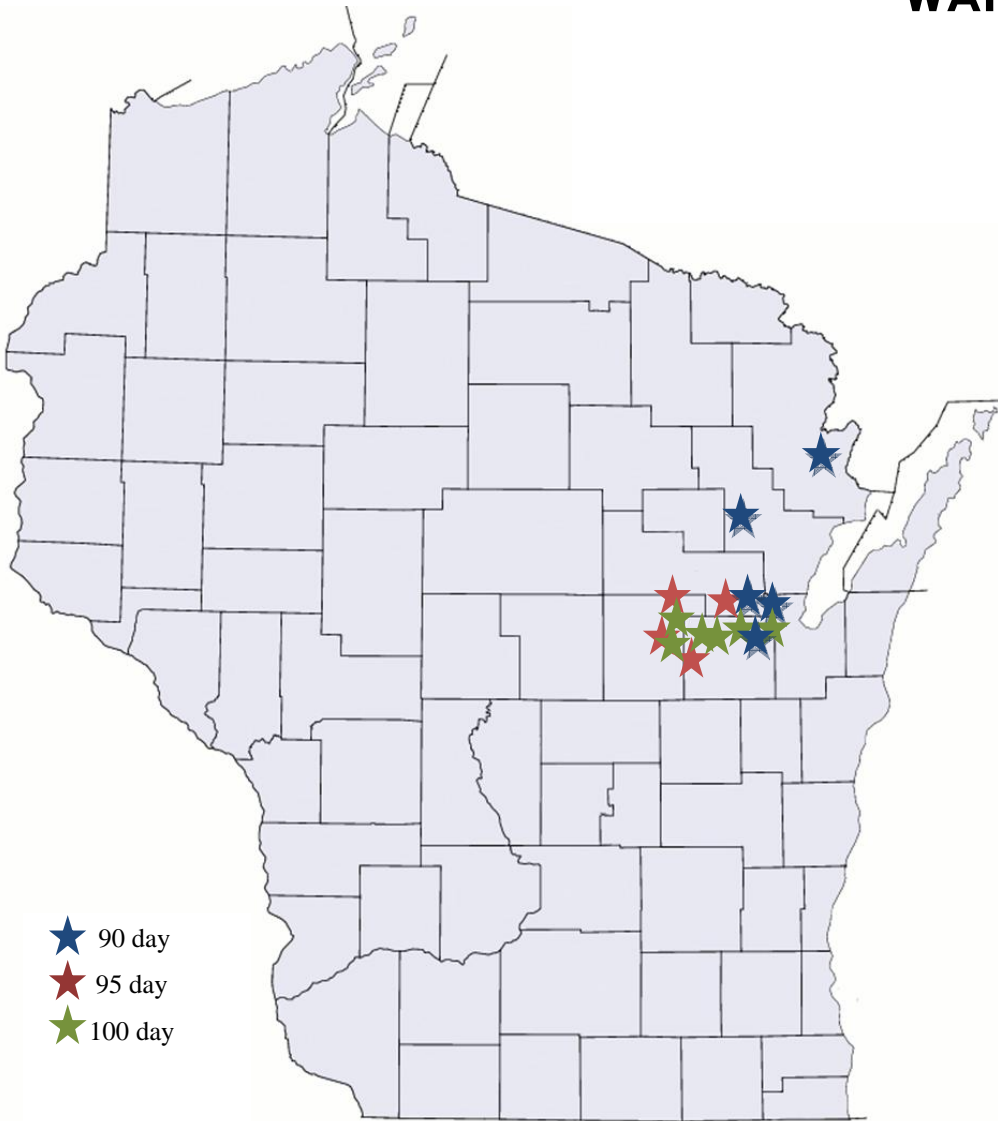


**Wisconsin On-Farm Testing  
WAPAC Corn Trials  
2016**



- ★ 90 day
- ★ 95 day
- ★ 100 day

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

## 2016 WAPAC Corn Performance Trials

*2016 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 2016.

