Stripe rust fungicide trials for winter and spring wheat at NWARC

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IN-DEPTH LOOK AT COURSES

CURRENT NEWSLETTER

CURRENT RESEARCH

Small Grains for Montana Performance Evaluation and Recommendations

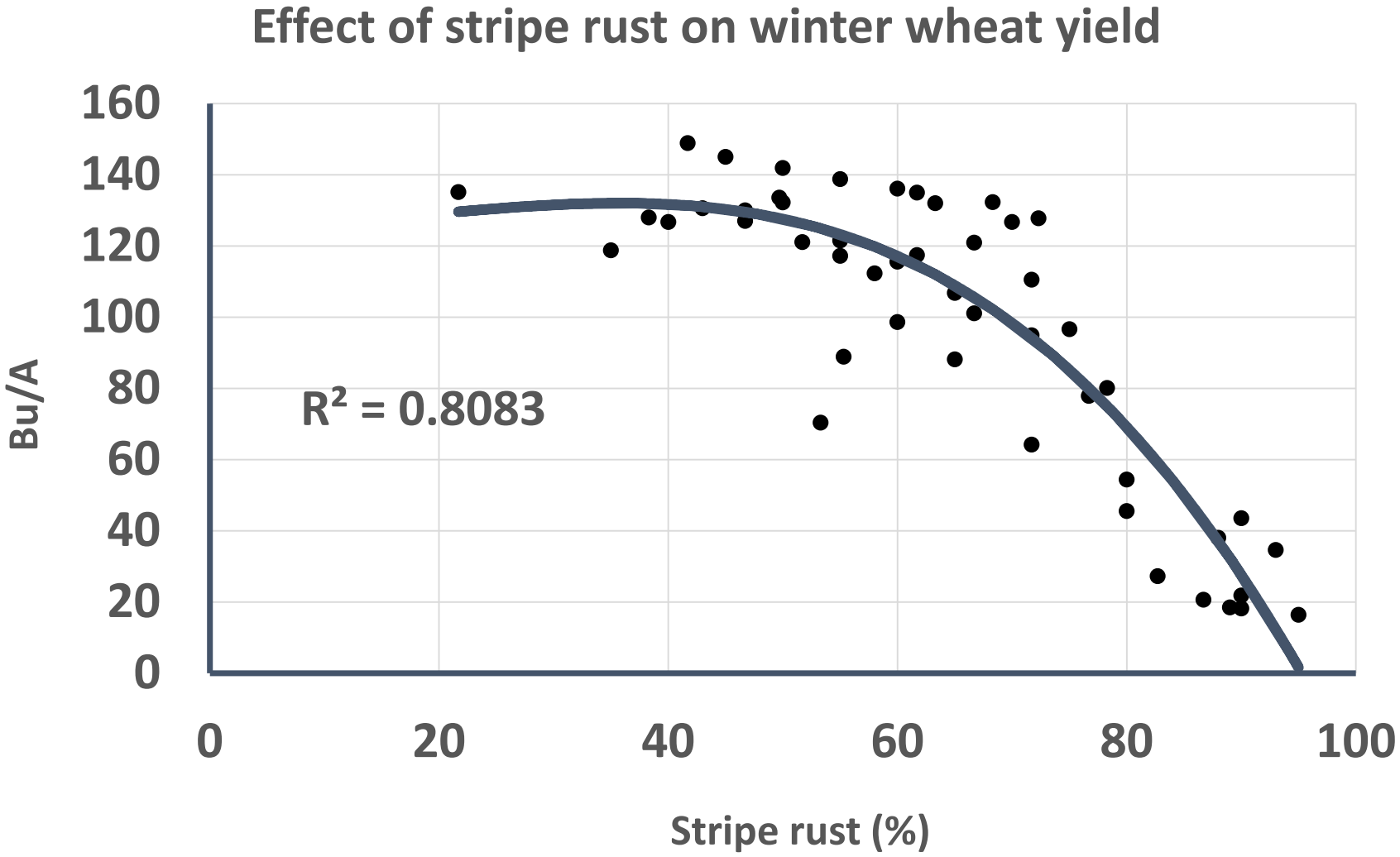
- 2016 Spring Wheat Variety Performance Evaluations and Recommendations
- 2016 Winter Wheat Variety Performance Evaluations and Recommendations
- 2016 Barley Variety Performance Evaluations and Recommendations
- 2015 Spring Wheat Variety Performance Evaluations and Recommendations
- 2015 Winter Wheat Variety Performance Evaluations and Recommendations
- 2014 Durum Performance Performance Evaluations
- 2014 Spring Wheat Variety Peformance Evaluations and Recommendations
- 2014 Winter Wheat Variety Performance Evaluations and Recommendations

