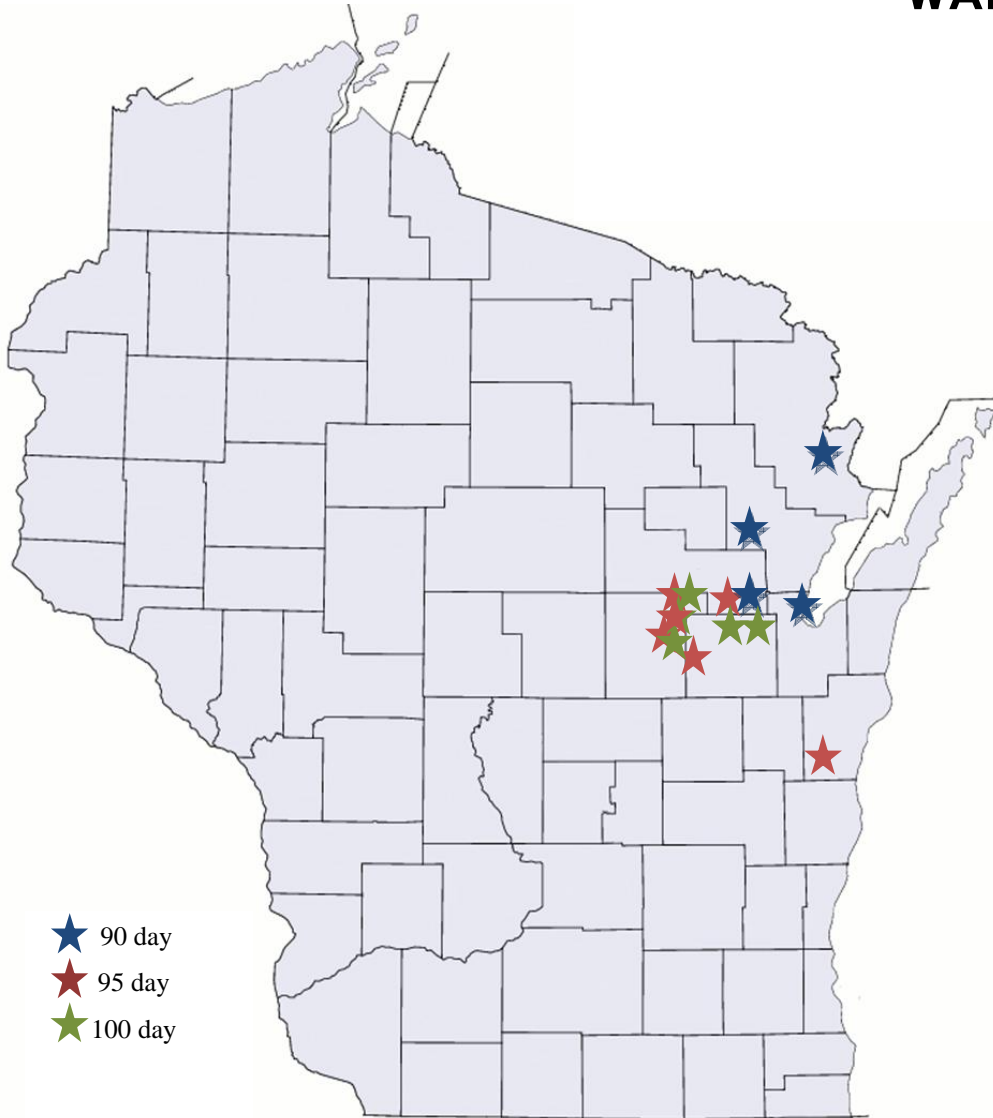


**Wisconsin On-Farm Testing  
WAPAC Corn Trials  
2015**



**Wisconsin Association of Professional Ag Consultants  
University of Wisconsin – Extension  
*Independent, Replicated, On-Farm Research***

## **2015 WAPAC Corn Performance Trials**

*2015 Data Analyzed and Compiled by Jon Baldock, PhD (Baldock Statistical Services, Oregon, WI) in cooperation with the Wisconsin Association of Professional Ag Consultants (WAPAC)*

### **Introduction**

Before the time of universities, industry research programs or crop consultants, farmers implemented changes in their production practices through a myriad of methods with some success. The process of incremental change and gradual improvements has evolved into an impressive system of research, development and production never imagined just decades ago. This production system, while impressive and productive can attribute much of its success on the recurring question asked by the farmer: "What am I going to do differently next season?"

