



2013 VIRGINIA ON-FARM WHEAT TEST PLOTS



A Summary of Replicated Research and Demonstration Plots Conducted by Virginia Cooperative Extension in Cooperation with Local Producers and Agribusinesses

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INTRODUCTION

The demonstration and research plot results discussed in this publication are a cooperative effort by eight Virginia Cooperative Extension agents, extension specialists from Virginia Tech, and an assistant professor at the Virginia State University School of Agriculture. We are proud to present this year's on-farm small grain plot work to you. We hope the information in this publication will help farmers produce a profitable crop in 2014.

The field work and printing of this publication are supported by the Virginia Small Grains Check-Off Funds. The cooperators gratefully acknowledge this support. Any small grain producer or agribusiness personnel who would like to receive a copy of this report should contact his/her local extension agent, who can request a copy from Keith Balderson in Essex County at 804 443-3551 or thbalder@vt.edu.

This is the twentieth year of this multi-year project. Further work is planned for the upcoming growing season.

The authors wish to thank the many producers who participated in this project. Appreciation is extended to the seed, chemical, and fertilizer representatives who donated products and/or assisted with the field work and to Robbie Longest, 2013 Essex County VCE intern for his assistance with data compilation.

DISCLAIMER:

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GENERAL SUMMARY

A. VARIETY SELECTION: Variety selection remains one of the most important components of wheat production. In our demonstration variety plots, there was as much as a 20% difference between the highest and lowest yielding variety in some of the plots. When averaged over five locations for the central and upper coastal plain locations, the difference between the highest and lowest yielding variety was almost 18%. In addition to yield, producers should also consider test weight, disease resistance, standability, and the presence of “beards” if deer pressure is a concern. The best resource for wheat variety selection is the Virginia Cooperative Extension publication, **Small Grains for 2013**, which is posted on the Virginia Cooperative Extension website at <http://www.pubs.ext.vt.edu/CSES/CSES-62/CSES-62.html>.

B. FERTILITY PLOTS: Zinc is a micronutrient that can be deficient in wheat. In addition to zinc soil levels, soil pH and phosphorous soil test levels affect the availability of zinc for crop use. Soil pH levels over 6.5 and high phosphorous soil levels “tie” up zinc. In two plots evaluating foliar zinc applied at growth stage 30, the addition of the zinc tended to increase yields in the field where zinc was deficient in the wheat tissue at growth stage 30. Zinc was not deficient in the wheat tissue in the other field, and we did not get a response to the zinc application. Producers should utilize soil and plant tissue testing to target zinc applications on fields that are deficient. In a plot evaluating *actosol*[®] pre-plant the addition of the actosol did not increase yields. The main ingredients of actosol are humic acid derived from coal processing byproducts, fulvic acid, and kelp by-product. Humic and fulvic acids are components of soil organic matter. The product contained 12% humic acid, 0.4% N, 0.08% P₂O₅, 1.5% K₂O as well as small percentages of Ca, Mg, S, B, Cl, Cu, Fe, Mn, and Zn.

C. TISSUE TESTING: During the 2012-2013 growing season, 67 small grain tissue samples were submitted for analysis. From the 67 samples, deficiencies included: 10 Nitrogen, 16 Sulfur, 3 Phosphorus, 1 Potassium, 6 Magnesium, 2 Calcium, 1 Boron, 9 Zinc, 5 Manganese, and 1 Copper. Complete tissue sample results can be found under the section in this publication labeled 2007-2013 Small Grain Tissue Sample Summary.

D. FOLIAR FUNGICIDE PLOT: In a plot evaluating Prosaro fungicide at flowering, the application of Prosaro tended to increase yields and test weights. The increase in yield was not enough to pay for the application. While head scab infection was significant in some areas, scab infection in this plot was not bad.

