

## Effect on maize (*Zea mays*) hybrids

### Interaction between host density and fungus

Table showing the effect of different host densities on stalk rot of *Zea mays* hybrids CH159xCH3 and B14xCH9

**Crop:** Maize  
**Stress 1:** Five host density treatments consisting of 5-, 10-, 15-, 20-, and 25-thousand plants per acre  
**Stress 2:** Natural inoculum of stalk rot disease  
**Stage of the plant:** All growth stages

Plants	Treatments		Plants response to combined stress	
			Type A parameter*	Type B parameter*
	Host density (plants/acre)	Fungus	Yield(bu/acre) <sup>a</sup> **	% of plants with stalk rot <sup>a**</sup>
CH159xCH3	5	Natural inoculum of stalk rot	52.4	2.2
CH159xCH3	10	Natural inoculum of stalk rot	88.7	53.6
CH159xCH3	15	Natural inoculum of stalk rot	98.1	88.7
CH159xCH3	20	Natural inoculum of stalk rot	88.9	88.8
CH159xCH3	25	Natural inoculum of stalk rot	76.5	91.5
B14xCH9	5	Natural inoculum of stalk rot	48.7	0
B14xCH9	10	Natural inoculum of stalk rot	90.6	0
B14xCH9	15	Natural inoculum of stalk rot	94.7	0.6
B14xCH9	20	Natural inoculum of stalk rot	65	5.6
B14xCH9	25	Natural inoculum of stalk rot	52.7	10.9

*a*-Data record of 1961; last timepoint T3

**For raw data** – Click here (.xlsx file)

#### Reference-

Mortimore CG and Wall RE. Stalk rot of corn in relation to plant population and grain yield. Canadian Journal of Plant Science 1965; 45, 487-492.

#### Note:

\* - For more information on parameters classification, please refer to 'methodology' tab.

\*\* Values presented as they were in the source articles without subjecting them to the calculation.

**The inference from the study:** Mortimore and Wall, 1965 found that increasing plant populations results in the enhanced incidence of stalk rot in both susceptible (CH159xCH3) and resistant(B14xCH9) hybrids of corn. Infact, at lower plant densities, the resistant hybrid showed no incidence of disease, but increasing plant population disrupts its resistance to the pathogen. Higher plant populations also lead to reduced yield in both the hybrids.

*High host density increases the incidence of stalk rot disease in corn*