

Plant Population Effects on “Zipper Ears” in Corn

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The purpose for this study was to determine whether or not plant population has an effect on kernel row abortion of corn ears (ear zippering). Zipper ears are characterized by missing entire or parts of kernel rows, primarily due to kernel abortion. Zipper ears are often associated with stress conditions, such as drought. We believed that there would be a higher percentage of zipper ears found at higher plant populations.

We evaluated zipper ears at four Ohio Corn Performance Test (OCPT) locations in 2011: Hebron, South Charleston, Hoytville and Wooster. We planted a hybrid that has been observed to exhibit a high amount of ear zippering. The hybrid was planted in a complete randomized block design with three replications. Seeding rates of 67,900, 95,100, and 122,200 seeds/ha were used to target achieve final plant populations of 61,700, 86,400 and 111,100 plants/ha in each replication.

We visually evaluated all the entries in the OCPT for ear zippering at or just prior to maturity. We based our ratings on the appearance of the ear on the stalk (without husking the ear). With these ratings we can show that many hybrids show a tendency to exhibit zipper ears but at a low level. The zipper ear hybrid was evaluated at the same time as a comparison and this evaluation showed a much higher level of zipper ears.

Plant population affected the degree of ear zippering. The low plant population exhibited lower levels of ear zippering whereas the high plant population exhibited higher levels. In conclusion, ears that exhibited greater zippering have fewer kernels than ears exhibiting low levels of zippering. This is due to the missing rows on the ears.