



Printed from the:
 MU Agronomy Extension Web Site
<http://www.psu.missouri.edu/cornx>
 for more information contact:
 Bill Wiebold (wieboldw@missouri.edu)

Identifying Corn Growth Stages - Reproductive

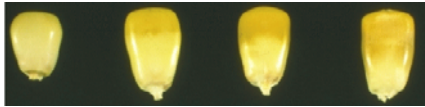
Bill Wiebold

Identifying stage of development is essential for proper diagnosis of corn pests or other problems and to determine the effect of these stresses on yield. Unfortunately, no standard method of staging corn development has been agreed upon by all crop advisers. The following method was developed by Iowa State University and is followed by most extension specialists and research scientists. To avoid confusion it is important to include a description of the stage along with letter/numeral designation. When attempting to determine a stage be sure to observe plants throughout the field because variation occurs within any field. A stage occurs for a field or sample when 50% of the plants are at the stage in question.

Corn development is divided into vegetative (V) and reproductive (R) stages. Subdivisions of the reproductive stages are designated numerically: R1 through R6 (fig 1). The first reproductive stage, silking, occurs when silks are visible outside of the husks. These silks must be visible at the same time pollen is shed from the tassel for pollination to occur. Corn yield response to stress is most sensitive during a four week period centered around R1.

R1	Silking
R2	Blister
R3	Milk
R4	Dough
R5	Dent
R6	Physiological Maturity

The names of the next five stages are descriptions of the developing kernel. When the endosperm first forms it contains a liquid with the color and consistency of a blister. The endosperm turns white and its consistency becomes increasingly thicker as solid starch is deposited. In most corn hybrids, carotene is added, which gives kernels a yellow color. A dent forms at the tip as the center of the kernel collapses because of differential shrinkage. After R5, a “milk line” forms that marks the layer between liquid and solid starch in the endosperm (fig 2). The final stage, physiological maturity, occurs when kernels have obtained their maximum dry weight. An abscission layer forms a brown to black layer near the bottom of the kernel (fig 3). Grain is



about 30-35% moisture at R6, so in-field drying is usually necessary for optimum combining.

