

# Late Maturity Corn R5 (Dent) - R6 (Maturity)

## Stage R5

Beginning Dent

Grain Moisture: **50-55%**

**400** GDUs remaining to maturity

Yield loss from killing frost at this stage: **35-40%**



## Stage R5.25

¼ milk line

Grain Moisture: **45-50%**

**300** GDUs remaining to maturity

Yield loss from killing frost at this stage: **25-30%**



## Stage R5.5

½ milk line

Grain Moisture: **40-45%**

**200** GDUs remaining to maturity

Yield loss from killing frost at this stage: **12-15%**



## Stage R5.75

¾ milk line

Grain Moisture: **35-40%**

**100** GDUs remaining to maturity

Yield loss from killing frost at this stage: **5-6%**



**Dent Stage (R5):** Many of us forget how important Dent Stage is to the corn crop. During dent, our day temperatures are usually mid '70's - mid 80's with night temperatures dropping into the 50's. With adequate moisture and these cooler temps, Dent Stage can take 30+ days and the corn crop can really pack on test weight during this time. But if dry weather and high temps occur, Dent Stage can be cut almost in half, and grain fill during this time will suffer. Above are pictures demonstrating the different sub-stages within the Dent Stage and the relative grain moisture expected at that sub-stage. To the right is a chart that breaks down each sub-stage and allows you to see how many days and GDU's are needed to get to each sub-stage.

Growth stages, moisture content, and total dry matter progression for corn during the reproductive period.<sup>1</sup>

| R Stage                      | Moisture % | Dry Matter (% of Total Dry Weight) | Average per Substage    |      |
|------------------------------|------------|------------------------------------|-------------------------|------|
|                              |            |                                    | Growing Degree Days, °F | Days |
| 5.0                          | 60         | 45                                 | 75                      | 3    |
| 5.25 (¼ milk line)           | 52         | 65                                 | 120                     | 6    |
| 5.5 (½ milk line)            | 40         | 90                                 | 175                     | 10   |
| 5.75 (¾ milk line)           | 37         | 97                                 | 205                     | 14   |
| 6.0 (Physiological maturity) | 35         | 100                                |                         |      |

<sup>1</sup>Abendroth, L.J., R.W. Elmore, M.J. Boyer, and S. K. Marlay. 2011. *Corn Growth and Development*. PMR 1009. Iowa State Univ. Extension. Ames Iowa.

|               | Estimated Black Layer Date (1197 GDU's) |           |        |         |        |         |             |          |
|---------------|---|-----------|--------|---------|--------|---------|-------------|----------|
| Planting Date | Macomb                                  | Galesburg | Orion  | Kewanee | Pekin  | Lincoln | Bloomington | Streator |
| April 5th     | 3-Sep                                   | 8-Sep     | 8-Sep  | 16-Sep  | 7-Sep  | 4-Sep   | 7-Sep       | 5-Sep    |
| April 22nd    | 7-Sep                                   | 12-Sep    | 12-Sep | 21-Sep  | 12-Sep | 8-Sep   | 12-Sep      | 9-Sep    |
| May 10th      | 16-Sep                                  | 20-Sep    | 20-Sep | 2-Oct   | 20-Sep | 16-Sep  | 20-Sep      | 16-Sep   |
| May 25th      | 27-Sep                                  | 30-Sep    | 1-Oct  | 16-Oct  | 1-Oct  | 27-Sep  | 1-Oct       | 26-Sep   |

**Physical Maturity (R6):** The charts above correlates to planting date and location relative to estimated black layer in the hybrid family P1197 (111 day maturity). This is taking account for the GDU accumulation in each area this year (2020) so these dates are only relative to this year. Once at black layer, moisture is around 30-35%. Corn dry-down rate is tightly linked to GDU accumulation. To go from 30% to 25% it takes about 30 GDU's per point. To go from 25% to 20% it takes about 45 GDU's per point.

