

Ag-Quest Inc.

Trial ID: PR150-MWA
Location: ELM CREEK, MB

Protocol ID:
Study Director: Trent Knight
Investigator: David R. S. Rourke

General Trial Information

Study Director: Trent Knight
Affiliation: PowerRich Corporation
Postal Code: R2X 2V9 **E-mail:** powerrich@mts.net
Investigator: Mike Wall **Title:** Research Associate
Affiliation: Ag-Quest, Inc.
Postal Code: R0K 1M0 **E-mail:** Mike.Wall@Agquest.com

Trial Location

City: Elm Creek **Trial Status:** ONE-
YEAR/FINAL
State/Prov.: MB
Postal Code: R0G0N0 **Initiation Date:** 11 Jun 2011
Country: CAN
Directions:
1 mile south and 1.25 miles west of junction of hwy's #2 and #13.

Cooperator/Landowner

Cooperator: Ag-Quest, Inc. (Elm Creek) **Country:** CAN
Address 1: P.O. Box 193 **Phone No:** 204-436-3080
City: Elm Creek **Fax No:** 204-436-3082
State/Prov: MB
Postal Code: R0G0N0 **E-mail:** Mike.Wall@Agquest.com

Crop Description

Crop 1: BRSNN Brassica napus Rapeseed
Variety: 73-65RR **Description:** Roundup Ready
BBCH Scale: BRAP **Planting Date:** 11 Jun 2011
Planting Method: SEEDED **Rate, Unit:** 7.3 KG/HA
Depth, Unit: 1 CM
Row Spacing, Unit: 15 CM
Seed Bed: MEDIUM
Soil Moisture: WET
Harvest Date: 08 Sep 2011 **Harvest Equipment:** PLOT COMBINE
Harvested Width, Unit: 1.2 M
% Standard Moisture: 10.0 **Moisture Meter:** Dickey-john Mini GAC
Weighing Equipment: ELECTRONIC BALANCE

Site and Design

Plot Width, Unit: 1.5 M **Site Type:** FIELD
Plot Length, Unit: 7.5 M **Tillage Type:** CONVENTIONAL-TILL
Replications: 4 **Study Design:** Randomized Complete Block
Soil Drainage: G Good

Trial Initiation Comments:

Treflan and granular fertilizer was applied and incorporated prior to planting.

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	Previous Crops	Previous Pesticides	Year
1.	Wheat	Puma+Buctril M	2010
2.	Barley	DyVel	2009
3.	Millet	Pardner	2008

Maintenance

No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit	Tank Mix
1.	10 Jun 2011	Treflan EC	480	GA/L	EC	1.7	L/HA	N

Soil Description

Description Name: Range 2 (SE 23-8-5W) 0-10cm

% Sand: 76 % OM: 2.1 **Texture:** SANDY LOAM
 % Silt: 13 **pH:** 7.8 **Soil Name:** Almassippi
 % Clay: 11 **CEC:** 10 **Fert. Level:** FAIR

Analyzed By:

ALS Labs. Additional Measured Elements indicate spring applied nutrients.

Additional Measured Elements

Element	Quantity	Unit
N	100	KG/HA
P	40	KG/HA
K	40	KG/HA
S	20	KG/HA

Moisture and Weather Conditions

Overall Moisture Conditions: WET-DRY-DRY

Closest Weather Station: Ag-Quest

Distance: 100 **Unit:** M

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Application Description

	A	B
Application Date:	29 Jun 2011	18 Jul 2011
Time of Day:	15:30	10:40 am
Application Method:	SPRAY	SPRAY
Application Timing:	PCPEUN	POSPOS
Application Placement:	FOLIAR	FOLIAR
Applied By:	MW	MW
Air Temperature, Unit:	33 C	33 C
% Relative Humidity:	65	46
Wind Velocity, Unit:	7 KPH	6 KPH
Wind Direction:	W	S
Dew Presence (Y/N):	N	N
Water Hardness:	121 mg/L	121 mg/L
Soil Temperature, Unit:	28.1 C	25 C
Soil Moisture:	EXCESSIVE	ADEQUATE
% Cloud Cover:	70	0
Next Rain Occurred On:	04 Jul 2011	23 Jul 2011