The answer to the question hopefully results in an improvement of efficiency and profitability that is real and a result of the changes implemented. Our production system is dependent on selecting the inputs and operations that achieve a desired outcome. The process of testing a hypothesis and using the information gained in a cooperative, systematic manner has been highly successful in providing viable options for producing food, feed and fiber on the farm. However, that success has created what can be a bewildering mix of options that leave the farmer and farm advisor struggling with the answer to the question above. As a result, the Wisconsin Association of Professional Agricultural Consultants (WAPAC) and UW-Extension have worked together with farm clients across the state to develop a network for the purpose of conducting applied research trials.

This network consists of crop consultants, local and statewide extension faculty and most importantly farmers cooperating in a coordinated effort across Wisconsin. The objective of this program is to evaluate new technologies and management practices. Trials are conducted across a wide range of environments and management schemes in replicated plots using production scale equipment. This publication summarizes the results of on-farm hybrid trials conducted during 2015.

Identifying the source of variability in yield is a primary objective in any hybrid trial. The use of statistical methods including replication and means comparisons improves the reliability and confidence of results and outcome from the implemented practice. On-farm testing with field scale equipment has traditionally been used for demonstration in non-replicated trials. An overriding strength of on-farm evaluations is the credibility of the results in the eyes of the end user, the farmer by showing how the practice responds within his production system. Often the power of these trials can be enhanced with simple modifications such as replication within locations and across multiple sites with coordinated effort. That coordination is what the membership of WAPAC and UW Extension provide in the execution of the trials. The advent of effective tools for collecting data related to crop production such as weigh wagons, on farm scales and yield monitors have removed many of the traditional barriers of on-farm trials. The increased incidence of having a trained specialist such as a crop consultant on the farm enables the coordination of multi-site evaluations that address production concerns in a real time manner. The evolution of all components of the production process will likely increase the need for more on-farm data collection and analysis as agriculture moves into the future. Collaborative efforts such as this will be necessary to utilize the wealth of information residing in the data collected at the farm.

### **Methodology of the On-Farm Trials**

A recognized strength of field scale on-farm trials is the low coefficient of variability achieved within this type of trial as compared to smaller traditional field research trials. The coefficient of variability (CV) can be looked as a measure of quality of the trial itself. By reducing or addressing the variability of sites or practices within a trial, one can better evaluate the treatment effects of the trait or practice being tested. The use of randomization, replication and thoughtful plot layout help improve the quality of information gleaned from the trial. The WAPAC Hybrid Trials use a minimum of 2 replications for each site and

treatments (hybrids) are randomly placed within each replication. Plots are planted across sources of variability such as soil types or slopes to provide somewhat uniform representation of these sources within each replication. The plots are planted and harvested with field scale equipment. Individual plot sizes for hybrid trials are typically 6 to 12 rows wide and run distances of 500 to over 1000 feet in length. Data and observations are collected throughout the growing season and utilized in the analysis when appropriate. Information identifying plot locations, production inputs, site characteristics along with other supporting information is systematically collected and recorded in a database format to facilitate user queries and data archival.

## Using the Results

Coupling the information from this publication with the UWEX Hybrid Corn Performance Trials as well as other hybrid performance trials will give the user the ability to evaluate how a particular hybrid performs in multiple environments. Predicting the performance of a hybrid in the future is done through analysis of past performance. A primary factor in the prediction is the number of locations or replications of a hybrid. This trial typically provides 6 to 12 or more replications of a hybrid at 3 to 6 locations across the state.

The results are reported in Yield per acre and Grower return.

**Gross Margin = Gross Income - drying cost - test weight dockage**, where

**Gross Income** is the yield times \$3.44/bu, and

**Drying cost** is 2.0¢/bu wet corn for each point above 15%, and

**Test weight dockage** is

2¢/lb/bu from 53.9 to 52

3¢/bu from 51.9 to 50

5¢/bu for each lb/bu below 50 lbs/bu,

Assuming drying the grain adds 1 lb/bu to the test weight.

The data tables contain the number labeled "LSD" which stands for least significant difference. LSD's at the 10% level of probability are shown. Where the difference between two selected treatments within a column is equal to or greater than the LSD value at the bottom of the column, you can be sure that in nine out of ten chances that there is a real difference between the two treatment averages. If the difference is less than the LSD value, the difference may still be real, but the experiment has produced no evidence of real differences.

