

Northeast Corn Improvement Conference Business Meeting

February 21, 2017

Lord Elgin Hotel, Ottawa, CN

Present: Xiaoyang Zhu, Peter Thomison, Alex Lindsey, Bao-Lou Ma, Jeff Coulter, Lana Reid, Jim Breining, Jim Valent, Yvonne Lawley, and Keith Payne.

Jim Breining called the meeting to order at 500 pm. Jim asked for approval of the previous minutes from the 2015 meeting and they were unanimously approved.

Jim asked for reports from Industry and University Representatives:

These are summarized below and on the following pages.

Jim Valent, Channel Seeds

Mergers are the big news in the seed industry. Each of the mergers are moving forward. No word yet on what the implications will be. GMO free areas are developing on dairies in the Finger Lakes region. One concern is rootworm control. RR Extend soybeans are a big issue as well. Herbicide resistant weeds are an increasing problem in the region and contamination from the combine is a common cause. Heat and drought stress was an issue throughout the region in corn.

Yvonne Lawley, University of Manitoba

Manitoba has had four years with good fall weather and there is much excitement about corn production there. One of the hurdles is new crop knowledge. Corn is replacing wheat. Soybeans are growing rapidly as well. Some canola acres are being replaced.

Due to time constraints, Lana asked that oral reports be suspended. Everyone agreed and proceeded to discuss options for the next meeting. One suggestion was to return to Cornell for the next meeting but we were unsure if this would be possible. Another suggestion was to return to Baltimore. Greg and Jim agreed to check with Bob Kratochvil at University of Maryland to see what the possibilities might be in finding a good hotel and to see if there might be some interest among faculty and grad students at Maryland or Delaware joining the program. They will report back to the group later this spring.

The meeting was adjourned at 530.

Respectfully submitted,

Greg Roth, Penn State University

Ontario and Quebec production report

Xiaoyang Zhu, Krishan Jindal, and Lana Reid

Weather condition: Favorable spring conditions in most of Ontario and Quebec. In Ottawa, ON, 80-100 CHU more, 80 RF1 more, but 30 mm rainfall less than average year in May; 180 CHU more and 140 RF1 more until August. The frost date was Oct, 11, 2016. Total 260 CHU more, 180 RF1 more, but 100 mm rain less year until frost date in 2016 than average year had. It was a warmer and drier 2016.

Corn production: In Ontario, Grain corn seeded 2.025 million acres in 2016, which was 1.2% less than in 2015 seeded. Grain corn yielded 158 Bu/A in 2016, which was 12 bu/A less (-7.06%) than in 2015 yielded. Total production was 317 million bushels in 2016, decreased 8.7% than 2015's 348 million bushels. Fodder corn seeded 240,000 acres in 2016, decreased 240,000 acres (-4%) from in 2015; yield 20.4 ton/A (-1.9%) in 2016, which was 20.8 ton/A in 2015; total yield 4.8 million tons (-5.9%) in 2016 but 5.1 million ton in 2015.

In Quebec, grain corn acreage increased 4.8%, and yield increased 15.6%, total production increased 21.4% in 2016 than in 2015. Fodder corn Acreage increased 14.5%, yield increase 7.1%, production increased 21.9% in 2016 than in 2015.

Warmer and drier growth season resulted in many corn fields being planted in first quarter of May. The warm and dry weather during the 2016 growing season in conjunction with early planting led to rapid crop development which resulted in a decrease in the incidence and severity of many foliar diseases compared to 2014 and 2015. Northern corn leaf blight (NCLB), common rust and eyespot were the most common leaf diseases found in Ontario corn fields in 2016 but overall the severity and incidence of these diseases was lower compared to earlier years. NCLB and common rust were found in $\geq 92\%$ of field visited in Southern and Western Ontario with only 16% and 9% of the affected fields having incidence levels of $\geq 25\%$, and only three fields of 122 visited having severity of ≥ 5 ($>20\%$ leaf area affected). NCLB incidence was less in fields sampled in Eastern Ontario (4%) compared to Southern (18%) Ontario. Common rust incidence was also more in Southern Ontario (10%) compared to eastern (3%) and Western Ontario (7%). Eyespot was found in 75% of the fields sampled at a mean severity of 2.1 and an incidence of 4.4% of the fields visited. Grey leaf spot (GLS) was localized primarily in Southern Ontario where it was observed in 72% of the fields sampled. Ear and stalk rot diseases were insignificant at the time of survey. Neither Stewart's bacterial wilt nor Goss's bacterial wilt and blight were detected in Ontario in 2016.

