

DO DIFFERENT CORN HYBRIDS HAVE DIFFERENT N NEEDS?

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There continue to be claims that N management can be tailored to better fit specific hybrids, but there has been no recent confirmation that hybrids differ consistently in their N response. We tested the response of ten hybrids to N rates over two years (2003 and 2004) in a productive, silt loam soil near Urbana, Illinois. The previous crop was corn. Main plots consisted of five N rates (0, 60, 120, 180, and 240 lb N/acre), and ten Burrus corn hybrids (438Bt, 440, 442, 576, 583Bt, 625, 645, 727, 710, and 795B) were assigned to subplots. N was sidedressed as 28% UAN at V6. Yield data were fit using the quadratic+plateau model. There were yield differences due to both hybrid and economically optimal N rate (EONR) in both years, and averaged across years. The hybrid x N rate interaction was significant in 2004 and when averaged across both years. EONR values among hybrids ranged from 90 to 240 lb N/acre in 2003 and from 134 to 240 lb N/acre in 2004. There was no association between optimal yields and optimal N rates among hybrids in either year, or when data were averaged over both years. While one hybrid (727) had a high (240 lb N/acre) EONR in both years of the study, there was no overall association among hybrids between EONR values from 2003 and those from 2004 (Figure 1). While our results thus show that EONR values vary considerably among hybrids, they also indicate that such differences are not very consistent. This suggests that differential N responses among hybrids, while they may have some genetic basis, are subject to so much variability among years that managing N according to hybrid will be difficult.

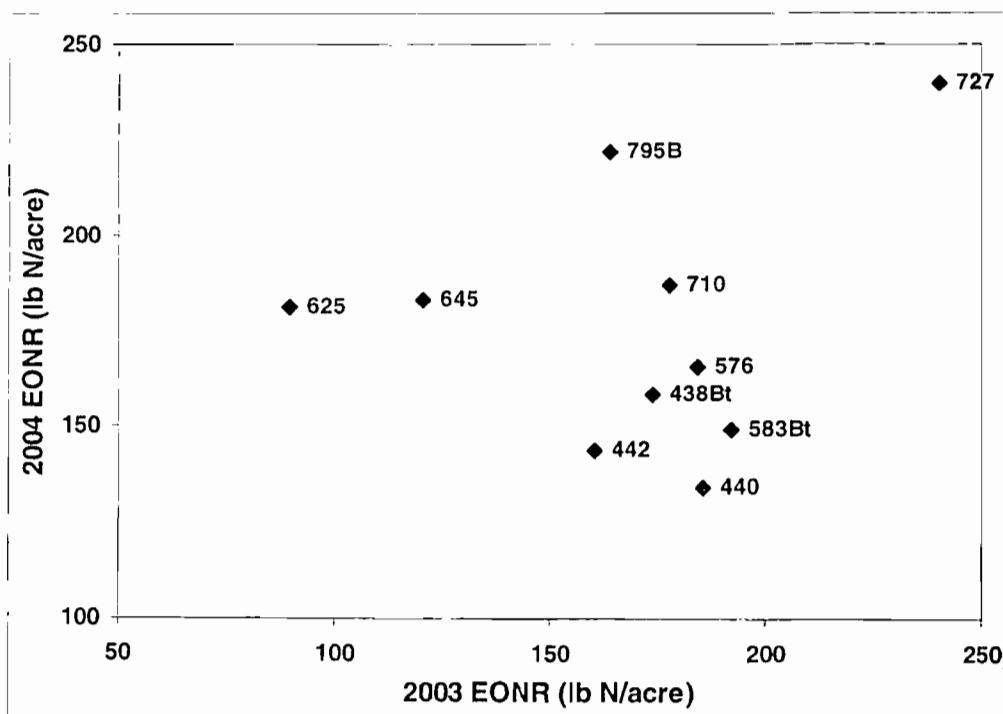


Figure 1. EONR values for ten Burrus corn hybrids in 2003 and 2004 at Urbana, Illinois. Labels on points indicate (Burrus) hybrid numbers.

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