

ABNORMAL CORN EARS

There are several factors that can impact corn yield potential including weather stresses, pest pressures, soil characteristics, available soil fertility and management decisions that impact agronomic practices. Corn ears can be a great indicator of crop health. By identifying the factors that may have influenced ear development and yield potential on your farm this year, appropriate agronomic management strategies can be identified and deployed to help maximize yield potential in future corn crops.



Chaffy Ears:

Lightweight, poorly filled, shrunken kernels with spaces in between them.¹ Chaffy ears are often caused by conditions that result in premature plant death or reduced plant photosynthetic capacity during grain fill. Common causes include frost damage, drought, foliar disease, excessive plant populations, severe potassium deficiency and hail damage.



Ear Pinching:

The length of the ear is usually normal but the number of ear rows is reduced by up to 50% from the base to the tip of the ear.¹ Severe stress during the V7 to V10 growth stages can cause a reduction in kernel rows. Late post-emergence applications of ALS inhibitor herbicides can result in ear pinching.



Incomplete Kernel Set:

Ears will have a limited number of kernels. Causes range from uneven crop development, an inadequate supply of pollen during pollination, severe drought, high temperatures, phosphorous deficiency, herbicide injury, or insect feeding and silk clipping.¹



Tip Dieback:

Kernel abortion at the tip of the ear. Unfertilized ovules and aborted kernels may appear dried up and shrunken but aborted kernels may have a yellow color.¹ Tip dieback is caused by stress such as drought, nitrogen deficiency, high temperatures, foliar disease or prolonged cloudy weather during early kernel development.



Drought Damaged Ears:

Small irregularly shaped ears with poor kernel set, which is pronounced at the ear tip. Kernel numbers are reduced due to fewer kernel rows and kernels per row.¹ Though the cause is often severe drought stress from mid-vegetative growth through the grain fill period, nubbin ears may also be caused by nitrogen deficiency or excessive plant populations.



Zipper Ears:

Partial or missing kernel rows on the underside of the ear due to kernel abortion.¹ Differential kernel formation can result in bending of the ear (banana ear). Potential causes include drought stress or crop defoliation after pollination or herbicide damage to reproductive tissues (pollen, silks, ovules) from misapplications of herbicides beyond the labeled crop height.



Blunt Ear Syndrome:

Normal kernel development at the basal end of the ear, but kernels are greatly reduced toward the middle of the ear and barren at the tip. Overall ear length is often shorter than normal; however, husk length and the number of kernel rows are usually normal.

Photos courtesy of Dr. Peter Thomison, Ohio State University from the publication Abnormal Corn Ears - ACE-1.2