2016 Ohio State Report

P.R. Thomison, The Ohio State University

The 2016 Ohio growing season was characterized by cool, wet conditions in April and May followed by warmer and drier than normal conditions from late June to early-mid August, especially in parts of northern and western Ohio. According to the U.S. Drought Monitor during the second week of August, 46 percent of the state was rated as in “moderate drought” with that area covering most of northern Ohio. Another 15 percent of the state was rated in “severe drought” with that area spreading from west central Ohio to northeast Ohio. Hot, dry conditions at pollination and early grain fill resulted in poor kernel set and ear tip fill but timely rains in August and September reduced the impact of the drought on yield. Premature kernel sprouting and moldy grain caused by ear and kernel fungi, including *Diplodia*, *Gibberella*, and *Trichoderma* fungi, were present in localized areas across the state and were often more evident in early planted, earlier maturing hybrids. Foliar diseases and insect pests were not a major factor at most test sites. There were reports of major stalk lodging in localized areas but stalk quality problems were generally not widespread and negligible. Warm, dry conditions in September and October promoted crop maturation and dry down.

In 2016, 212 corn hybrids representing 26 commercial brands were evaluated in the Ohio Corn Performance Test (OCPT). Four tests were established in the Southwestern/West Central/Central (SW/WC/C) region and three tests were established in the Northwestern (NW) and North Central/Northeastern (NC/NE) regions (for a total of ten test sites statewide). Hybrid entries in the regional tests were planted in either an early or a full season maturity trial. These test sites provided a range of growing conditions and production environments.

Yields varied across the state depending on the timing and duration of drought conditions. Averaged across hybrid entries in the early and full season tests, yields were 241 bu/A in the Southwestern/West Central/Central region, 195 bu/A in the Northwestern region, and 197 bu/A in the North Central/Northeastern region. Yields at individual test sites, averaged across hybrid entries in the early and full season tests, ranged from 163 bu/A at Wooster to 256 bu/A at Hebron. The Wooster, Hoytville and Van Wert test sites were especially dry in June and July and averaged lower yields than other test locations. The full season tests averaged consistently higher yields than the early tests. Moldy grain was observed in some hybrids at Hebron and Beloit. Moderate to high levels of gray leaf spot were evident in a few hybrids at Bucyrus and Beloit. Lodging was largely absent

across sites except at S. Charleston where some hybrids lodged as a result of heavy rains and strong winds in late August.

Tables 1 and 2 provide an overview of 2016 hybrid performance in the early maturity and full season hybrid trials by region. Averages for grain yield and other measures of agronomic performance are indicated for each region. In addition, the range in regional test site averages is shown in parentheses.

Table 1. A regional overview of the early maturity 2016 Ohio Corn Performance Test.

Region	Entries	Grain Yield (Bu/A)	Moisture (%)	Lodging (%)	Emergence (%)	Final Stand (plants/A)	Test Wt. (lbs/bu)
SW/WC/C	85	235 (196-258)	18.2 (14.9-20.4)	1 (0-17)	94 (86-98)	33200 (29700-36500)	56.1 (52.8-59.1)
NW	85	191 (170-209)	18.2 (15.6-20.6)	1 (0-5)	95 (85-99)	33500 (29400-38700)	57.8 (55.2-61.1)
NE/NC	73	189 (168-212)	19.3 (15.4-22.1)	0 (0-3)	96 (82-99)	33600 (28600-36000)	57.1 (54.0-60.3)

Table 2. A regional overview of the full season 2016 Ohio Corn Performance Test.