Statistics are a tool to help prevent us from deceiving others and ourselves. Growing conditions in any particular year can have large effects on certain practices. Two years of replicated data are a minimum for supporting most practices. On-farm testing is not a quick cure for anything, but it should greatly accelerate innovation and adoption of new practices by providing reliable, quantitative answers that apply directly to a producer's situation. Treatments frequently differ in performance and these differences may vary with management practices, weather patterns, soil conditions, and other environmental and management practices. Replicated trials that take into account field variability are more reliable than non-replicated trials and improve the confidence of implementing of new practices for profitable crop production.

*(Written by Bill Stangel and Joe Lauer, WAPAC Executive Council Members, December 2003. Corn price and drying cost updated for 2015)*

## WAPAC Trial Information: 90 day

Location	tri_id	Planting Date	Fall and	Soil test	Fertilizer (lb/a)	Weed
Cooperator	Soil series	Row width	Spring Tillage	pH P K	N P K	Control
Consultant	Soil texture	Population	Cultivation	---ppm---	Micro + Manure	
Crivitz, WI Dudkiewicz Farms Bill Schaumberg	<b>Irrigated</b> 901 Menahga Sand	Corn 4/29/2015 10/27/2015 30 30,000	No Till	6.4 62 70	213 34 73	Glyphosate 1 qt Warrant 1 qt Laudis 3 fl oz
Green Bay, WI NEW Day Grain Phil Stern	902 Onaway	Soybeans 4/30/2015 11/16/2015 30 32,000	Spring Vertical Tillage	7.1 21 95	218 36 23	Lumax 2 qt
Pulaski, WI Phil Ullmer Nate Nysse	903 Alfalfa Manawa Silty Loam	5/16/2015 11/18/2015 30 33,000	Spring Chisel Spring Disk Spring Cultivator	7.6 49 139	206 16 5	SureStart 1.5 qt Clear Out 1 qt
Pulaski, WI Wilkey Farms Phil Stern	904 Corn Onaway	5/24/2015 12/10/2015 30 32,000	Fall V Rip Spring Disk	7.4 26 123	148 27 34	Lumax 2 qt

WAPAC 2015 Corn Trials: 90-day Relative Maturity Data.

Means of five hybrids across three locations.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Dekalb	DKC39-27RIB	30917 *	0.0 *	56.0 *	18.4 *	198 *	595 *
Pioneer	P9188AMX	30667	0.3 *	55.8 *	18.5 *	191 *	573 *
Dairyland	DS-9791RA	31208 *	1.0	54.5	19.1 *	191 *	568 *
PIP	3190 VIP3220EZ	30542	0.3 *	53.9	19.4 *	187 *	555
Renk	RK302GT	30542	0.3 *	54.3	19.2 *	186	550
Number of locations		3	3	3	3	3	3
Total number of replications		6	6	6	6	6	6
Mean		30775	0.4	54.9	18.9	191	568
LSD(10%)		359	0.7	1.0	1.2	11	33

Means of four hybrids across four locations.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Dekalb	DKC39-27RIB	29750 *	0.0 *	55.4 *	18.9 *	175 *	518 *
Pioneer	P9188AMX	29500 *	0.3 *	55.3	19.2 *	176 *	518 *
Dairyland	DS-9791RA	29594 *	0.8	53.9 *	19.9	173 *	507 *
Renk	RK302GT	29281 *	0.3 *	53.4	20.0	170 *	499 *
Number of locations		4	4	4	4	4	4
Total number of replications		8	8	8	8	8	8
Mean		29531	0.3	54.5	19.5	173	510
LSD(10%)		578	1	1	1	12	38

† Means followed by a star are not significantly different than the "best" at the 10% level of significance. The "best" is the maximum value for all measures except lodged and moisture, where the "best" value is the minimum value.

‡ Gross Margin = Gross Income - drying cost - test weight dockage, where  
 Gross Income is the yield times \$3.44/bu,  
 drying cost is 2¢/bu wet corn for each half-point above 15%, and  
 test weight dockage is 2¢/lb/bu from 53.9 to 52; 3¢/lb/bu from 51.9 to 50; and 5¢/lb/bu below 50 lb/bu.

WAPAC 2015 Corn Trials: 90-day Relative Maturity Yields by Location.

Five hybrids at three locations.

Brand	Hybrid	Location Yield, bu/a @ 15% moisture		
		902 Green Bay	903 Pulaski	904 Pulaski
Dairyland	DS-9791RA	195	194	184
Dekalb	DKC39-27RIB	208	198	187
Pioneer	P9188AMX	198	177	198
PIP	3190 VIP3220EZ	192	182	187
Renk	RK302GT	196	178	184
Mean		198	186	188
Reps		2	2	2

Four hybrids at four locations.