2013 Westmoreland County Wheat Variety Plot

Cooperators: Producer: F.F. Chandler, Jr.
 Extension: Stephanie Romelczyk, VCE – Westmoreland
 Keith Balderson, VCE – Essex
 Agribusiness: Participating Companies; Curtis Packett and Rusty Green, CPS

Previous Crop: Corn

Soil Type: Savannah loam; Kempsville loam

Tillage: No-till

Planting Date: October 17, 2012

Fertilizer: 30-40-60 in fall
 16-0-0-6 @ 250 lbs/A in February
 24-0-0-3 @ 250 lbs/A in March

Crop Protection: Burndown: 3 pts/A Gramoxone & 0.4 oz/A Finesse
 4 oz/A Fitness in March with N application
 7 oz/A Prosaro & 2 oz/A Tombstone at flowering

Harvest Date: June 26, 2013

Variety	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
Dyna-Gro 9042	59	13.7	94.01
Dyna-Gro Shirley	60	13.5	93.31
VCIA Jamestown	59	12.7	90.81
VCIA Merl	58	13.1	74.83
Featherstone 258	56	12.6	74.69
Southern States SS5205	58	13.3	87.64
Southern States 8404	57	12.4	81.21
Syngenta Oakes	59	12.9	91.59
Syngenta SY Harrison	58	13.5	93.08
USG 3201	56	12.4	95.91
USG 3438	58	12.8	101.69

Discussion: Good yields in the wheat plots overall. Some lodging was present in most varieties. Some yield loss may have occurred in Dyna-Gro 9042 due to sprayer tracks.

2013 Middlesex County Wheat Variety Plot

Cooperators: Producer: Jason Benton
 Extension: David Moore VCE-Middlesex
 Keith Balderson, VCE-Essex
Previous Crop: Corn
Soil Type: Suffolk Fine Sandy Loam
Tillage: No-Till into shredded corn stalks
Planting Date: October 16, 2012
Fertilizer: 25-60-60-10s broadcast
 20-0-0 Dec., 50-0-0-6s February, 50-0-0-6s - March
Crop Protection: Glyphosate Burndown, Karate-December
 Finesse-February, Prosaro-May at Heading
Harvest Date: June 24, 2013

Variety	Scab/Sprout	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
DG/CPS 9042	0/0	59.4	13.5	106.5
Check (Shirley)			13.5	112.7
DG/CPS Shirley	0/0	58.6	13.5	106.0
Check			13.5	109.1
Featherstone 258	0/0	57.3	11.6	102.0
Check			13.8	104.6
Jamestown	0/3.1	59.3	13.1	100.0
Check			13.6	107.6
Merl	0/0	59.7	13.7	88.7
Check			13.6	111.7
Southern States 5205	0/2.6	58.7	13.1	103.9
Check			13.4	108.9
Southern States 8404	.45/5.5	59.7	13.1	104.6
Check			13.3	107.0
Agripro Oakes	0/1.1	59.7	13.6	104.8
Check			13.4	109.6
Agripro SY Harrison	0/.42	58.9	13.6	98.3
Check			13.3	109.2
USG 3201	0/1.2	60.3	13.4	100.0
Check			13.4	104.0
USG 3438	0/1.4	58.7	13.1	106.9

Discussion:

This plot averaged over 105 bushels! This plot tillered well last fall and winter and never really lacked for moisture. It was treated with *Prosaro* for FHB (Scab) protection. Weather at that time was somewhat unstable. There was very little scab visually seen in the plot. All varieties stood up well with some lodging occurring in certain areas. Lodging of Featherstone 258 seemed to be the greatest. Test weight was not too bad, bear in mind this plot was harvested June 24th. Very little scab was seen in tests run by Perdue and some varieties showed some sprouting even at the early harvest date. Composite vomitoxin sample showed DON levels at 0.1 ppm, which is very good! Wheat is not saleable at 2 ppm or higher. Not a bad idea to become familiar with variety's disease package, test weights and baking quality.

2013 King and Queen County Wheat Variety Plot

Cooperators: Producer: Robert P. Longest
 Extension: Laura Maxey, VCE—King William and King and Queen Counties
 Keith Balderson, VCE—Essex County
 Agribusiness: Participating Seed Company Representatives

Previous Crop: Corn

Soil Type: Emporia sandy loam, 2 to 6 percent slopes

Tillage: No-Till

Planting Date: 11/18/2012

Fertilizer: 34-60-80-12 per acre on November 28, 2012; 50-0-0-6 per acre on March 1, 2013
 55-0-0-7 per acre on April 2, 2013

Crop Protection: Harmony Extra on March 3, 2013; Caramba aerially applied on May 17, 2013