Region	Entries	Grain Yield (Bu/A)	Moisture (%)	Lodging (%)	Emergence (%)	Final Stand (plants/A)	Test Wt. (lbs/bu)
SW/WC/C	46	246 (222-264)	20.1 (17.6-22.0)	1 (0-6)	95 (85-98)	33400 (28800-35700)	55.7 (53.3-58.0)
NW	77	198 (179-215)	19.9 (16.7-23.0)	1 (0-23)	96 (91-99)	33700 (29500-38500)	56.7 (53.0-59.5)
NE/NC	48	205 (181-224)	21.5 (18.3-24.8)	1 (0-4)	97 (90-99)	33900 (29400-36400)	55.8 (52.5-58.8)

Source:

Rich Minyo, Allen Geyer, Peter Thomison, and David Lohnes. 2016. 2016 Ohio Corn Performance Test: Regional Overviews. C.O.R.N. Newsletter. OSU Extension. 12-01-2016.

2016 PA State Report

Jim Breining

The growing season, 2016 could best be described as a year of extremes. The winter 2015-2016 was one of the warmest on record. Snow and rainfall through the winter months were below average statewide. March and April saw continued above normal temperatures and near normal rainfall. Field conditions for planting were near optimum the last week of April, and many acres of corn were planted statewide. By May 1st, the central and southern parts of the state were again saturated with rainfall and field conditions were unfit for planting for one to three weeks. The northern tier saw less rainfall and planting began again around May 9. Planting didn't begin again in the southern part of the state until May 16. Most corn acres were planted before June 1. Some of the earliest planted corn saw stand reductions due to continued cold and saturated soils, but overall, stand establishment was good.

The summer months June – August were generally warm and dry. The center region of the state experienced severe drought through much of this time frame and plant height and ear development were severely impacted. Around the perimeter of the state, conditions were somewhat better and corn yields in those areas were average to much above average. The harvest season September –November were generally very good with continued warmer than normal temperatures and timely rainfall. Yield response was greatest on later planted fields, especially in the center region of the state.

Corn disease pressure was very light and didn't contribute any stand or yield reductions.

The year-end NASS report indicated 1,400,000 acres were planted to corn in 2016, an increase of 60,000 acres over 2015. Corn harvested for grain acres were 950,000, an increase of 10,000 acres from 2015. Corn silage acres harvested were 440,000, 50,000 acres more than 2015.

Corn yield for grain was set at 129 bu/acre, a decrease of 18 bu/acre from 2015.

Corn silage yield was estimated at 17.5 ton/acre, a reduction of 2.5 tons/acre from 2015.

The Pennsylvania commercial corn trials reported the follow information:

<u>Corn Silage trials</u>		<u>Corn Grain trials</u>		
Trial	Yield	Trial	Yield	Range
G0/1	19.8 tons/acre	Z1	175.9	151.5-205.4
G2	17.4 tons/acre	Z2	177.3	150.2-216.1
G2SC	22.7 tons/acre	Z3/4	204.9	201.8-210.7
G3/4	24.5 tons/acre			

Number of participating companies – 17
participating companies – 14
Number of entries – 163 (18 conventional
conv.)

