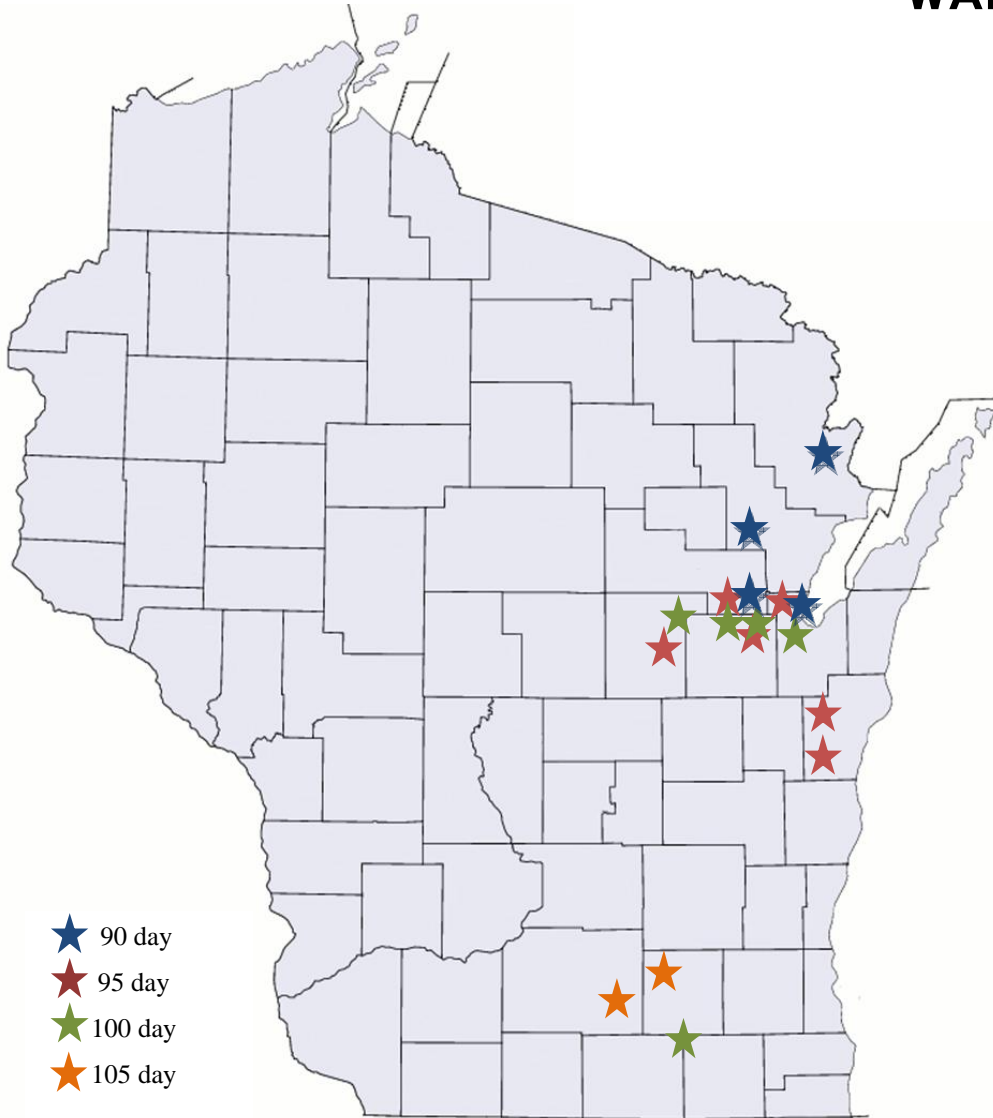


**Wisconsin On-Farm Testing  
WAPAC Corn Trials  
2014**



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

## **2014 WAPAC Corn Performance Trials**

*2014 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 2014.

