

Between The Rows

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number of rows on an ear is usually determined quite early, six weeks or so after planting. Normally the number of rows is fairly strongly fixed, but severe early season stress can cut the number of rows per ear. This year, I've found ears with as few as 12 rows to as many as 20. The early drought stress encountered in areas such as northern Lancaster County and central Pennsylvania had this effect and resulted in a ceiling on yield potential.

Another aspect of ear size are kernels per row. The potential numbers of kernels per row is set just after the number of rows is fixed on the developing ear. Kernels per row is affected somewhat by genetics, with the later hybrids generally having the potential for more kernels per row. This characteristic is also frequently influenced greatly by environmental conditions. An early season stress

such as nitrogen deficiency can often result in short ears. Later in the season, pollination problems caused by heat or drought stress or insect feeding can further reduce kernel number.

Dry conditions resulted in some pollination problems in corn at our Rock Springs research facility. In the past, I've seen similar pollination problems due to rootworm beetles clipping silks. In some cases, pollination problems are limited to the ear tips, since the silks near the tip of the ear are the last to emerge.

The number of kernels per row can also be affected by other factors. One of these is called kernel abortion. Aborted kernels will appear as small whitish shrunken kernels near the end of the ear. These are often the result of a late season stress factor that reduces the sugars available to fill kernels. As a result, the plant aborts some kernels on the ear so that

the remaining kernels can be reasonably well filled out. Typical late season stress factors in Pennsylvania include drought, foliar disease, nitrogen deficiency, and extended periods of cool, cloudy weather. This year some areas had a second droughty period in mid-late August which caused a significant amount of kernel abortion.

A third factor which can reduce kernel numbers and seems to be common this year is bird damage. Bird damage is most common in areas with a lot of birds, such as fields bordering woodlands, rivers, or lakes. The problem seems to be exacerbated in some areas this year because late season rains stimulated ear expansion beyond the end of the husk tissue. The symptoms of bird damage are a bare cob on the end of the ear surrounded by a shredded husk.

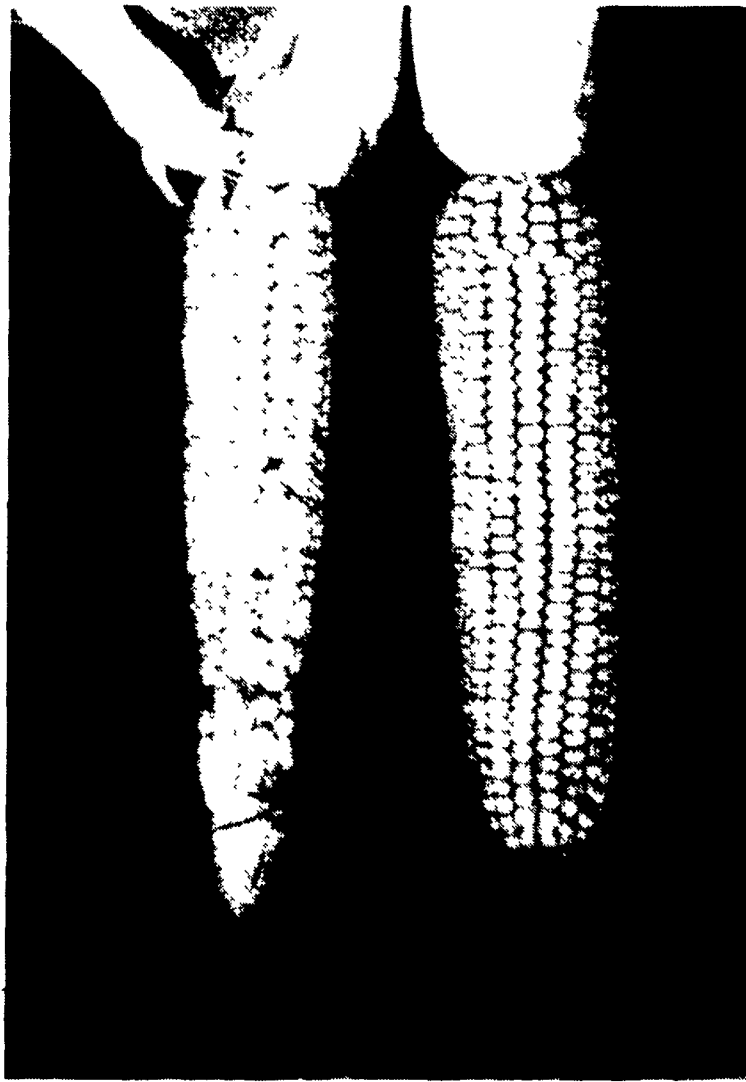
Another aspect of size is grain fill. Well-filled ears should have kernels squeezed together, with little space between them at maturity. The depth of kernels can also vary. In some areas this year, conditions for grain fill were near excellent. There we should expect well-filled grain and good test weight corn.