Harvest Date: 6/28/2013

Variety	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
Dyna-Gro 9042	57	14.8	75.2
Dyna-Gro Shirley	58	13.3	72.2
Featherstone 258	56	12.3	66.7
Jamestown	57	13.0	52.7
Merl	56	14.4	65.7
SS 5205	57	13.5	59.6
SS8404	57	12.7	62.7
Agripro Oakes	57	14.3	63.3
Agripro SY Harrison	56	13.0	62.1
USG 3201	58	13.0	58.0
USG 3438	56	11.8	59.5

Discussion: This plot was managed for high yields, including a fungicide application for scab control. There was significant scab pressure in the plot. The fungicide for scab control was applied on May 17th. Fungicides for scab do not offer full protection/control and must be applied at flowering. We believe the application was made too late to give good control.

2013 Caroline County Wheat Variety Plot

Cooperators:	Producer: Gary Gravatt Extension: Mike Broaddus Agribusiness: Participating seed companies
Fertilizer:	Feb. 20, 2013: 21-0-120 per acre Mar. 14, 2013: 40-0-0-32 per acre Apr. 15, 2013: 40-0-0-32 per acre May 20, 2013: 1.25 lbs. N, 2.67 lbs. P/ 1.3 lbs K per acre
Crop Protection:	Mar. 14, 2013: 0.75 oz. Harmony/ 4 oz. Clarity/ 2 oz. Syntax/ .25 lbs. Powerflex May 20, 2013: 8 oz. Prosaro/ 1qt. M pac/ 1.5 oz. Karate
Harvest Date:	6/30/2013

Variety	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
Agripro Oakes	55	11.8	55.9
Agripro SY Harrison	56	12	50.6
Dyna-Gro 9042	56	11.9	56.2
Dyna-Gro Shirley	55	12	50.0
Featherstone 258	55	11.8	54.1
Southern States 5205	54	11.9	42.2
Southern States 8404	55	11.8	50.7
USG 3201	53	11.7	53.8
USG 3438	55	11.2	59.9
VCIA Jamestown	56	11.6	60.7
VCIA Merl	55	11.9	54.9

Discussion:

Use this data with other plot information for selecting your 2013-2014 wheat varieties.

2012/13 Virginia State University Small Grain Variety Comparison

Cooperators:	Producer: Glenn F. Chappell & Glenn F. Chappell, III Glenn F. Chappell, II – Virginia State University Scott Reiter – Virginia Cooperative Extension – Prince George
Previous Crop:	Corn
Soil Type:	Slagle Sandy loam
Tillage:	No-Till
Test/Plot Size:	750 ft x 15 ft per variety
Planting Equipment:	John Deere 1590 NT Drill
Planting Date:	October 23, 2012
Row Spacing:	7.5 inches
Variety:	Various
Seeding Rate:	22 seed/row ft
Crop Protection:	Herbicides: 1pt/A Gramoxone Inteon - October 15, 2012; 1.0 oz/A of Harmony Extra – April 3, 2013 Fungicides: 6.0 oz/A of Headline – April 26, 2013 Fertilizer: 40 lbs./A of N – October 15, 2012; 60 lbs./A of N April 3, 2013; 30 lbs./A of N April 26, 2013
Harvest Date:	July 10, 2013
Harvest Equipment:	John Deere 6620

Brand	Variety	H ₂ O (%)	Test wt.	Yield Bu/A	% of Check**
VCIA	Merl*	13	56.5	53.5	-----
VCIA	Jamestown	11	56	57.4	103
Dyna-Gro	Shirley	12	55.5	66.3	119
Southern S.	8404	12	56.5	61.1	110
Southern S.	5205	11	55	64.4	116
Featherstone	VA258	12	55	62.1	112
USG	3438	11	54	66.1	119
VCIA	Merl*	12	56	57.8	-----
USG	3201	12	57	63.0	113
Dyna-Gro	9042	10	54	64.1	114
AgriPro	Harrison	12	54.5	58.8	105
AgriPro	Oaks	13	57	60.0	107
VCIA	Merl*	12	56	53.8	-----

*Check Variety

**% of Check is calculated by dividing the individual variety yield by the mean of the two checks located on either side of the variety.