Crop Stage At Each Application

	A		B	
Crop 1 Code, BBCH Scale:	BRSNN	BRAP	BRSNN	BRAP
Stage Scale Used:	BBCH		BBCH	
Stage Majority, Percent:	14	90	65	50
Stage Minimum, Percent:	13	10	62	20
Stage Maximum, Percent:	14	90	65	50
Height, Unit:	9	CM	90	CM
Height Minimum, Maximum:	7	10	80	100

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Application Equipment

	A	B
Appl. Equipment:	1.5MBACKPACK	1.5MBACKPACK
Operating Pressure, Unit:	276 KPA	276 KPA
Nozzle Type:	FLAT FAN	FLAT FAN
Nozzle Size:	AI 110015	AI 110015
Nozzle Spacing, Unit:	50 CM	50 CM
Nozzle Calibration, Unit:	587 ML/MIN	587 ML/MIN
Boom Length, Unit:	1.5 M	1.5 M
Boom Height, Unit:	45 CM	45 CM
Ground Speed, Unit:	7 KPH	7 KPH
Carrier:	WATER	WATER
Spray Volume, Unit:	100 L/HA	100 L/HA
Mix Size, Unit:	1 Liters	1 Liters
Propellant:	CO2	CO2
Tank Mix (Y/N):	N	N

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Crop Code	BRSNN	BRSNN	BRSNN	BRSNN	BRSNN	BRSNN			
BBCH Scale	BRAP	BRAP	BRAP	BRAP	BRAP	BRAP			
Crop Name	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed			
Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C			
Rating Date	12 Jul 2011	12 Jul 2011	20 Jul 2011	20 Jul 2011	21 Jul 2011	22 Jul 2011			
Rating Data Type	PHYGEN	VIGOUR	PHYGEN	VIGOUR	HEIGHT	PHYGEN			
Rating Unit	%	0-9	%	0-9	CM	%			
Assessed By	MW	MW	MW	MW	KT	MW			
Days After First/Last Applic.	13 13	13 13	21 2	21 2	22 3	23 4			
Trt-Eval Interval	13 DA-A	13 DA-A	2 DA-B	2 DA-B	3 DA-B	4 DA-B			
Plant-Eval Interval	31 DP-1	31 DP-1	39 DP-1	39 DP-1	40 DP-1	41 DP-1			
ARM Action Codes									
Number of Decimals									
Trt Treatment	Rate	Unit	Plot	1	2	3	4	5	6
1 Glyphosate	1.38 l/ha		101	0.0	8.0	0.0	8.0	103.00	0.0
Lance	351 g/ha		202	0.0	8.0	0.0	8.0	95.00	0.0
			301	0.0	8.0	0.0	8.0	92.00	0.0
			402	0.0	8.0	0.0	8.0	99.60	0.0
			Mean =	0.0	8.0	0.0	8.0	97.40	0.0
2 Glyphosate	1.38 l/ha		102	0.0	8.0	0.0	8.0	105.00	0.0
PowerRich Foliar Phosphate	6.175 kg/ha		201	0.0	8.0	0.0	8.0	95.40	0.0
Lance	351 g/ha		302	0.0	8.0	0.0	8.0	101.20	0.0
PowerRich Foliar Phosphate	6.175 kg/ha		401	0.0	8.0	0.0	8.0	100.00	0.0
			Mean =	0.0	8.0	0.0	8.0	100.40	0.0