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 \$3.36/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 2014)*

## WAPAC Trial Information: 90 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			
Bonduel, WI	901	Corn	5/25/2014	12/12/2014	Fall Chisel	6.9	23	112				Lumax 2 qt
Hillside Farms	Onaway		30		Spring Field							Roundup 22 oz
Phil Stern			32,000		Cultivate 2X							
Crivitz, WI	<b>Irrigated</b> 902	Corn	5/19/2014	11/19/2014	No Till	6.8	53	75	179	59	111	Glyphosate 1 qt
Dudkiewicz Farms	Menahaga		30									Warrant 1 qt
Bill Schaumberg	Sand		30,000									Laudis 3 fl oz
Gillett, WI	903	Wheat	5/19/2014	12/4/2014	Zone Till	5.9	60	103	129	32	0	Dual 1 pt
Tim Fifield	Menominee		30									ResolveQ 1 oz
Bill Schaumberg	Loamy Sand		30,000									Status 4 oz
Pulaski, WI	904	Soybeans		12/19/2014	Spring Disk	7.7	21	68	139	16	66	SureStart 1.5 pt
Phil Ullmer	Yahara		30		Spring Field							Clear Out 1 qt
Nathen Nysse	Silt Loam		32,000		Cultivate							

WAPAC 2014 Corn Trials: 90-day Relative Maturity Data - Means Across Locations.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Dekalb	DKC38-04RIB	30000 *	0	§ 49.2 *	24.1 *	140 *	388 *
Golden Harvest	G93H90GT	28333 *	5	§ 47.2	25.5	132 *	371 *
Dairyland	DS-9791RA	30167 *	5	§ 47.6	29.2	135 *	358 *
PIP	PIP 3287-3000GT	29083 *	10	§ 48.7 *	24.5 *	126	345
Number of locations		3	1	4	4	4	4
Total number of replications		6	2	8	8	8	8
Mean		29396	5	48.2	25.8	133	366
LSD(10%)		2053	§	0.9	1.4	11	36

† 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 \$3.36/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.

§ Insufficient variation to estimate LSD(10%).

**WAPAC 2014 Corn Trials: 90-day Relative Maturity Yields by Location.**

**Four hybrids at four locations.**

Brand	Hybrid	Location Yield, bu/a @ 15% moisture			
		901 Bonduel	902 Crivitz Irrigated	903 Gillett	904 Pulaski
Dairyland	DS-9791RA	126	133	177	104
Dekalb	DKC38-04RIB	131	139	176	112
Golden Harvest	G93H90GT	134	116	160	119
PIP	PIP 3287-3000GT	122	113	156	112
Mean		128	125	168	112
Reps		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			
Bonduel, WI New Day Grain Phil Stern	951 Onaway	Soybeans	5/17/2014 30 32,000	1/3/2015	Vertical Till	6.9	19	109				Lumax 2 qt Roundup 22 oz
Manawa, WI Fietzer Dairy Farms Nathen Nysse	952 Hortonville Silt Loam	Corn Silage	5/25/2014 30 35,000	10/27/2014	Spring Chisel Field Cultivator 2x	6.9	135	165	208	67	371	Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
Pulaski, WI Lardinois Farms Jeff Polenske	953 Hortonville Loam	Soybeans	6/6/2014 30 34,000	12/19/2014	Spring Chisel Spring Field Cultivate 2X	7.8	12	69	125	82	209	Lumax 2 qt
Reedsville, WI Larry Krepline Carl Buchner	954 Kewaunee Loam	Corn	5/24/2014 30 34,000	12/2/2014	Spring Field Cultivator 2X	7.4	11	60				Roundup P Max 22 oz Callisto 1 oz Volley 1 pt Aatrex 4L .5 pt
Seymour, WI Pat/Karen Van Lanen Jeff Polenske	955 Solona Loam	Corn	5/30/2014 30 36,000	11/2/2014	Fall Chisel Spring Field Cultivate 2X	7.3	58	109	192	63	174	Lumax 2 qt
St Nazianz, WI Mark Litz Steve Hoffman	956 Kewaunee	Alfalfa	5/24/2014 30 32,000	11/15/2014	Fall Chisel Disk Spring Field Cultivator 2X	7.5	19	162	248	42	174	Staunch 1.2 pt Glyphosate 1 qt Yukon 4 oz
									6653	gal manure		

WAPAC 2014 Corn Trials: 95-day Relative Maturity Data - Means Across Locations.