Discussion: Test weight values were low due to the delay in harvest caused by the excessive rains in late June and early July. Compare these results with regional data to choose varieties that maintain test weight during adverse harvesting conditions.

2013 Virginia Beach Wheat Variety Plot

Cooperators:	Producer: Russell H. Malbone Extension: Roy D. Flanagan III
Previous Crop:	No till Field Corn
Soil Type:	Bojac fine sandy loam and Tetotum loam
Tillage:	Conventional Tillage, Disked 2X, Field Cultivator 2X
Planting Date:	Nov. 29, 2012
Fertilizer:	21-54-108 per acre pre plant 80-0-0 per acre topdress April 1
Crop Protection:	Herbicide: Harmony Extra SG 0.75 oz/A April 1 Fungicide: Prosaro 7 oz/A
Harvest Date:	July 7, 2013

Variety	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
USG 3201—Check	63	12.6	69.9
Great Heart GHT-931	63	12.9	73.9
Dyna Gro 9042	61	12.5	50.3
Shirley	61	12.3	69.9
SS 520	60	12.2	66.6
USG 3120	61	12.2	71.2
Pioneer 26R22	59	12.1	77.1
Great Heart GHT-955	60	12.3	59.7
Dyna Gro 9053	58	12.2	62.6
Yorktown	59	11.7	54.9
USG 3555	61	12	50.7
Great Heart GHT-933	59	13.5	63.6
SS-5205	60	13.0	56.7
SS-8404	61	13.0	61.9
Pioneer 26R10	59	13.1	66.3
AgriPro SY9978	60	12.5	62.8
USG 3409	61	12.5	74.3
Pioneer 26R20	60	12.3	71.7
Oakes	63	12.3	76.9
Average	60.47	12.48	65.32

Discussion: Harvest was held up because of wet weather. Insect pressure was low this year and no insecticide was used. Use this data with other plot information for selection of your 2013-2014 wheat varieties.

2013 Chesapeake Wheat Variety Comparison

Cooperators:	Producer: Marvel Nicholas Extension: Watson Lawrence-Chesapeake
Previous Crop:	Corn
Soil Type:	Chesapeake Fine Sandy Loam
Tillage:	Disk followed by disk with culti-packer
Planting Date:	November 9, 2012
Fertilizer:	October 18: 307 lbs./A 14-9-26 October 15: 562 lbs. Lime/A March 29: 90 lbs./A (32% Liquid Nitrogen)
Crop Protection:	January 11: Finesse .2 oz./A April 27: Quilt 10 oz./A + 2.4 oz./A Tombstone/Helios
Harvest Date:	June 28, 2013

Variety	Test Weight (Lbs./Bu.)	Moisture (%)	Yield Bu./A @13.5%
USG 3555	58.5	13.6	95.46
Pioneer 26R10	59.5	14.0	90.47
Pioneer 26R20	59.4	14.0	89.32
Great Heart 955	55.8	14.2	89.22
USG 3409	55.0	14.2	87.93
Great Heart 931	58.2	14.5	87.57
Yorktown	58.0	14.2	86.04
Shirley	?	14.0	85.77
Oakes	59.7	14.2	85.74
Great Heart 933	57.0	14.1	85.57
Southern States 5205	57.7	14.5	85.46
Pioneer 26R22	57.3	13.3	85.06
Southern States 520	55.1	14.6	84.06
Dyna Gro 9042	57.3	13.9	83.91
Dyna Gro 9053	55.7	13.8	83.38
Great Heart 9978	56.8	13.9	83.34
Southern States 8404	55.0	14.0	82.85
USG 3120	57.4	13.8	82.30

Discussion: This test was managed well with timely crop protection practices. An insecticide (Tombstone/Helios) was applied right at threshold for cereal leaf beetle. A fungicide (Quilt) was added to insecticide application and no major disease pressure affected yields. Finesse did a good job controlling weeds and suppressing ryegrass. Lodging was minimal and overall an excellent plot.