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 \$3.11/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 2016)*

## WAPAC Trial Information: 90 day

Location	tri_id	Previous	Planting Date	Harvest Date	Fall and Spring Tillage	Soil test	Fertilizer (lb/a)	Weed Control
Cooperator	Soil series	crop	Row width	Population	Cultivation	pH P K	N P K	
Consultant	Soil texture					---ppm---	Micro + Manure	
Bonduel, WI	901	Corn	5/15/2016	11/26/2016	Fall chisel	7.5 22 79	70 45 60	Capreno 3 oz
McClone Farms			30		Field Cultivator 2X		12S	Roundup 1 qt
Phil Stern			31,500					Atrazine .5 #
Crivitz, WI	<b>Irrigated</b> 902	Wheat	5/10/2016	10/18/2016	No Till	6.7 30 57	208 78 137	<b>Burndown:</b>
Dudkiewicz Farms	Mancelona		30					Buccaneer Plus 32oz
Bill Schaumberg	Loamy Sand		30,000					Aim 1/2oz
								AMS 1.5# NIS 3.2oz
								<b>Early Post:</b>
								Roundup Power Max 22oz
								Atrazine 0.5#
								Sure Start 24oz
								AMS 1.5# NIS 3.2oz
Pulaski, WI	903	Corn	5/15/2016		Spring Chisel	7.8 25 72	206 16 5	SureStart 1.5 qt
Phil Ullmer	Manawa		30		Spring Disk			Clear Out 1 qt
Nate Nysse	Silty Loam		33,000		Field Cultivator			
Seymour, WI	904	Soybeans	5/20/2016	11/8/2016	Fall chisel	7.4 9 66	147 30 71	SureStart 1.5 pt
Oneida Nation Farms	Hortonville		30		Field Cultivator			RoundUp Pmax 22 oz
Bill Schaumberg	Silt Loam		34,000					
Suring, WI	905	Soybeans	5/7/2016	11/14/2016	Fall chisel	6.5 207 122	140 24 64	Dual 1.3 pt
Brad Christiansen	Shawano		30		Field Cultivator			Hornet WDG 1 oz
Bill Schaumberg	Sand		34,000					Atrazine 1 pt
								Glyphosate 1 qt

WAPAC 2016 Corn Trials: 90-day Relative Maturity Data.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Steyer	9203VT2PRIBC	23563 *	0.1 *	56.1 *	19.5	202 *	534 *
Great Lakes	GL4250SXTRIB	24063 *	0.0 *	55.1	18.6	193 *	517 *
Dekalb	DKC 39-27	23875 *	0.4 *	55.2	18.3	193 *	517 *
PIP	PIP 4693-3110A	19713	0.1 *	56.7 *	19.4	195 *	511 *
Munson	5033-3111	23000 *	0.5	53.7	18.0 *	178	479
Number of locations		4	4	5	5	5	5
Total number of replications		8	8	10	10	10	10
Mean		22843	0.2	55.4	18.7	192	512
LSD(10%)		4001	0.4	1.2	0.4	13	35

† 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 \$3.11/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  
 assuming a 1 lb/bushel increase in the drying process.

WAPAC 2016 Corn Trials: 90-day Relative Maturity Yields by Location.

		Location Yield, bu/a @ 15% moisture				
Brand	Hybrid	901 Bonduel	902 Crivitz	903 Pulaski	904 Seymour	905 Suring
Dekalb	DKC 39-27	186	197	196	187	200
Great Lakes	GL4250SXTRIB	203	196	200	161	207
Munson	5033-3111	145	195	189	170	193
PIP	PIP 4693-3110A	169	213	202	181	209
Steyer	9203VT2PRIBC	199	209	203	185	216
Mean		180	202	198	177	205
Reps		2	2	2	2	2