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Crop Code	BRSNN	BRSNN	BRSNN	BRSNN	BRSNN	BRSNN
BBCH Scale	BRAP	BRAP	BRAP	BRAP	BRAP	BRAP
Crop Name	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed
Part Rated	PLANT	PLOT C	GRAIN C	GRAIN C	GRAIN C	GRAIN C
Rating Date	22 Jul 2011	04 Aug 2011	03 Oct 2011	03 Oct 2011	06 Oct 2011	06 Oct 2011
Rating Data Type	VIGOR	LENGTH	YIELD	MOICON	adj YIELD	adj YIELD
Rating Unit	0-9	M	G	%	kg/ha	bu/ac
Assessed By	MW	KT	KT	KT	MW	MW
Days After First/Last Applic.	23 4	36 17	96 77	96 77	99 80	99 80
Trt-Eval Interval	4 DA-B					
Plant-Eval Interval	41 DP-1	54 DP-1	114 DP-1	114 DP-1	117 DP-1	117 DP-1
ARM Action Codes					T1	T2
Number of Decimals					0	1
Trt Treatment	Rate					
No. Name	Rate Unit Plot	7	8	9	10	11
1 Glyphosate	1.38 l/ha 101	8.0	5.600	1668.0	6.00	2592
Lance	351 g/ha 202	8.0	5.850	1890.0	6.00	2812
	301	8.0	5.650	1520.0	6.10	2339
	402	8.0	6.450	2134.0	7.40	2837
	Mean =	8.0	5.888	1803.0	6.38	2645
2 Glyphosate	1.38 l/ha 102	8.0	5.650	1862.0	6.10	2865
PowerRich Foliar Phosphate	6.175 kg/ha 201	8.0	5.650	1920.0	5.90	2961
Lance	351 g/ha 302	8.0	5.600	1720.0	5.90	2676
PowerRich Foliar Phosphate	6.175 kg/ha 401	8.0	6.450	2458.0	6.70	3292
	Mean =	8.0	5.838	1990.0	6.15	2949

ARM Action Codes

$$T1 = ([C9]/(1.2*[C8]))*10*((100-[C10])/100)*1.1111$$

$$T2 = (([I11]*2.2046)/52)*0.4047$$

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Part Rated	PLANT C	PLANT C	PLANT C	PLANT C	PLANT C	PLANT		
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Rating Unit	%	0-9	%	0-9	CM	%		
Assessed By	MW	MW	MW	MW	KT	MW		
Days After First/Last Applic.	13 13	13 13	21 2	21 2	22 3	23 4		
Trt-Eval Interval	13 DA-A	13 DA-A	2 DA-B	2 DA-B	3 DA-B	4 DA-B		
Plant-Eval Interval	31 DP-1	31 DP-1	39 DP-1	39 DP-1	40 DP-1	41 DP-1		
ARM Action Codes								
Number of Decimals								
Trt Treatment								
No. Name	Rate	Unit	1	2	3	4	5	6
1 Glyphosate	1.38	l/ha	0.0 a	8.0 a	0.0 a	8.0 a	97.40 a	0.0 a
Lance	351	g/ha						
2 Glyphosate	1.38	l/ha	0.0 a	8.0 a	0.0 a	8.0 a	100.40 a	0.0 a
PowerRich Foliar Phosphate	6.175	kg/ha						
Lance	351	g/ha						
PowerRich Foliar Phosphate	6.175	kg/ha						
LSD (P=.05)	0.00		0.00	0.00	0.00	0.00	6.685	0.00
Standard Deviation	0.00		0.00	0.00	0.00	0.00	2.971	0.00
CV	0.0		0.0	0.0	0.0	0.0	3.0	0.0
Bartlett's X2	0.0		0.0	0.0	0.0	0.0	0.118	0.0
P(Bartlett's X2)	0.731	.
Replicate F	0.000		0.000	0.000	0.000	0.000	3.458	0.000
Replicate Prob(F)	1.0000		1.0000	1.0000	1.0000	1.0000	0.1677	1.0000
Treatment F	0.000		0.000	0.000	0.000	0.000	2.038	0.000
Treatment Prob(F)	1.0000		1.0000	1.0000	1.0000	1.0000	0.2487	1.0000