**2013 Virginia Cooperative Extension On-Farm Wheat Variety Plot Yield Summary
for Central and Upper Coastal Plain (bushels/acre)**

Variety	Middlesex	Westmoreland	King and Queen	Caroline	Virginia State	Average
Dyna-Gro 9042	107	94	75	56	64	79.2
Dyna-Gro Shirley	106	93	72	50	66	77.4
VCIA Jamestown	100	91	53	61	57	72.4
VCIA Merl	89	75	66	55	54	67.8
Featherstone 258	102	75	67	54	62	72
Southern States SS5205	104	88	60	42	64	71.6
Southern States 8404	105	81	63	51	61	72.2
Agripro Oakes	105	92	63	56	60	75.2
Agripro SY Harrison	98	93	62	51	59	72.6
USG 3201	100	96	58	54	63	74.2
USG3438	107	102	60	60	66	79
Average	102	89	64	54	61	

**2013 Virginia Cooperative Extension On-Farm Wheat Variety Plot Test Weight Summary
for Central and Upper Coastal Plain (lbs./bu)**

Variety	Middlesex	Westmoreland	King and Queen	Caroline	Virginia State	Average
Dyna-Gro 9042	59.4	59	57	56	54	57.08
Dyna-Gro Shirley	58.6	60	58	55	55.5	57.42
VCIA Jamestown	59.3	59	57	56	56	57.46
VCIA Merl	59.7	58	56	55	56.5	57.04
Featherstone 258	57.3	56	56	55	55	55.86
Southern States SS5205	58.7	58	57	54	55	56.54
Southern States 8404	59.7	57	57	55	56.5	57.04
Agripro Oakes	59.7	59	57	55	57	57.54
Agripro SY Harrison	58.9	58	56	56	54.5	56.68
USG 3201	60.3	56	58	53	57	56.86
USG3438	58.7	58	56	55	54	56.34
Average	59.1	58	56.8	55	55.5	

**2013 Virginia Cooperative Extension On-Farm Wheat Variety Plot Yield Summary
for Chesapeake and Virginia Beach (bushels/acre)**

Variety	Chesapeake	Virginia Beach	Average	Rank
Dyna-Gro 9042	84	50	67	13
Dyna-Gro Shirley	86	70	78	4
Dyna-Gro 9053	83	63	73	9
Yorktown	86	55	70.5	12

Southern States 520	84	67	75.5	6
Southern States SS5205	85	57	71	11
Southern States 8404	83	62	72.5	10
Agripro SY9978	-	63		
Agripro Oakes	86	77	81.5	1
USG 3555	95	51	73	9
USG 3409	88	74	81	2
USG 3120	82	71	76.5	5
Pioneer 26R10	90	66	78	4
Pioneer 26R20	89	72	80.5	3
Pioneer 26R22	85	77	81	2
Great Heart 955	89	60	74.5	8
Great Heart 931	88	74	81	2
Great Heart 933	86	64	75	7
Great Heart 9978	83	-		
Average	86.2	65.2		

**2013 Virginia Cooperative Extension On-Farm Wheat Variety Plot Test Weight
Summary for Chesapeake and Virginia Beach (lbs./bu.)**

Variety	Chesapeake	Virginia Beach	Average
Dyna-Gro 9042	57.3	61	59.2
Dyna-Gro Shirley	-	61	61
Dyna-Gro 9053	55.7	58	56.9
Yorktown	58	59	58.5
Southern States 520	55.1	60	57.6
Southern States SS5205	57.7	60	58.9
Southern States 8404	55	61	58
Agripro SY9978	-	60	60
Agripro Oakes	59.7	63	61.4
USG 3555	58.5	61	59.8
USG 3409	55	61	58
USG 3120	57.4	61	59.2
Pioneer 26R10	59.5	59	59.3
Pioneer 26R20	59.4	60	59.7
Pioneer 26R22	57.3	59	58.2
Great Heart 955	55.8	60	57.9
Great Heart 931	58.2	63	60.6
Great Heart 933	57	59	58
Great Heart 9978	57	-	57
Average	57.3	60.3	

2013 Middlesex Zinc Test

Cooperators:
Producer: Hampstead Farm, W.H. Bray & Sons
Extension: David Moore, VCE-Middlesex

Previous Crop: Corn
Soil Type: Slagle Silt Loam
Tillage: No-Till into mowed stalks
Planting Date: November 4, 2012
Fertilizer: 25-50-90-4S per acre in the fall
 40-0-0-5S per acre in February
 50-0-0-6S per acre in March
Crop Protection: Glyphosate Burndown
 Harmony-February
 Osprey-Early March
 Prosaro-May at Heading
Treatment: .5# Zinc per acre with second spring nitrogen application
Variety: Southern States 5205
Harvest Date: June 26, 2013

