# FUNGICIDES ON CORN YIELD
## Cooperative study with the Kane County Corn Growers Association & University of Illinois Crop Sciences Department

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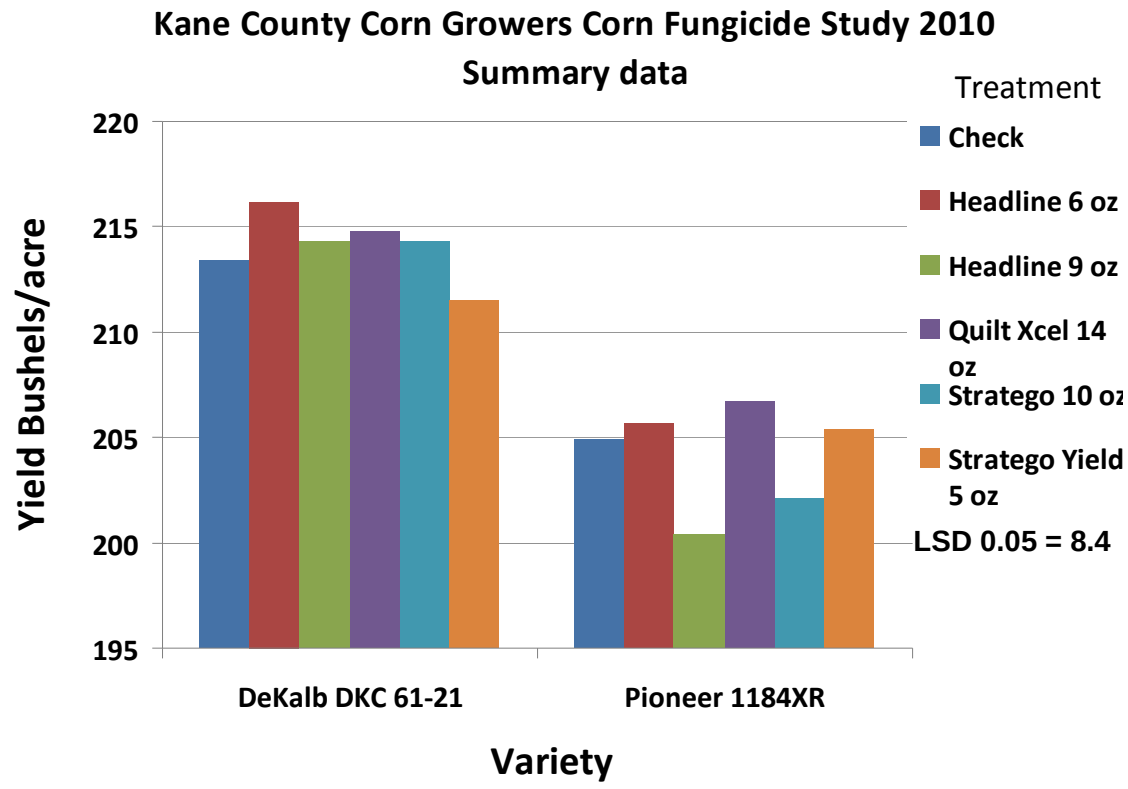
The study of the effects of fungicide applications on corn yield was continued for a third year. Three study areas have been used all years. Each year, two of these were located as part of the Kane County Corn Growers Association Variety Trial (KKCG) in Kane County, north of Elburn, and the other was on the University of Illinois Northern Illinois Agronomy Research Center (NIARC) near Shabbona. Two of the sites each year were first year corn following soybeans and the other was continuous corn. In 2010, the yield results from the NIARC site had too much variability due to reasons other than the fungicide, disease or variety and therefore are not included in the summary of data.