Brand	Hybrid	Stand, No./A†	Lodged, %†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Pioneer	P9526AMX	31854 *	1.5 *	50.8 *	27.8 *	171 *	450 *
Dekalb	DKC 44-13	33021 *	0.5 *	50.0	29.1	171 *	447 *
Croplan	3899 VT2P/RIB	31946 *	0.9 *	48.8	31.3	173 *	445 *
PIP	PIP 4097-3000GT	31542	4.1	49.6	29.1	162	423
Dairyland	DS-9694RA	30896	2.7 *	49.9	29.1	146	374
Number of locations		6	5	6	6	6	6
Total number of replications		12	10	12	12	12	12
Mean		31852	1.9	49.9	29.2	165	431
LSD(10%)		1196	3.1	0.7	1.1	9	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 \$3.36/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 2014 Corn Trials: 95-day Relative Maturity Yields by Location.

Five hybrids at six locations.

Brand	Hybrid	Location Yield, bu/a @ 15% moisture					
		951 Bonduel	952 Manawa	953 Pulaski	954 Reedsville†	955 Seymour	956 St. Nazianz
Croplan	3899 VT2P/RIB	180	217	125	164	179	185
Dairyland	DS-9694RA	167	179	124	106	138	160
Dekalb	DKC 44-13	179	214	136	134	184	179
Pioneer	P9526AMX	173	215	143	154	175	174
PIP	PIP 4097-3000GT	164	206	125	134	173	172
Mean		173	206	130	138	170	174
Reps		2	2	2	2	2	2

† Two observations missing; one for Croplan hybrid and one for Pioneer hybrid.

## WAPAC Trial Information: 100 day

Location	tri_id	Previous	Planting Date	Harvest Date	Fall and Spring Tillage Cultivation	Soil test			Fertilizer (lb/a)			Weed Control
Cooperator Consultant	Soil series Soil texture	crop	Row width Population			pH	P	K	N	P	K	
						---ppm---				Micro + Manure		
Black Creek, WI Roger & Joan Seitz Bill Schaumberg	1001 Hortonville Sandy Loam	Corn	5/26/2014 30 32,500	10/31/2014	Spring Field Cultivator 2X	7.5	21	116	186	174	395	Parralel 1.3 pt Hornet WDG 3 oz Atrazine 1/2 lb Glyphosate 1 qt
Clintonville, WI Doug Behnke Mike Kiddy	1002 Hortonville	Alfalfa	5/24/14 30 34,000	11/17/2014		6.9	27	200	163	49	131	Volley .75 pt Transport LPH 1 qt/100 Staunch 2 pt Credit Extra .75 qt Aatrex 4L 1.5 pt
De Pere, WI Robertson Bros Jeff Polenske	1003 Kewaunee Silt Loam	Soybeans	6/9/2014 30 34,000	12/6/2014	Fall Chisel Spring Field Cultivator 2X	7.1	14	80	164	86	97	Lumax 2 qt
Manawa, WI Fietzer Dairy Farms Nathen Nysse	1004 Hortonville Silt Loam	Corn Silage	5/25/2014 30 35,000	10/27/2014	Spring Chisel Field Cultivator 2x	6.9	135	165	208	67	371	Capreno 3 oz Parallel 1 1/3 pt Atrazine 3/4#
New London, WI Larry Danke Paul Knutzen	1005 Hortonville	Corn	5/5/2014 30 31,000	12/5/2014	Fall Chisel Spring Field Cultivate	7.3	22	73	149	13	102	SureStart 2.5 pt Roundup 18 oz
Whitewater, WI Tom Hoffman Tom Novak	1006 St Charles Silt	Soybeans	5/9/2014 30 34,000	11/3/2014	No-till	6.2	16	78	158	60	90	Verdict 15 oz (Pre) Roundup PowerMax 21 oz (Pre) Status 3 oz (Post) Roundup PowerMax 21 oz (Post)

WAPAC 2014 Corn Trials: 100-day Relative Maturity Data - Means Across Locations.

Six hybrids at three locations.