Treatment	Test Weight lbs./bu.	% Moisture	Yield bu./A @13.5%
With Zinc 1	58	13.2	118.0
Without Zinc 1	58	13.2	109.7
With Zinc 2	59	13.3	108.1
Without Zinc 2	58	13.3	101.9
With Zinc 3	59	13.4	110.1
Without Zinc 3	58	13.4	110.2
With Zinc 4	58	13.2	110.1
Without Zinc 4	58	13.2	108.6
Avg. with Zinc	58.5		111.6
Avg. without Zinc	57.8		107.6

Discussion: This field showed a zinc deficiency at Growth Stage 30 through tissue samples sent to A&L Labs. The product used for the foliar treatment was Monty's Foliar Zinc which was approximately 9% zinc. The rate applied was 2 quarts per acre at a cost of about \$8.00 per quart (\$16.00). Since it was applied with second nitrogen application, the cost of application was minimal. Yields in this field showed a difference of 4 bushels in favor of the zinc application. With wheat at \$6.00 per bushel, that is an increase in income of \$24.00; a net of approximately \$8.00 per acre. Remember this was in a field showing a deficiency and not blanket applied. Zinc applications, when needed, have shown to increase nitrogen use efficiency and improve yields. Reference these and other on-farm results when making decisions for 2014 crops.

2013 Middlesex Wheat Zinc Test II

Cooperators:
Producer: Jason Benton
Extension: David Moore, VCE-Middlesex

Previous Crop: Corn
Soil Type: Suffolk Fine Sandy Loam
Tillage: No-Till into Shredded Stalks
Planting Date: October 17, 2012
Fertilizer: 30-60-60-8s Fall
 20-0-0 December
 50-0-0-6s February
 50-0-0-6s March
Crop Protection: Glyphosate Burndown
 Karate-December
 Finesse-February
 Prosaro-May at Heading
Treatment: .5# Zinc in alternating strips
Variety: Shirley
Harvest Date: June 24, 2013

Treatment	Test Weight lbs./bu.	% Moisture	Yield bu./A @13.5%
With Zinc 1	58	13.1	101.1
Without Zinc 1	57	13.1	99.7
With Zinc 2	57	13.2	101.0
Without Zinc 2	58	13.3	100.6
With Zinc 3	58	12.7	102.7
Without Zinc 3	58	13.1	99.5
Avg. with Zinc	57.7	13.0	101.6
Avg. without Zinc	57.6	13.2	100.0

Discussion:

This particular field was not deficient in Zinc according to A&L tissue sample taken at GS 30. There has been some interest in adding zinc to sidedress nitrogen this year to improve nitrogen use efficiency. Zinc sometimes shows up as deficient in soils that are cold or show high levels of phosphorous.

Two quarts of a *System-Zinc* product was applied with second application of nitrogen in March. There was no visible difference in the plot strips. This product has a cost of \$8.00 per quart. Cost of total product applied is \$16.00 not including any additional costs for application. At \$6.00 wheat, application of this product did not improve profit margins.

Use this and other Virginia Tech on-farm small grains research results when making production decisions for 2014.

2013 Prince George Wheat *actosol*[®] Plot

Cooperators:
Producer: George Reiter & Sons
Extension: Scott Reiter, Prince George
Agribusiness: Jim Flowers, B.T. Hargrave Co.
Previous Crop: Soybeans
Soil Type: Montross silt loam & Burrowsville sandy loam
Tillage: No-till – John Deere 750 Drill – 7.5 inch row
Planting Date: 11/16/2012
Fertilizer: 400 lbs 5-10-30 – planting
 20 gals 24-0-0-3S – GS25 – 2/4/13
 25 gals 24-0-0-3S – GS 30 – 3/29/13
Crop Protection: 1 qt Roundup Powermax + 1 pint 2,4-D - Burndown
 0.5 oz Volta – 3/29/13
 4 oz Priaxor + 2 oz Tombstone – 5/2/13
Treatment: Base *actosol*[®] @ 1 gal/A with burndown herbicides
Variety: Certified Jamestown
Harvest Date: 6/15/13