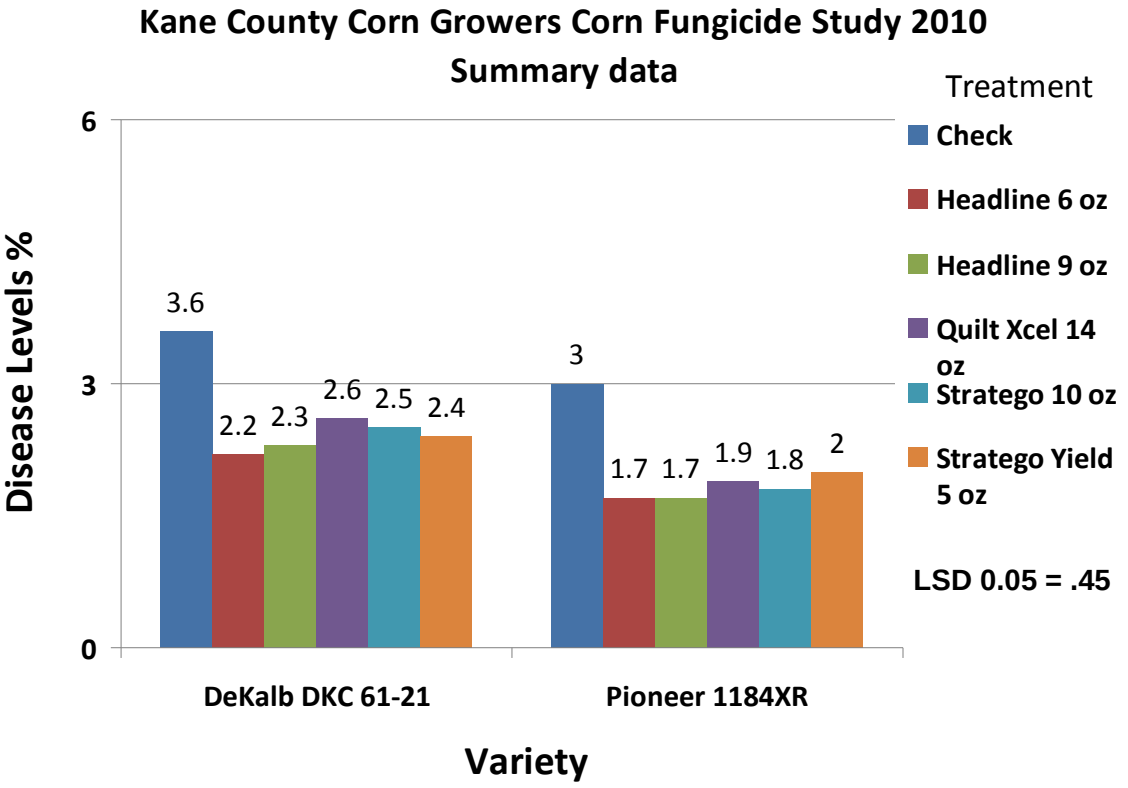
This year the previous practice of using two varieties from one company with different levels of disease resistance was changed to using a variety with good disease resistance from each of two companies. DeKalb Brand variety DKC 61-21 and Pioneer Brand variety 1184XR were selected to be used this year. This year both the rotated and continuous corn areas were planted on April 29 and harvested on October 12. In 2008, the plots were planted on May 10 at NIARC and May 21 at KCCG. In 2009 the plots were planted on May 19 at NIARC and May 23 at KCCG. Five fungicide treatments were applied at the R-1 stage of plant development this year and also previous years. Disease severity ratings were taken at all sites in August or September of each year.