Brand	Hybrid	Stand, No./A†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
AgriGold	A6267STXRIB	29020	49.5 *	27.0	195 *	719 *
Dekalb	DKC 47-35	29270	49.8 *	23.6 *	190 *	718 *
PIP	PIP 4400-3011A	28270	50.2 *	24.7	191 *	715 *
Pioneer	P9917 AMX	31270	51.9 *	22.2 *	189 *	711 *
Croplan	4975 VT3P/RIB	28770	49.9 *	26.4	188 *	702 *
Dairyland	DS-9898RA	30270	49.4 *	28.8	176	627
Number of locations		2	2	3	3	3
Total number of replications		3	3	5	5	5
Mean		28472	49.5	24.7	187	699
LSD(10%)		2329	3.0	2.1	11	50

Three hybrids at six locations.

Brand	Hybrid	Stand, No./A†	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
PIP	PIP 4400-3011A	30779 *	48.6 *	31.5	170 *	531 *
Pioneer	P9917 AMX	32210 *	49.8 *	29.1 *	163 *	516 *
Dairyland	DS-9898RA	30509 *	47.8	33.8	155	470
Number of locations		4	5	6	6	6
Total number of replications		7	9	11	11	11
Mean		31000	48.4	31.6	160	510
LSD(10%)		2038	1.3	2.3	12	37

† 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 \$3.36/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 2014 Corn Trials: 100-day Relative Maturity Yields by Location.

Six hybrids at three locations.

Brand	Hybrid	Location Yield, bu/a @ 15% moisture		
		Danke	Fietzer	Hoffmann
AgriGold	A6267STXRIB	171	203	210
Croplan	4975 VT3P/RIB	160	195	210
Dairyland	DS-9898RA	157	182	188
Dekalb	DKC 47-35	175	197	198
Pioneer	P9917 AMX	175	191	199
PIP	PIP 4400-3011A	162	209	206
Mean		167	196	202
Reps		2	2	2

Three hybrids at six locations.

Brand	Hybrid	Location Yield, bu/a @ 15% moisture					
		Behnke	Danke	Fietzer	Hoffmann	Robertson	Seitz
Dairyland	DS-9898RA	178	157	182	188	88	164
Pioneer	P9917 AMX	177	175	191	199	103	167
PIP	PIP 4400-3011A	113	162	209	206	86	185
Mean		156	165	194	197	92	172
Reps		2	2	1	2	2	2



WAPAC 2014 Corn Trials: 105-day Relative Maturity Data

1051 Elkhorn§.

Hybrid		Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Brand				
Dekalb	DKC54-38	20.3 *	231 *	668 *
Pioneer	P0533AM1	20.7 *	229 *	657 *
PIP	PIP 5405GT	20.8 *	222 *	638 *
Agrigold	A6416STXRIB	21.2 *	224 *	637 *
Number of locations		1	1	1
Total number of replications		2	2	2
Mean		20.7	226	650
LSD(10%)		2.3	15	57

1052 Lake Mills§.

Brand	Hybrid	Test Weight, lbs/bu†	Grain Moisture, %†	Yield, Bu/A @ 15%†	Gross Margin, \$/A†,‡
Agrigold	A6416STXRIB	49.6	25.3	143 *	380 *
Dekalb	DKC54-38	52.9 *	22.5 *	133 *	351 *
PIP	PIP 5405GT	52.2 *	23.8 *	132 *	343 *
Pioneer	P0533AM1	53.3 *	21.0 *	113	297
Number of locations		1	1	1	1
Total number of replications		2	2	2	2
Mean		52.0	23.1	130	343
LSD(10%)		1.9	3.8	20	66

§ The difference in hybrid response between locations was too large and number of locations was too small to combine the data over locations.

† 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 \$3.36/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.

# **Thank you to everyone who contributed to the success of the 2014 WAPAC Corn Trials!**

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## ***Seed Company Sponsors***

Agrigold – Mark Anderson

Croplan- Chris Paul

Dairyland Seed – Boyd Hoffman

Dekalb/Monsanto- Mike Weiss

Golden Harvest- Paul Reiersen

Partners in Production & Steyer Seeds – Larry Shauger & Jack Kaltenberg

Pioneer – Ryan Bates

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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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