

### **Conclusions/Outcomes/Impacts:**

For the early maturity hybrids, yields were generally good and ranged as high as 235 bu/acre when averaged across both testing locations. Grain moisture at harvest showed a 7.7% spread from the driest to the wettest hybrids, indicating that the hybrids tested encompassed a fair range of maturities.

**The yield:moisture ratio provides an indication of hybrid efficiency in producing high yield under short-season conditions. This ratio is one of the best guides to choosing a hybrid with excellent yield potential and appropriate maturity.** The absolute value of the yield:moisture ratio is not as important as the relative values of the hybrids tested. The hybrids listed in this report are noted as examples of those that showed the traits being discussed. Note that all hybrids in these tables had strong performance, and growers will need to choose hybrids based on the mix of traits that best fits their individual operations and needs.

For early maturing hybrids analyzed at both Chazy and Madrid (Table 1), the high yield:moisture ratio of hybrids like Albert Lea 81-82N, Pioneer P7632AM, Pioneer P8639AM, and Axis 85EXP indicate that they had high yields for their relative maturities. There was some stalk lodging among these hybrids (primarily observed at Chazy, where animal damage can contribute to this problem) but no root lodging at these locations.

Standability is an important trait for hybrid adaptation, especially when rainy fall weather can delay harvest operations. Among the hybrids that had highest yield:moisture ratio values, Albert Lea 81-82N and Pioneer P8639AM also showed low stalk lodging (good standability).

Low values for stay green reflect plants that maintained green leaf area well into the grain filling period – a plus for filling out a good crop. An example hybrid that combined good yield:moisture ratio, standability, and stay green would be Albert Lea 81-82N.

Since hybrid performance for grain yield showed statistically significant interactions with testing locations (in other words, the relative performance of the hybrids differed between Madrid and Chazy), data from each individual test site are provided. Table 2 shows the results from our trial at Madrid. Yields at this site were quite high (average of 211 bu/acre for all the varieties tested) and there was very little pressure on plant standability (no root lodging and a test average of less than 0.5% stalk lodging across all hybrids evaluated). Hybrids with top values for the yield:moisture ratio at Madrid only included Seedway SW 2359-3000GT and Axis 89EXP. Both of these hybrids also had excellent standability and high values for early vigor. The Axis hybrid had particularly good stay green during grain filling as well. Again, all hybrids in this table had strong performance, and growers should choose hybrids based on the mix of traits that best fits their individual operations and needs.

Hybrid evaluation results for Chazy alone are in Table 3. Stalk lodging at Chazy was much more prevalent, and ranged from a low of 2% to a high of 21% of the plants harvested. Hybrids that appeared to combine good yield for their maturity, stalk strength, and good stay green included Albert Lea 81-82N and Dairyland DS 9079 SSX. Note that most hybrids identified in the cross-location analysis were also quite good at each individual location.

Those mentioned here and in the preceding paragraph are examples of hybrids that stood out at one location but not necessarily the other. All hybrids in this table had strong performance, giving growers the option to choose hybrids with the mix of traits that best fits their needs.

Table 4 shows the hybrid data for medium-early maturity hybrids from Madrid. Average yield of these hybrids was high (235 bu/acre) and individual hybrids yields ranged up to 259 bu/acre. The 5% spread in grain moisture values at harvest reflects a bit of a range in maturity for this set of hybrids. When maturities within a trial vary, the yield:moisture ratio is a particularly valuable indicator of which hybrids are producing the most for a given maturity. Hybrids like Albert Lea 68-86 Art, Albert Lea 51-95N, Doeblers RPM 3316 AM , and Dyna-Gro D37VC60 all performed well as reflected by this index. Many hybrids in this test had relatively good early vigor, as reflected by scores close to 5 for this trait. They all tended to retain green leaf area into September (scores near 1 for stay green), which helps to support good grain fill and retain stalk and root health and strength. Almost all hybrids in this evaluation had good standability, reflected in their zero or near-zero values for stalk and root lodging at harvest time. Albert Lea 51-95N and Dyna-Gro D37VC60 combined strong performance for all of these traits, as did a number of the other hybrids tested. Note that all hybrids in this table had strong performance, and growers will need to choose hybrids based on the mix of traits that best fits their individual operations and needs.

As a reminder, **growers should choose hybrids based on multi-year and multi-location data whenever possible**, since any hybrid can have a “banner environment” but not necessarily hold up as strongly over a range of different locations and growing seasons. Much of this data will be incorporated into hybrid performance tables in the upcoming Cornell Guide for Integrated Field Crop Management, which provides that multi-year data summary.

### **Outreach:**

Results from 2016 medium-early maturity trials, harvested in late fall, will soon be available in the 2016 Hybrid Corn Grain Performance Trials report (Plant Breeding Mimeo 2017-1) and on the web at <http://plbrgen.cals.cornell.edu/research-extension/crop-variety-trials/corn-variety-testing>. These results will be incorporated into the multi-year tables of recommended hybrids in the 2018 Cornell Guide for Integrated Field Crop Management (published by Cornell University in fall 2017).

This report shows single year data for early maturity hybrids and the 2016 Hybrid Corn Grain Performance Trials report shows single year data for medium-early maturity hybrids, but recall that hybrid choices should always be made based on multi-year data. Results of 2015 Northern New York Agricultural Development Program testing of medium-early maturity hybrids were incorporated into the multi-year tables of recommended corn grain hybrids in the 2017 Cornell Guide for Integrated Field Crop Management (Cornell University, 2016). These results are available for farmer and seed company use in selecting hybrids best adapted to the challenging soils and climates of NNY. The publications are distributed through extension offices and at various extension and outreach meetings.

**Next Steps:**

Provided that funding is available, we will plan to continue testing hybrids in NNY to ensure that farmers and seed companies have a solid basis for their choices of corn grain hybrids for this important region of the state. We hope to add silage testing in NNY to our activities in 2017 as well, provided funding is available.

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**Reports and/or articles in which results of this project have been published:**

Smith, M.E. 2017. 2016 New York Hybrid Corn Grain Performance Trials. Cornell University, Cornell Cooperative Extension, Plant Breeding and Genetics 2017-1. 11 pp.  
Smith, M.E. and J. Singer. 2016. Corn grain hybrid selection. pp. 53-54. In: Thomas-Murphy, J. (ed.) 2017 Cornell Guide for Integrated Field Crop Management. Pesticide Management Education Program, Cornell University, Ithaca NY. 160 pp.

The 2016 New York Hybrid Corn Grain Performance Trials with medium-early hybrid testing results from NNY and other sites statewide will be posted at <http://plbrgen.cals.cornell.edu/research-extension/crop-variety-trials/corn-variety-testing>.

**For More Information:**

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