## WAPAC Trial Information: 95 day

Location	tri_id		Planting Date		Fall and	Soil test			Fertilizer (lb/a)			Weed
Cooperator	Soil series	Previous	Row width	Harvest Date	Spring Tillage	pH	P	K	N	P	K	Control
Consultant	Soil texture	crop	Population		Cultivation	---ppm---			Micro + Manure			
Clintonville, WI Paul Kirchner Mike Kiddy	951 Hortonville	Soybeans	5/18/2016 30 32,000	11/2/2016	Turbo Till (2X)	7	18	94	167	66	90	Staunch 2.25 pt Credit Extra 1 qt Dicamba 2oz, AMS 3 Lbs
Hortonville, WI Steve Jack Paul Knutzen	952 Hortonville	Soybeans	5/7/2016 30 34,000	11/14/2016	Fall Chisel Spring Field Cultivater	7.5	29	181	167	19	60	Flexstar 1 qt Harness Extra 1 qt Roundup 1 qt
Manawa, WI Fietzer Dairy Farms Nathen Nysse	953 Hortonville Silt Loam	Corn Silage	5/15/2016 30 35,000	11/3/2016	Spring Vertical Tillage	6.9	136	261	9	11	13	Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
Shawano, WI NEW Day Grain Phil Stern	954 Onaway	Soybeans	5/2/2016 30 32,000	11/26/2016	Spring Vertical Tillage	6.9	22	109				Lumax 2 qt Roundup 22 oz Status 2 oz

WAPAC 2016 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 45-65	31125		56.2 *	18.1 *	228 *	774 *
Great Lakes	GL 4548 STX RIB	32500 *		55.2	18.1	223 *	767 *
Munson	5581VT3P	32417 *		57.0 *	17.7 *	212	726 *
NK	N36G-3010	32016 *		56.5 *	18.5	208	712
Steyer	9301 GENSSRIBC	30139		55.8 *	17.9 *	203	684
PIP	PIP 4597 GTCBLL	32861 *		56.0 *	19.2	205	679
Number of locations		3		3	4	4	4
Total number of replications		6		6	8	8	8
Mean		31890		56.1	18.2	213	724
LSD(10%)		1568		1.4	0.4	14	57

† 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 \$3.11/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  
 assuming a 1 lb/bushel increase in the drying process.

§ Only includes test weight dockage for three sites.



WAPAC 2016 Corn Trials: 95-day Relative Maturity Yields by Location.

		Location Yield, bu/a @ 15% moisture			
Brand	Hybrid	951 Clintonville	952 Hortonville	953 Manawa	954 Shawano
Dekalb	DKC 45-65	216	231	234	229
Great Lakes	GL 4548 STX RIB	225	227	224	217
Munson	5581VT3P	213	217	191	225
NK	N36G-3010	219	211	191	213
PIP	PIP 4597 GTCBLL	191	217	217	193
Steyer	9301 GENSSRIBC	188	209	216	200
Mean		209	219	212	213
Reps		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	Previous	Row width	Harvest Date	Spring Tillage	pH	P	K	N	P	K	Control
Consultant	Soil texture	crop	Population		Cultivation	---ppm---			Micro + Manure			
Black Creek, WI Roger & Joan Seitz Bill Schaumberg	1001 Hortonville Sandy Loam	Corn	5/17/2016 30 32,000	11/9/2016	Fall Chisel	7.7	27	147	176	47	267	Parralel 1 pt Hornet WDG 1.5 oz Atrazine 1/2 lb Glyphosate 1 qt
Manawa, WI Fietzer Dairy Farms Nathen Nysse	1002 Hortonville Silt Loam	Corn Silage	5/15/2016 30 35,000	11/3/2016	Spring Vertical Tillage	6.9	136	261	9	11	13	Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
New London, WI Larry Danke Paul Knutzen	1003 Hortonville	Soybeans	5/6/2016 30 31,000	11/9/2016	No Till	7.8	114	65	142	9 28S	95	SureStart 1.5 pt Volley Lite 1.5 pt Roundup Ultra Max 28 oz
New London, WI Madden Farms Mike Kiddy	1004 Hortonville	Corn	5/18/2016 30 34,000	10/18/2016	No Till	6.4	51	75	160	128	336	Volley ATZ Lite 1.5 pt Staunch 1.5 pt AMS 3 #
Oneida, WI Robertson Bros Jeff Polenske	1005 Hortonville Loam	Fallow	5/8/2016 30 34,000	11/1/2016	Fall Chisel Field Cultivator 2X	6.9	20	85	140	84	238	Aceron 2 qts

