ANR-0139

Abnormal Ears In Corn—When and Why Do They Develop?

ANR-0139-Table 1

Symptoms	Possible Causal Factors	Development Timing
1. Tassel ears: ears at the top of tiller plants in place of tassels (Figure 1)	Lower populations, end or border rows, growing point damage, genetics	Initiation and differentiation of tiller's apical meristem into floral structure
2. Fasciated ears: increased and non-organized kernel rows (Figure 2)	Specific mutants (i.e., genetics), cold temperatures	Ear initiation and development, V4–V7
3. Arrested ears: ear development arrested or stopped prematurely (Figure 3)	Nonionic surfactant (NIS) formulations	Ear size determination period, V6–V12; and up to V16
4. Pinched ears: abrupt change to fewer kernel rows in the ear (Figure 4)	Cell division inhibitors, for example, sulfonylurea herbicides	Ear size determination period, V6–V12
5. Blunt ears: noticeably shorter and stunted ears (Figure 5)	Plant stressors (e.g., chemicals or environment), genetics, management	Ear size determination period, V6–V12
6. Silk-balled ears: silks fail to elongate toward the ear tip properly (Figure 6)	Cold temperatures, drought, genetics	Silk elongation, V12–R1
7. Incomplete kernel set: poor or scattered kernel set in the ear (Figure 7)	Silks damage, drought, high temperatures, pollination issues, phosphorus shortages, herbicide injury, cloudy days	Pollination, VT or R1; and early reproductive stages, R1–R3
8. Banana ears: the curvature of the cob toward a damaged side of the ear (Figure 8)	Severe weather, chemical applications, heat or drought, stink bug injury	Pollination, VT or R1; and early reproductive stages, R1–R3
9. Zipper ears: ears with missing kernel rows (Figure 9)	Higher seeding rates, drought stress, genetics, defoliation, deficient pollination	Pollination, VT or R1; and early reproductive stages, R1–R3

continued next page

Symptoms	Possible Causal Factors	Development Timing
10. Tipped-back ears: missing kernels at the tip of the ear (Figure 10)	Pollen and silk availability, kernel abortion, cloudy days, heat, drought, genetics, higher seeding rates	Pollination, VT or R1; and early reproductive stages, R1–R3
11. Multi-ears per node: multiple ears at individual stalk nodes or same ear shank (Figure 11)	Environmental stress (e.g., cold), low seeding rates, genetics, damage to primary ear	After ear initiation (V4–V6) and before pollination (VT or R1)
12. Barbell-ears: missing kernels and diameter decrease in the cob (Figure 12)	Temperature stress, limited solar radiation, ethylene, hormones, chemical applications, genetics, damage to the primary ear	During ear size determination period, V6–V12; and up to R1
13. Short-husk ears: shortened husk leaves with ears protruding beyond the husks (Figure 13)	Short-term stress, for example, heat or drought followed by cooler temperatures and precipitation, high-speed winds or storms, genetics	Close to tasseling and pollination, V18–R1