Observing corn ears is no substitute for careful observation throughout the season, but it can provide some clues as to how you're management system is working. Take some time this year and listen to what your ears are telling you.



CORN TALK NEWS

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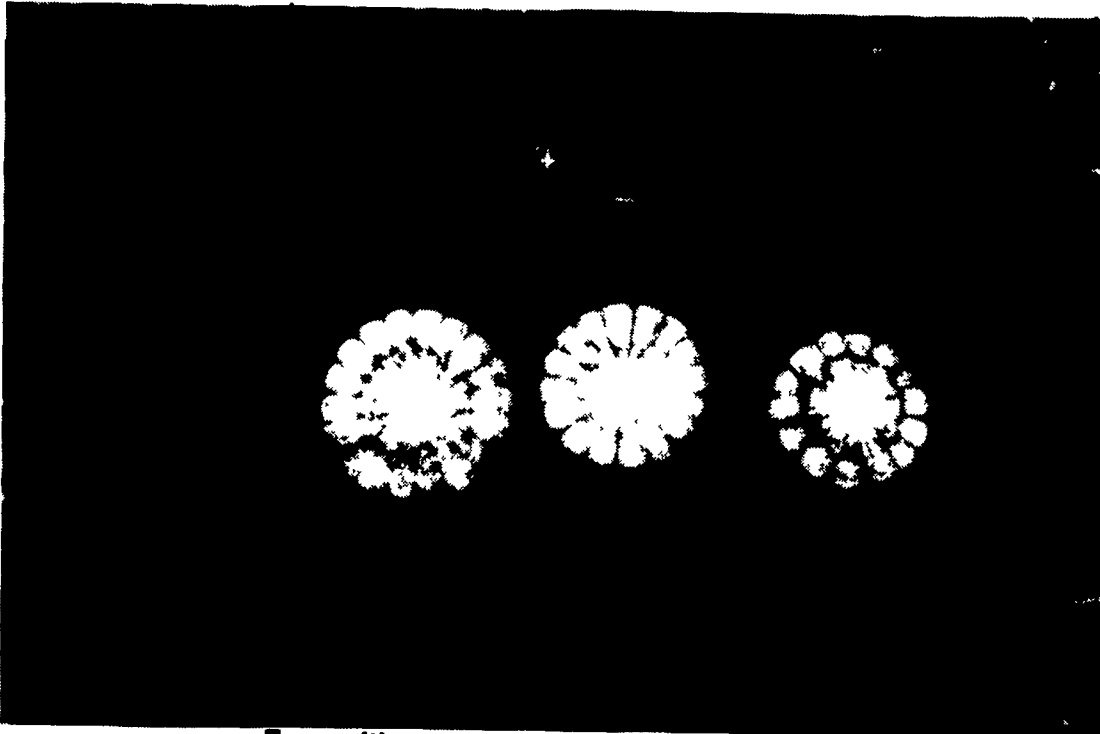
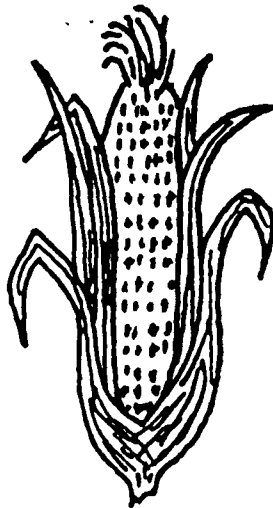
Midseason heat and drought stress reduced pollination in many Pennsylvania corn fields this year.



Kernel abortion, caused by late-season stress, will reduce the yield of this crop.



Bird damage is a problem to many growers this year.



Ears with 14, 16, or 18 rows of kernels.



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