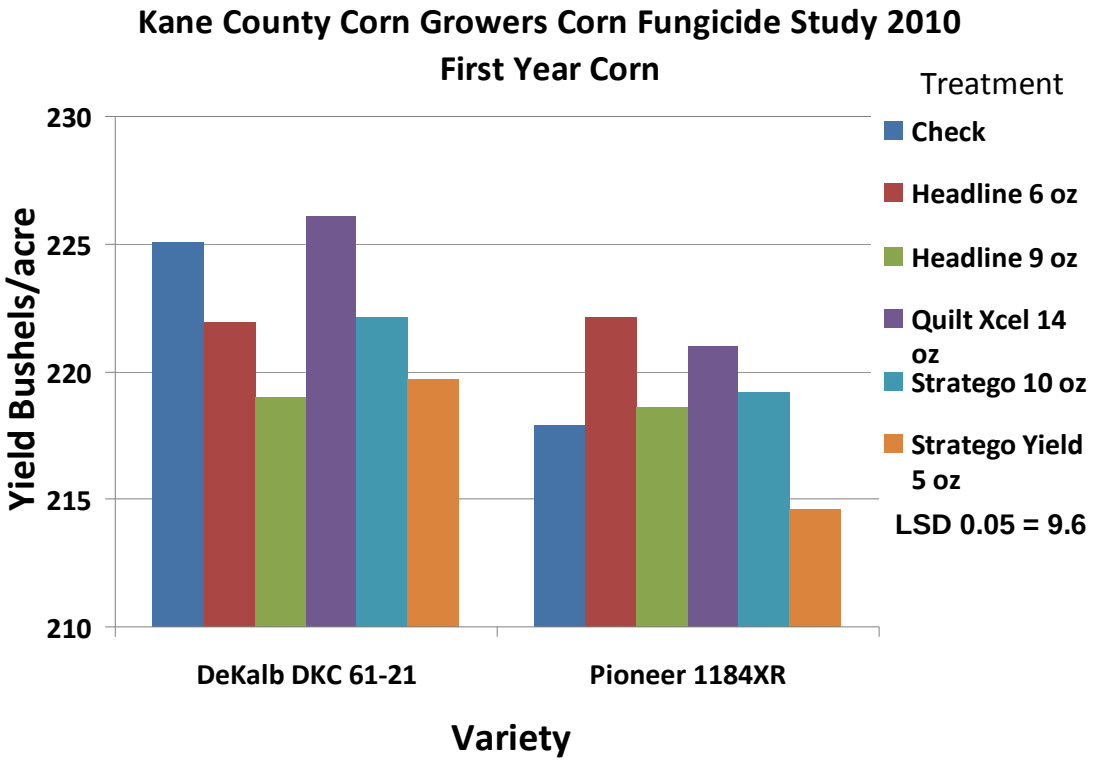
In 2010 the disease levels were quite low. There was a significant difference between the untreated check and all fungicide treatments, but the level of disease in the untreated check was less than five per cent and did not justify treatment. Although the disease levels were not high in the previous two years either, there was one individual fungicide treatment in 2008 that gave a 47 bushel per acre yield increase over the untreated check of that variety in the continuous corn area. In 2009 and 2010, the responses to fungicide were much lower. The following charts show the response to the fungicide as a summary of the KCCG sites for 2010 and a summary for all sites and all varieties with the combined data for the products that were used all three years at the same application rates.

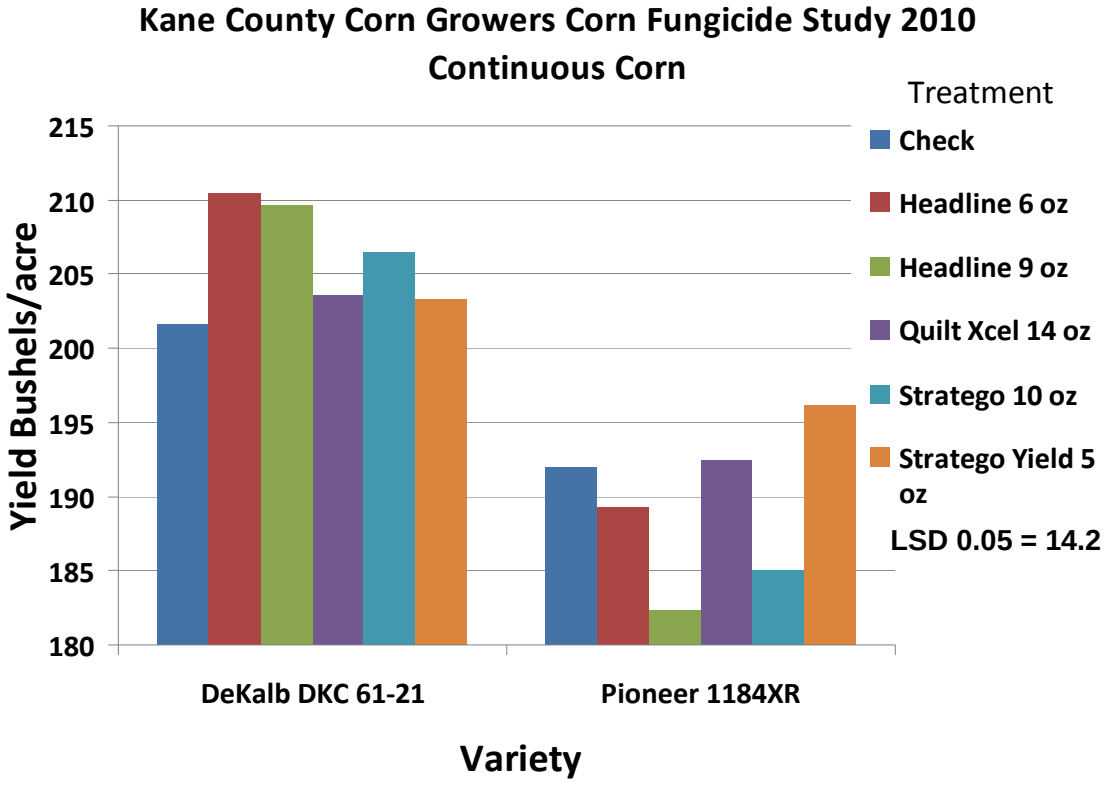
The cost of treatment on average was about equal to five to six bushels of corn per acre in 2010, eight bushels of corn per acre in 2009 and about six bushels of corn per acre in 2008. When the sprays were applied in the summer of 2010, the projected cost versus the cash price of corn at the time would have been closer to eight to nine bushels of corn per acre. In 2010, with the low levels of disease, the response to fungicide would not have paid the cost of application, even with the increased price of corn per bushel. Over the three years of the study, the use of fungicide would have been about breakeven when averaged over all of the treatments, fields, varieties and years in this study.