Brand	Hybrid	Location Yield, bu/a @ 15% moisture			
		901 Crivitz Irrigated	902 Green Bay	903 Pulaski	904 Pulaski
Dairyland	DS-9791RA	119	195	194	184
Dekalb	DKC39-27RIB	106	208	198	187
Pioneer	P9188AMX	129	198	177	198
Renk	RK302GT	124	196	178	184
Mean		120	199	187	188
Reps		2	2	2	2

## WAPAC Trial Information: 95 day

Location	tri_id	Soil series	Previous crop	Planting Date	Row width	Harvest Date	Fall and Spring Tillage	Soil test	Fertilizer (lb/a)	Weed Control
Cooperator	Soil texture	Population						pH P K	N P K	
Consultant								---ppm---	Micro + Manure	
Bonduel, WI Hillside Farms Phil Stern	951	Alfalfa		5/14/2015	30	11/27/2015	No Till	7.2 21 87	65 25 65	Roundup 1 qt (2X) Basis Blend .4 oz 2-4-D Ester 1 pt
Clintonville, WI Paul Kirchner Mike Kiddy	952	Alfalfa		5/18/2015	30	11/25/2015	No Till	6.9 21 59	160 30 0	Staunch 2 pt Credit Extra 1 qt Dicamba 2oz, ATZ 9-0 3/4 lb
Hortonville, WI Steve Jack Paul Knutzen	953	Soybeans		5/8/2015	30	11/10/2015	Fall Chisel Spring Drag	7.1 28 97	180 19 60 30S	Flexstar 1 qt Harness Extra 1 qt Roundup 1 qt
Manawa, WI Dairy-Licous Farms Nathen Nysse	954	Soybeans		5/24/2015	30	11/18/2015	No Till	6.2 14 49	147 23 92	Glyphosate 1qt Staunch 2.5pts Dual II Magnum 1pt
Manawa, WI Fietzer Dairy Farms Nathen Nysse	955	Corn Silage		5/20/2015	30	11/3/2015	Spring Chisel Cultivator 2x	7 24 121	206 100 304	Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
St Nazianz, WI Mark Litz Steve Hoffman	956	Soybeans		5/6/2015	30	10/20/2015	Fall Chisel Spring Field Cultivator 2X	7.2 20 118	145 29 125 14S 6542 gal manure	Staunch 1.2 pt Glyphosate 1 qt Yukon 4 oz

WAPAC 2015 Corn Trials: 95-day Relative Maturity Data.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Dekalb	DKC 45-65RIB	32325 *	0.1 *	54.0	20.5 *	185 *	541 *
Pioneer	P9644AMX	32000 *	0.2 *	55.1 *	22.2	180 *	509
Renk	RK544SSTX	32075 *	0.3 *	54.2 *	20.9 *	174	501
PIP	4097 VIP3111	31500	0.9	53.4	22.8	172	483
Number of locations		5	6	6	6	6	6
Total number of replications		10	12	12	12	12	12
Mean		31975	0.4	54.2	21.6	178	509
LSD(10%)		677	0.6	1.0	0.9	6	19

† Means followed by a star are not significantly different than the "best" at the 10% level of significance. The "best" is the maximum value for all measures except lodged and moisture, where the "best" value is the minimum value.

‡ Gross Margin = Gross Income - drying cost - test weight dockage, where  
 Gross Income is the yield times \$3.44/bu,  
 drying cost is 2¢/bu wet corn for each half-point above 15%, and  
 test weight dockage is 2¢/lb/bu from 53.9 to 52; 3¢/lb/bu from 51.9 to 50; and 5¢/lb/bu below 50 lb/bu.



WAPAC 2015 Corn Trials: 95-day Relative Maturity Yields by Location.