Treatment	Test Weight lbs./bu.	% Moisture	Yield bu./A @13.5%
With <i>actosol</i> 1	62.8	13.7	60.4
Without <i>actosol</i> 1	62.3	13.5	64.0
With <i>actosol</i> 2	62.8	13.4	69.7
Without <i>actosol</i> 2	62.8	13.6	68.5
With <i>actosol</i> 3	62.8	13.4	71.9
Without <i>actosol</i> 3	63.5	13.4	72.0
Avg. with <i>actosol</i>	62.8	13.5	67.3
Avg. without <i>actosol</i>	62.9	13.5	68.2

Discussion: *Actosol*[®] is marketed as an Organic Miracle Fertilizer (directly from product label) for numerous crops. Base *actosol*[®] was used in this trial. The main ingredients are humic acid derived from coal processing byproducts, fulvic acid, and kelp byproduct. Humic and fulvic acids are components of soil organic matter. The product contained 12% humic acid, 0.4% N, 0.08% P₂O₅, 1.5% K₂O as well as small percentages of Ca, Mg, S, B, Cl, Cu, Fe, Mn, and Zn. The Base *actosol*[®] was applied pre-plant with the burndown herbicides. The product has a brown, earthy consistency and visible residue was noticed on 50 mesh strainers at the spray tip after 10 acres of application. The use guide recommends no strainers be used with the product. There were no visual differences in plant growth throughout the growing season. In this evaluation no differences were observed in yield or test weight.

2007 - 2013 Small Grain Tissue Sample Summary

Totals-2007	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Very High	0	0	0	2	0	0	0	0	0	1	5	0	0
High	0	0	3	2	0	0	0	0	0	1	5	0	2
Sufficient	0	10	7	6	1	7	10	8	4	7	0	6	8
Low	8	0	0	0	9	2	0	2	2	1	0	4	0
Deficient	2	0	0	0	0	1	0	0	4	0	0	0	0
Total	10	10	10	10	10	10	10	10	10	10	10	10	10

Totals-2008	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Very High	4	12	3	36	0	2	0	0	0	23	59	32	0
High	4	32	20	29	0	20	1	1	8	50	41	28	3
Sufficient	24	46	77	35	22	53	100	38	64	15	1	34	98
Low	71	4	1	1	71	26	0	56	26	5	0	7	0
Deficient	8	7	0	0	8	0	0	6	3	8	0	0	0
Total	111	101	101	101	101	101	101	101	101	101	101	101	101

Totals-2009	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Very High	0	0	0	7	0	0	0	0	0	1	13	0	0
High	4	7	3	7	0	3	0	0	5	9	6	7	0
Sufficient	8	11	15	5	14	15	19	10	12	7	0	6	19
Low	7	1	1	0	5	1	0	9	2	0	0	6	0
Deficient	0	0	0	0	0	0	0	0	0	2	0	0	0
Total	19	19	19	19	19	19	19	19	19	19	19	19	19

Totals-2010	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Very High	20	0	13	19	1	1	0	0	0	2	23	4	0
High	2	9	6	3	0	1	0	1	7	4	7	9	0
Sufficient	5	11	11	8	22	21	22	8	13	13	0	14	29
Low	3	2	0	0	6	7	8	13	8	3	0	3	1
Deficient	0	8	0	0	1	0	0	8	2	8	0	0	0
Total	30	30	30	30	30	30	30	30	30	30	30	30	30

Totals-2011	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Barley													
Very High	0	0	0	4	0	0	0	0	0	0	3	0	0
High	2	2	3	0	0	4	0	0	1	2	0	0	0
Sufficient	2	3	2	1	5	1	5	1	3	2	2	3	5
Low	2	0	0	0	0	0	0	2	1	0	0	1	0
Deficient	0	0	0	0	0	0	0	2	0	1	0	1	0
Total	6	5	5	5	5	5	5	5	5	5	5	5	5
Wheat													
Very High	0	0	0	0	0	0	0	0	0	0	3	0	0
High	12	0	10	1	0	0	0	0	0	0	0	0	2
Sufficient	22	13	9	18	17	18	19	4	18	17	16	14	17
Low	0	6	0	0	2	1	0	13	1	1	0	5	0
Deficient	0	0	0	0	0	0	0	2	0	1	0	0	0
Total	34	19	19	19	19	19	19	19	19	19	19	19	19