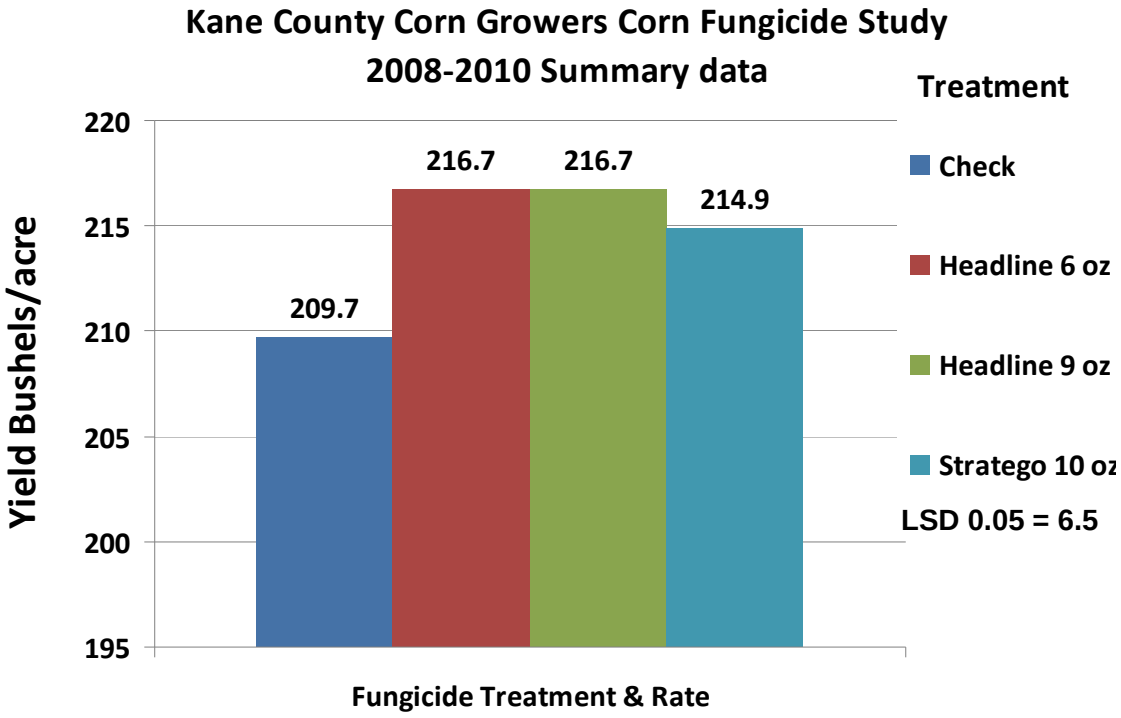
In reviewing the data, there was only minimal disease in any year except in 2008 when there was more disease present. Knowing the disease susceptibility of an individual variety, the disease(s) present and the potential for more disease development should be the factors used for determining if a fungicide treatment will be economically beneficial and which fungicide to use.