		Location Yield, bu/a @ 15% moisture					
Brand	Hybrid	951 Bonduel	952 Clintonville	953 Hortonville	954 Manawa	955 Manawa	956 St. Nazianz
Dekalb	DKC 45-65RIB	197	183	180	159	209	183
Pioneer	P9644AMX	181	174	175	163	195	175
PIP	4097 VIP3111	199	160	175	138	201	179
Renk	RK544SSTX	160	164	169	153	196	182
Mean		184	170	175	153	200	180
Reps		2	2	2	2	2	2

## WAPAC Trial Information: 100 day

Location	tri_id	Planting Date	Fall and	Soil test	Fertilizer (lb/a)	Weed
Cooperator	Soil series	Row width	Spring Tillage	pH P K	N P K	Control
Consultant	Soil texture	Population	Cultivation	---ppm---	Micro + Manure	
Black Creek, WI Roger & Joan Seitz Bill Schaumberg	1001 Hortonville Sandy Loam	Corn 30 32,500	5/6/2015 11/17/2015 Fall Chisel Cultivator 2x	7.5 21 116 155 0 122		Parralel 1.3 pt Hornet WDG 3 oz Atrazine 1/2 lb Glyphosate 1 qt
Clintonville, WI Doug Behnke Mike Kiddy	1002 Hortonville Silt Loam	Corn 30 34,000	5/9/2015 10/30/2015 Field Cultivator 2X	7.7 96 254 158 90 216	1.2S	Volley Lite 0.75 pt Staunch 2 pt Credit Extra 0.75 qt, ATZ 1.5 pt
Manawa, WI Fietzer Dairy Farms Nathen Nysse	1003 Hortonville Silt Loam	Corn Silage 30 35,000	5/20/2015 11/3/2015 Spring Chisel Cultivator 2x	7 24 121 206 100 304		Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
New London, WI Larry Danke Paul Knutzen	1004 Hortonville	Soybeans 30 31,000	5/5/2015 10/22/2015 No Till	7.2 14 116 142 9 95		SureStart 1.5 pt Volley Lite 1.5 pt Roundup Ultra Max 28 oz
Seymour, WI Pat/Karen Van Lanen Jeff Polenske	1005 Solona Loam	Alfalfa 30 35,700	4/28/2015 10/3/2015 Fall Chisel Field Cultivator 2X	7.3 27 130 224 80 198		Lumax 1.75 qts

WAPAC 2015 Corn Trials: 100-day Relative Maturity Data.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
PIP	PIP 4400-3011A	32125 *	0.6 *	54.0 *	23.7 *	202 *	567 *
Dekalb	DKC 50-82RIB	31125	0.0 *	52.6	23.7 *	194 *	548 *
Pioneer	P0157 AMX	32000 *	0.0 *	52.9	26.1	200 *	545 *
Renk	RK629VT3P	31875 *	0.0 *	54.4 *	23.2 *	191	536
Number of locations		4	5	5	5	5	5
Total number of replications		8	10	10	10	10	10
Mean		31781	0.1	53.5	24.2	197	549
LSD(10%)		799	0.7	0.7	1.6	11	28

† Means followed by a star are not significantly different than the "best" at the 10% level of significance. The "best" is the maximum value for all measures except lodged and moisture, where the "best" value is the minimum value.

‡ Gross Margin = Gross Income - drying cost - test weight dockage, where  
 Gross Income is the yield times \$3.44/bu,  
 drying cost is 2¢/bu wet corn for each half-point above 15%, and  
 test weight dockage is 2¢/lb/bu from 53.9 to 52; 3¢/lb/bu from 51.9 to 50; and 5¢/lb/bu below 50 lb/bu.

WAPAC 2015 Corn Trials: 100-day Relative Maturity Yields by Location.

		Location Yield, bu/a @ 15% moisture				
Brand	Hybrid	1001 Black Creek	1002 Clintonville	1003 Manawa	1004 New London	1005 Seymour
Dekalb	DKC 50-82RIB	195	196	198	182	202
Pioneer	P0157 AMX	211	190	209	168	224
PIP	PIP 4400-3011A	218	195	198	177	221
Renk	RK629VT3P	201	180	210	152	212
Mean		206	190	204	170	215
Reps		2	2	2	2	2

# **Thank you to everyone who contributed to the success of the 2015 WAPAC Corn Trials!**

## ***Data Analysis***

Dr. Jon Baldock, Research Director, Baldock Statistical Services, Oregon, Wisconsin

## ***Seed Company Sponsors***

Dairyland Seed – Boyd Hoffman

Dekalb/Monsanto- Mike Weiss

Partners in Production- Jack Kaltenberg

Pioneer – Ryan Bates

Renk Seed- Bob Wilms & Jeff Renk

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- 90-day: Wilkey Farms, Pulaski, WI
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- 95-day: Hillside Farms, Bonduel, WI

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Links to the WAPAC Corn Trails are available on the WAPAC website: [www.wapac.info](http://www.wapac.info) under the Corn Trials tab



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