season affect disease severity, it may not be possible to evaluate fields with severe bruising until the end of the season.

### **Estimating Total Yield Loss**

Total corn yield loss from hail damage is estimated by adding the expected yield loss caused by stand reduction, the expected loss caused by defoliation, and expected loss caused by direct ear damage. Remember, however, that this is only an estimate of the percent yield loss. As with undamaged corn, extremely favorable weather during the rest of the growing season can cause actual yields to be higher than expected. Similarly, unfavorable weather can cause greater-than-anticipated reductions.

**Table 3. Estimated Percent Corn Yield Loss Due to Defoliation Occurring at Various Stages of Growth.**

| Stage of Growth | – Percent Leaf Area Destroyed – |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |     |
|-----------------|---------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|-----|
|                 | 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   |
| 8 Leaf          | 0                               | 0  | 0  | 0  | 0  | 1  | 1  | 2  | 3  | 4  | 5  | 5  | 6  | 6  | 7  | 8  | 9  | 10 | 11  |
| 9 Leaf          | 0                               | 0  | 0  | 1  | 1  | 2  | 2  | 3  | 4  | 5  | 6  | 6  | 7  | 7  | 9  | 10 | 11 | 12 | 13  |
| 10 Leaf         | 0                               | 0  | 0  | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 8  | 9  | 9  | 11 | 13 | 14 | 15 | 16  |
| 11 Leaf         | 0                               | 0  | 1  | 1  | 2  | 3  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 14 | 16 | 18 | 20 | 22  |
| 12 Leaf         | 0                               | 0  | 1  | 2  | 3  | 4  | 5  | 7  | 9  | 10 | 11 | 13 | 15 | 16 | 18 | 20 | 23 | 26 | 28  |
| 13 Leaf         | 0                               | 1  | 1  | 2  | 3  | 4  | 6  | 8  | 10 | 11 | 13 | 15 | 17 | 19 | 22 | 25 | 28 | 31 | 34  |
| 14 Leaf         | 0                               | 1  | 2  | 3  | 4  | 6  | 8  | 10 | 13 | 15 | 17 | 20 | 22 | 25 | 28 | 32 | 36 | 40 | 44  |
| 15 Leaf         | 1                               | 1  | 2  | 3  | 5  | 7  | 9  | 12 | 15 | 17 | 20 | 23 | 26 | 30 | 34 | 38 | 42 | 46 | 51  |
| 16 Leaf         | 1                               | 2  | 3  | 4  | 6  | 8  | 11 | 14 | 18 | 20 | 23 | 27 | 31 | 36 | 40 | 44 | 49 | 55 | 61  |
| 17 Leaf         | 2                               | 3  | 4  | 5  | 7  | 9  | 13 | 17 | 21 | 24 | 28 | 32 | 37 | 43 | 48 | 53 | 59 | 65 | 72  |
| 18 Leaf         | 2                               | 3  | 5  | 7  | 9  | 11 | 15 | 19 | 24 | 28 | 33 | 38 | 44 | 50 | 56 | 62 | 69 | 76 | 84  |
| 19–21 Leaf      | 3                               | 4  | 6  | 8  | 11 | 14 | 18 | 22 | 27 | 32 | 38 | 43 | 51 | 57 | 64 | 71 | 79 | 87 | 96  |
| 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 | 42 | 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  | 1  | 2  | 3  | 4  | 5  | 5  | 6  | 6  | 7  | 7  | 8   |
| Mature          | 0                               | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0  | 0   |

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**Growing Treasure in the Valley**  
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## **Growing Treasure in the Valley**

*Malheur  
County*



### **Treasure Valley Soybean Tour on August 24th.**

The Treasure Valley Soybean Tour will begin at 10 AM just north of Willow Creek at the junction of Hwy. 26 and 10th Ave. East. You will get to see soybeans under wheel lines (Jerry Erstrom), furrow (Dave Patchett), and drip irrigation (Skyline Farms). See insert for more information. The soybeans look very good. Over lunch you will get to hear from Jon Sperl from Pendleton Grain Growers (PGG) on contracts with soybeans. Lunch is provided by PGG.

Variety trials at Parma R&E and at Syngenta R&E near Caldwell will also be shown in the afternoon.

Sincerely,

Steve Norberg

August, 2010

**We are on the Web:**  
<http://extension.oregonstate.edu/malheur>

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