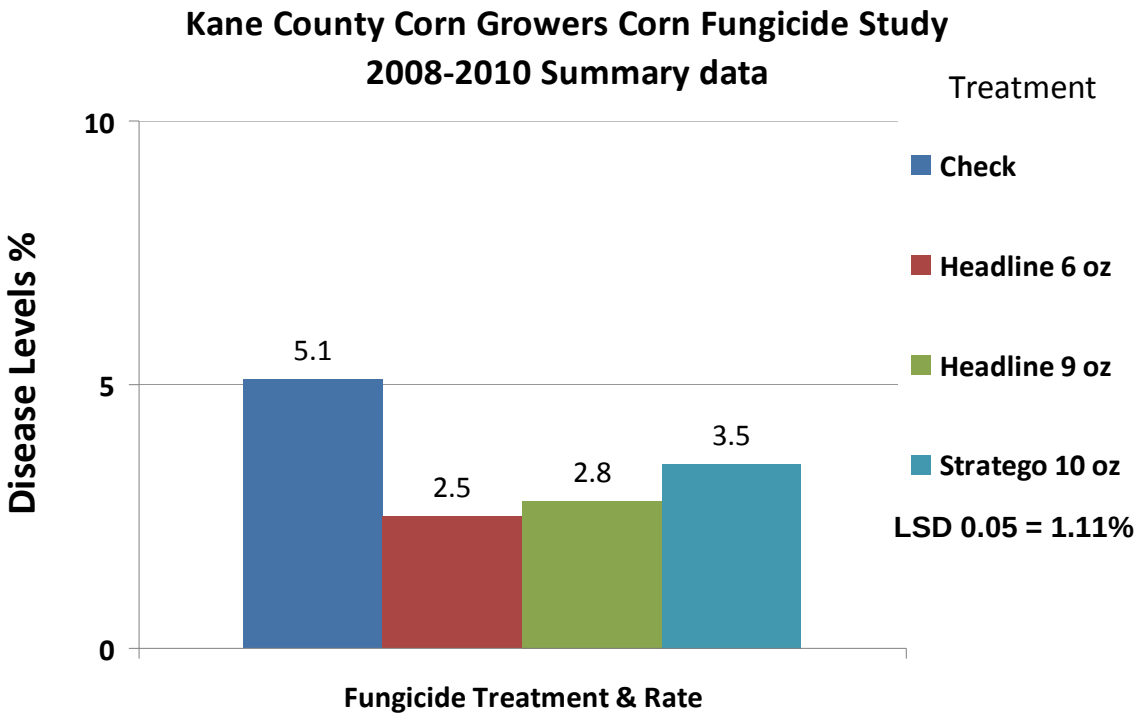

Kane County Corn Growers Corn Fungicide Study 2010
Summary data
Yield Bushels/acre
220
215
210
205
200
195
Treatment
Check
Headline 6 oz
Headline 9 oz
Quilt Xcel 14 oz
Stratego 10 oz
Stratego Yield 5 oz
LSD 0.05 = 8.4
DeKalb DKC 61-21
Pioneer 1184XR
Variety


Kane County Corn Growers Corn Fungicide Study 2010
Summary data
Disease Levels %
6
3
0
3.6
2.2
2.3
2.6
2.5
2.4
3
1.7
1.7
1.9
1.8
2
Treatment
Check
Headline 6 oz
Headline 9 oz
Quilt Xcel 14 oz
Stratego 10 oz
Stratego Yield 5 oz
LSD 0.05 = .45
DeKalb DKC 61-21
Pioneer 1184XR
Variety


Kane County Corn Growers Corn Fungicide Study 2010
First Year Corn
Yield Bushels/acre
230
225
220
215
210
DeKalb DKC 61-21
Pioneer 1184XR
Variety
Treatment
Check
Headline 6 oz
Headline 9 oz
Quilt Xcel 14 oz
Stratego 10 oz
Stratego Yield 5 oz
LSD 0.05 = 9.6


Kane County Corn Growers Corn Fungicide Study 2010
Continuous Corn
Yield Bushels/acre
215
210
205
200
195
190
185
180
DeKalb DKC 61-21
Pioneer 1184XR
Variety
Treatment
Check
Headline 6 oz
Headline 9 oz
Quilt Xcel 14 oz
Stratego 10 oz
Stratego Yield 5 oz
LSD 0.05 = 14.2


Kane County Corn Growers Corn Fungicide Study
2008-2010 Summary data
Yield Bushels/acre
220
215
210
205
200
195
209.7
216.7
216.7
214.9
Fungicide Treatment & Rate
Treatment
Check
Headline 6 oz
Headline 9 oz
Stratego 10 oz
LSD 0.05 = 6.5


Kane County Corn Growers Corn Fungicide Study
2008-2010 Summary data
Disease Levels %
10
5
0
5.1
2.5
2.8
3.5
Fungicide Treatment & Rate
Treatment
Check
Headline 6 oz
Headline 9 oz
Stratego 10 oz
LSD 0.05 = 1.11%