Number of
Number of entries – 106 (0

Range of plantings – 5/9 - 6/1
5/26

Range of plantings 4/25 -

2016 New York State Report

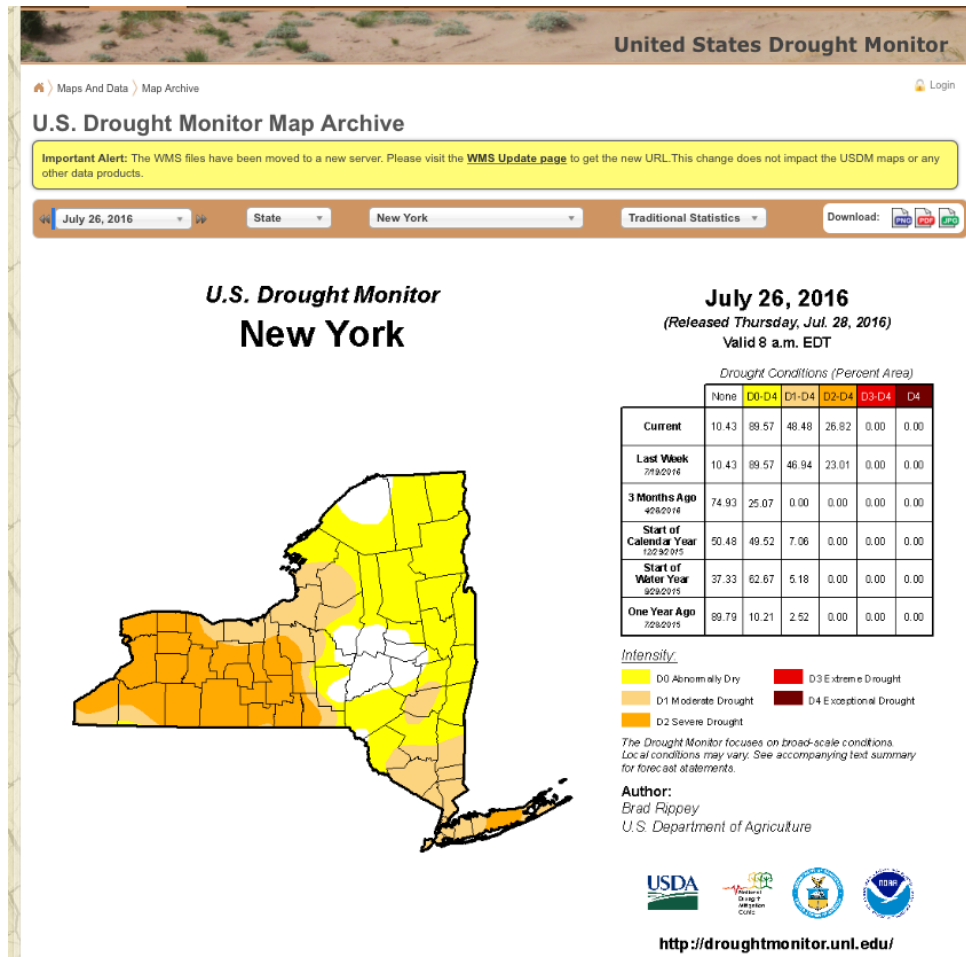
Sherrie Norman, Keith Payne, Daniel Fisher, Margaret Smith

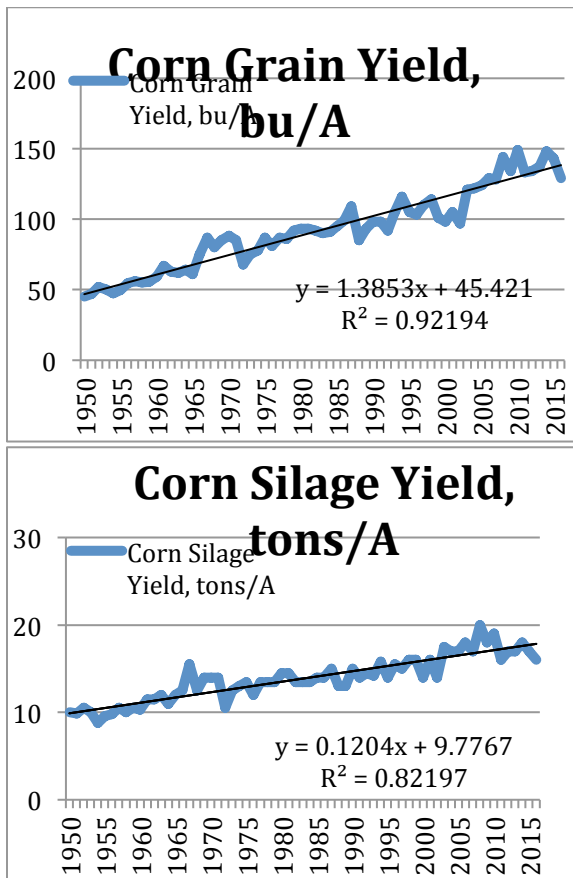
The 2016 season in New York had some precipitation extremes, but in different directions from what we saw in 2015. While 2015 was characterized by unusually high rainfall in early summer, 2016 was generally dry through much of the summer, and some parts of the state experienced significant drought. Typical growing season temperatures and generally dry conditions in May allowed for timely planting and good crop establishment. Beginning in June, however, the state experienced varying levels of drought combined with above average temperatures, resulting in drought-stressed corn in many areas. Those spots that had timely rains survived well, but some areas had significant crop losses. By 26 July 2016, the USDA Drought Monitor web site for New York recorded 27% of the state's area in severe drought conditions (D2), 22% in moderate drought (D1), and 41% abnormally dry (D0). Only 10% of the state's area was assessed as not drought stressed at this time (see figure below). This was the most extreme level of growing-season drought stress in NY that most people could recall. Cornell yield trials in New Hope (eastern Finger Lakes area) and Pittsford (central shore of Lake Ontario, near Rochester) had less than 80% of average growing season rainfall combined with warmer-than-average temperatures, while those in Albion (northwestern NY) and Kingston (southeastern NY – Hudson River Valley area) had less than 67% of average growing season rainfall and high temperatures. Most trial sites other than Kingston had very high rainfall in October (anywhere from 25% above average to more than twice the average monthly total). Our breeding nursery location in Aurora had 8" of rainfall in October alone! Needless to say, this complicated harvesting operations. The 8" of October rainfall at Aurora brought season-long precipitation totals to only 2" below 30-year averages (91%), which belies the fact that May through July totals were 6" (43%) below the long-term averages.