WAPAC 2016 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†,‡
Dekalb	DKC 49-72	32117 *	0.0 *	54.8	19.7 *	233 *	625 *
PIP	PIP 4400 GTA	32275 *	5.0 *	54.9	19.7 *	221	590
Great Lakes	GL4879STXRIB	32475 *	3.5 *	55.0	20.3 *	220	580
Munson	6048SS	32083 *	4.0 *	56.1 *	20.0 *	215	569
Steyer	10303GENSSRIB	31425 *	6.5 *	54.8	21.6	219	566
Number of locations		5	1	6	6	6	6
Total number of replications		10	2	12	12	12	12
Mean		32075	3.8	55.1	20.2	222	586
LSD(10%)		1558	6.5	0.9	0.9	8	21

† 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 \$3.11/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  
 assuming a 1 lb/bushel increase in the drying process.

WAPAC 2016 Corn Trials: 100-day Relative Maturity Yields by Location.

		Location Yield, bu/a @ 15% moisture					
Brand	Hybrid	1001 Black Creek	1002 Manawa	1003 New London	1004 New London	1005 Oneida	1006 Seymour
Dekalb	DKC 49-72	237	237	232	216	232	247
Great Lakes	GL4879STXRIB	215	213	210	215	225	242
Munson	6048SS	211	222	215	206	218	220
PIP	PIP 4400 GTA	225	235	216	194	221	237
Steyer	10303GENSSRIB	215	221	216	211	208	246
Mean		220	225	218	208	221	238
Reps		2	2	2	2	2	2

# **Thank you to everyone who contributed to the success of the 2016 WAPAC Corn Trials!**

## ***Data Analysis***

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

## ***Seed Company Sponsors***

Dekalb/Monsanto- Mike Weiss  
Great Lakes Hybrids- Jeff Huebner  
Munson Hybrids- Ryan Singler  
NK- Syngenta- John Crispin  
Partners in Production- Jack Kaltenberg  
Steyer Seeds- Mike Haedt

## ***On-Farm Trial Coordinators and Participating Growers***

Mike Kiddy – Kiddy Crop Consulting, New London, WI

- 95-day: Paul Kirchner, Clintonville, WI
- 100-day: Madden Farms, New London, WI

Paul Knutzen – Knutzen Crop Consulting, New London, WI

- 95-day: Steve Jack, Hortonville, WI
- 100-day: Larry Danke, New London, WI

Nathen Nysse – Tilth Agronomy, Hortonville, WI

- 90-day: Phil Ullmer, Pulaski, WI
- 95-day: Fietzer Dairy Farms, Manawa, WI
- 100-day: Fietzer Dairy Farms, Manawa, WI

Jeff Polenske – Tilth Agronomy, Appleton, WI

- 100-day: Robertson Bros., De Pere, WI
- 100-day: Pat & Karen Van Lanen, Seymour, WI

Bill Schaumberg – Tilth Agronomy, De Pere, WI

- 90-day: Brad Christiansen, Suring, WI
- 90-day: Dudkiewicz Farms, Crivitz, WI
- 90-day: Oneida Nation Farms, Seymour, WI
- 100-day: Roger and Joan Seitz, Black Creek, WI

Phil Stern – Stern Crop Consulting, Bonduel, WI

- 90-day: Mc Clone Farms, Bonduel, WI
- 95-day: NEW Day Grain, Shawano, WI

## ***WAPAC Research Chair***

Bill Schaumberg, Tilth Agronomy, De Pere, WI  
Phone: 920-475-3312  
E-Mail: [bill@tilthag.com](mailto:bill@tilthag.com)

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



WISCONSIN ASSOCIATION OF PROFESSIONAL  
AGRICULTURAL CONSULTANTS