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

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Crop Name	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed	Rapeseed		
Part Rated	PLANT	PLOT C	GRAIN C	GRAIN C	GRAIN C	GRAIN C		
Rating Date	22 Jul 2011	04 Aug 2011	03 Oct 2011	03 Oct 2011	06 Oct 2011	06 Oct 2011		
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Rating Unit	0-9	M	G	%	kg/ha	bu/ac		
Assessed By	MW	KT	KT	KT	MW	MW		
Days After First/Last Applic.	23 4	36 17	96 77	96 77	99 80	99 80		
Trt-Eval Interval	4 DA-B							
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ARM Action Codes					T1	T2		
Number of Decimals					0	1		
Trt Treatment	Rate	Unit	7	8	9	10	11	12
1 Glyphosate	1.38	l/ha	8.0 a	5.888 a	1803.0 a	6.38 a	2645 b	45.4 b
Lance	351	g/ha						
2 Glyphosate	1.38	l/ha	8.0 a	5.838 a	1990.0 a	6.15 a	2949 a	50.6 a
PowerRich Foliar Phosphate	6.175	kg/ha						
Lance	351	g/ha						
PowerRich Foliar Phosphate	6.175	kg/ha						
LSD (P=.05)	0.00		0.1718	191.88	0.542	203.4	3.49	
Standard Deviation	0.00		0.0764	85.28	0.241	90.4	1.55	
CV	0.0		1.3	4.5	3.84	3.23	3.23	
Bartlett's X2	0.0		0.006	0.096	0.921	0.032	0.032	
P(Bartlett's X2)	.		0.938	0.756	0.337	0.859	0.859	
Replicate F	0.000		53.787	23.230	9.573	13.694	13.696	
Replicate Prob(F)	1.0000		0.0042	0.0141	0.0480	0.0295	0.0295	
Treatment F	0.000		0.857	9.617	1.747	22.543	22.547	
Treatment Prob(F)	1.0000		0.4228	0.0533	0.2780	0.0177	0.0177	

Means followed by same letter do not significantly differ (P=.05, Duncan's New MRT)

ARM Action Codes

$$T1 = ([C9]/(1.2*[C8]))*10*((100-[C10])/100)*1.1111$$

$$T2 = (([11]*2.2046)/52)*0.4047$$

Trial Comments

MATERIAL AND METHODS:

Certified RR canola (var. Dekalb 73-65RR) was seeded on 11 Jun 2011. Spray applications were made on 29 Jun 2011 and 18 Jul 2011 at 276kPa and at a volume of 100 L/ha. A granular 23-17-17 PowerRich formulation was used. Crop injury and visual vigour ratings were taken at 7 and 29 DAA (Days after Application A). The canola was pushed (mechanically lodged) on Aug 22 and harvested on Sep 08. Yields have been adjusted to 10% moisture. The bu/ac conversion used a conversion factor of 52lb/bu.

WEATHER SUMMARY DATA

Month	Degree difference from normal temp		% normal precipitation
	Max.	Min.	
May	-4.1	+0.3	196.6%
June	-1.3	+1.6	99.8%
July	+1.4	+2.2	23.5%
August	+1.8	+1.4	21.3%
September	+2.7	+1.0	123.2%

RESULTS:

1. Crop Injury:

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No symptoms of crop injury were visible for either treatment. Adding PowerRich Foliar Phosphate to glyphosate or Lance did not increase crop injury compared to glyphosate or Lance alone.

2. Yields:

Treatment 2 (herbicide+fungicide+PowerRich Foliar Phosphate treatment) yielded significantly more than treatment 1 (herbicide+fungicide alone). The addition of PowerRich Foliar Phosphate to the glyphosate application and the Lance application showed an increase of 5.2 bu/ac over the glyphosate and Lance applications alone (50.6bu/ac compared to 45.4bu/ac)

CONCLUSION:

The addition of PowerRich Foliar Phosphate to Glyphosate and Lance fungicide applications increased yields significantly (5.2bu/ac) over Glyphosate and Lance applications alone. Crop safety was excellent.