



Plant Population Impact on Corn Yield

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Abstract

The objective of this study was to assess the performance of tall (traditional) and short-statured corn hybrids under a range of plant population densities and various N levels. Field trials were conducted in 2025 at 2 experimental locations in Virginia: Blacksburg (BB), and Mt. Holly (MH). Twelve treatments (combination of 4 plant population levels x 3 N rates) were replicated 4 times at each location. A4861 hybrid (TC) was evaluated at 25,000 (Low=LP), 28,000 (Medium=MP), 32,000 (High=HP), and 36,000 (Very High = VHP) plants per acre. PR116-20RIB hybrid (SC) – at 28,000 (LP), 32,000 (MP), 36,000 (HP), and 40,000 (VHP) plants per acre. Performance of both hybrids was assessed at 3 N levels: check (no additional N applied = Low (LN), 30 lb N/a = Medium (MN), and 60 lb N/a = High (HN). Nitrogen was side-dressed as liquid urea ammonium nitrate (UAN; 28-0-0). Corn yields ranged from 145 to 319 bu/a. Average yields were higher at BB (285 bu/a) compared to MH (211 bu/a). Yields for TC were higher compared to SC at both locations: on average at BB, TC yielded 23 bu/a more, and at MH – 48 bu/a more than SC. Lower yields were obtained with LN for both locations, except for SC at MH (lowest yield observed with HP+HN). At both locations, highest yields were observed for VHP+HN treatment, except for TC at BB (higher yield was obtained with LP+HN). Yields of TC were more stable across locations, growing conditions and treatments. Research will be continued over multiple locations and years to develop grower recommendations.

Keywords: corn, seeding rate, plant population