Totals-2012	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Barley													
Very High	0	0	0	0	0	0	0	0	0	0	0	0	0
High	2	0	0	0	0	3	0	0	0	1	0	0	0
Sufficient	1	3	5	5	4	1	4	5	5	4	5	5	4
Low	0	1	0	0	1	1	1	0	0	0	0	0	0
Deficient	2	1	0	0	0	0	0	0	0	0	0	0	1
Total	5	5	5	5	5	5	5	5	5	5	5	5	5
Wheat													
Very High	1	0	0	0	0	0	1	1	0	0	1	0	0
High	5	0	6	3	0	6	0	0	0	0	0	1	0
Sufficient	14	17	15	21	21	18	23	9	23	22	23	23	18
Low	2	6	3	0	3	0	0	14	1	1	0	0	6
Deficient	2	1	0	0	0	0	0	0	0	1	0	0	0
Total	24	24	24	24	24	24	24	24	24	24	24	24	24

Totals-2013	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
Very High	2	0	0	0	0	0	0	0	0	2	0	0	0
High	3	1	3	0	0	3	0	0	0	0	5	0	0
Sufficient	51	46	60	65	53	58	67	28	55	60	62	65	67
Low	1	4	1	1	8	4	0	38	3	0	0	1	0
Deficient	10	16	3	1	6	2	0	1	9	5	0	1	0
Total	67	67	67	67	67	67	67	67	67	67	67	67	67

Totals	N	S	P	K	Mg	Ca	Na	B	Zn	Mn	Fe	Cu	Al
2007-2013													
Very High	27	12	16	68	1	3	1	1	0	29	107	36	0
High	34	51	54	45	0	40	1	2	21	67	64	45	7
Sufficient	127	160	201	164	159	192	269	111	197	147	109	170	265
Low	94	24	6	2	105	42	9	147	44	11	0	27	7
Deficient	24	33	3	1	15	3	0	19	18	26	0	2	1
Total	306	280	280	280	280	280	280	280	280	280	280	280	280

2013 Middlesex Prosaro Test

Cooperators:	Producer: Jason Benton
	Extension: David Moore, VCE-Middlesex
Previous Crop:	Corn
Soil Type:	Suffolk Fine Sandy Loam
Tillage:	No-Till into shredded corn stalks
Planting Date:	October 18, 2012
Fertilizer:	25-60-60-10s broadcast 20-0-0 Dec., 50-0-0-6s February, 50-0-0-6s - March
Crop Protection:	Glyphosate Burndown, Karate-December Finesse-February, Prosaro-May at heading
Treatment:	Alternate strips with Prosaro at Flowering
Variety:	Dyna-Gro 9042
Harvest Date:	July 5, 2013

Treatment	Test Weight lbs./bu.	% Moisture	Yield bu./A @13.5%
With Prosaro 1	57	12.6	96.6
Without Prosaro 1	56.5	12.5	92.3
With Prosaro 2	57.5	12.5	93.6
Without Prosaro 2	56	12.2	93.8
With Prosaro 3	57	12.4	93.3
Without Prosaro 3	56	11.8	90.8
Avg. with Prosaro	57.2	12.5	94.5
Avg. without Prosaro	56.2	12.2	92.3

Discussion:

This wheat was harvested after July 4th. Conditions had worsened and quality and test weight were falling. The use of a fungicide for head scab does not always pay and sometimes it ends in a breakeven situation, but look at the moisture and the test weights of these replications. Most of what I've seen over the years is that it does help with test weight even in years where it may not add significant yield. Jason makes his Prosaro application when he sees the first signs of flowering. He begins with the early varieties and works through. We did have suitable conditions for diseases. I think maybe in some cases, whether it is weather related or cases where the field was slow maturing (fields not maturing uniformly) the application was done later than it should have been.

I think that in this field, this year, you will not see an advantage to using this product. Dyna-Gro 9042 does have moderate to good resistance to Head Scab. Always check variety disease package (resistance) and weather conditions when making spray decisions.