Generally dry conditions through the summer months resulted in very little leaf disease pressure during 2016. Insect pressure also was minimal.

Given the summer water stress in 2016, yields on New York's 570,000 acres harvested as grain were surprisingly good. State average yield was reported at 129 bu/acre – 20 bu/acre lower than the record 2010 and 2014 yields, but still the 9th highest state corn grain yield reported. This drop-off in 2016 did not change the trend line for New York

corn grain yields, which have increased at a rate of 1.4 bu/acre/year for the past 65 years (see graph below). Yields for New York's 510,000 acres harvested as silage averaged 16 tons/acre in 2016, which was at the bottom of the range of silage yields over the past 14 years, but equal to or higher than all state averages prior to 2003. The trend line for silage yield increases has been fairly steady at 0.12 tons/acre/year for the past 65 years (see graph below).





Minnesota Report – 2017 Northeastern Corn Improvement Conference

Jeffrey A. Coulter, Ph.D.

Associate Professor and Extension Specialist, Corn-Based Cropping Systems

University of Minnesota

Corn was planted on 8.45 million acres in Minnesota in 2016, up from 8.1 to 8.2 million acres during the previous two years. About 95% of Minnesota's corn was harvested for grain in 2016, similar to prior years. The 2016 growing season was generally favorable for corn production. Planting began slightly ahead of normal in mid-April and about 60% of the state's corn was planted by the end of April. A freeze in mid-May impacted many acres of early-planted corn throughout the state. Freeze-damaged corn generally recovered with limited reductions in yield. Warmer-than-normal air temperatures resulted in pollination that was about one week or more ahead of normal and largely during mid-July. Modest heat stress occurred soon after pollination in much of southern Minnesota, but generally was not accompanied by lack of soil moisture. Air temperature and soil

moisture during the remainder of the growing season were generally conducive for kernel maintenance and grain fill, although there was considerable variability in conditions across the state. Excessive precipitation occurred in mid-September in many areas of southern and central Minnesota, creating challenges with timely harvest, particularly for corn harvested as silage. Silage yield averaged 21.5 tons per acre across the state, similar to that in 2015 and 19% greater than that in 2014. Record grain yield (statewide average = 193 bushels per acre) occurred in 2016, with greatest yields typically in western Minnesota. In comparison, grain yield averaged 188 and 156 bushels per acre in 2015 and 2014, respectively.

Palmer amaranth, an exceptionally-competitive and aggressive weed of the pigweed family, was detected for the first time in Minnesota in 2016 and is a concern to growers and crop advisors. Continued performance problems of certain Bt corn rootworm traits against corn rootworm persist. A major emphasis in Minnesota is improving water quality, largely through enhanced nitrogen management and new legislation mandating permanent vegetative buffers along waterways.