Performance Evaluations and Recommendations 2001 - 2015

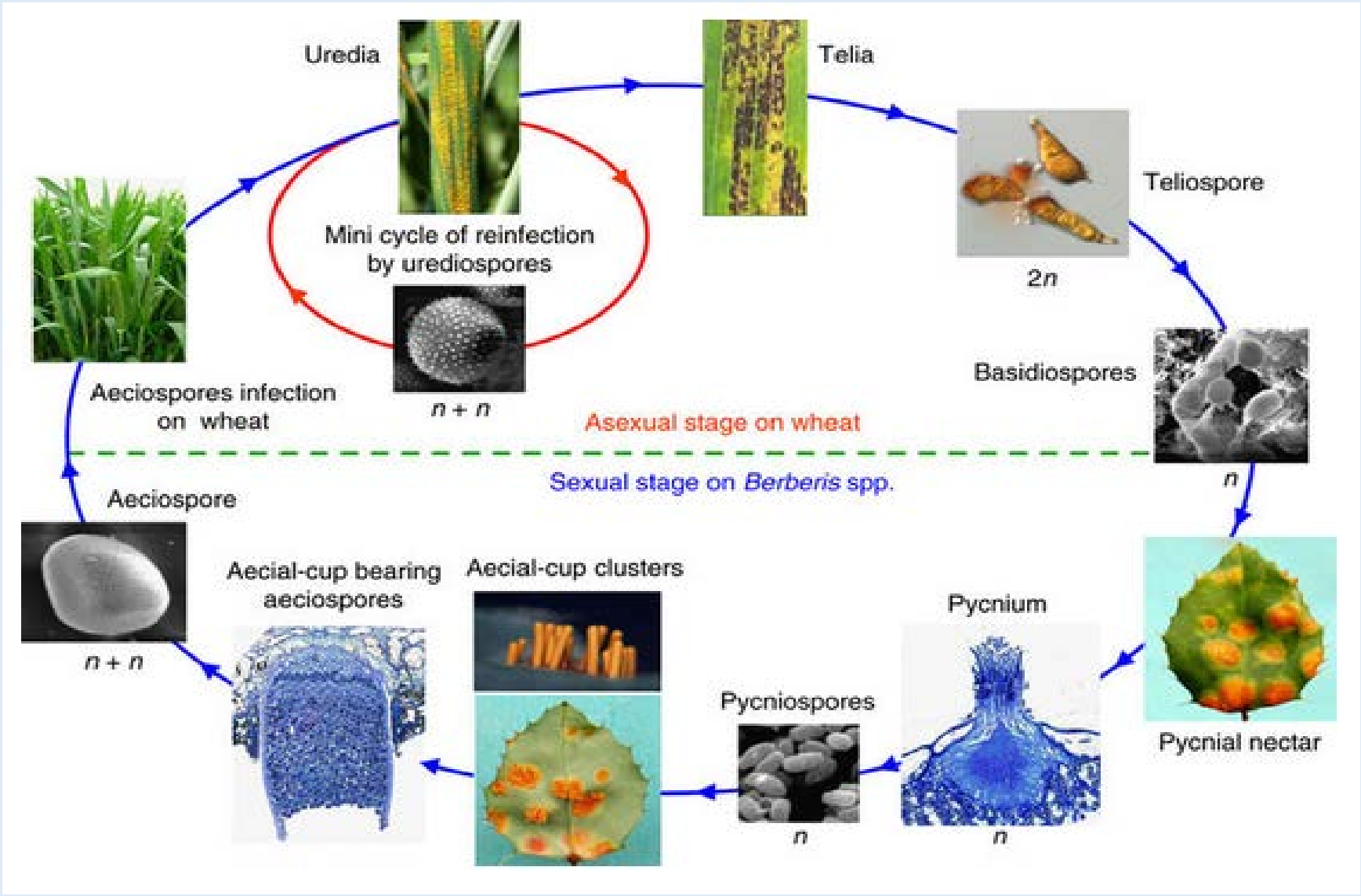
Montana Variety Trial Selection Tool - Customize the crop variety performance data for your location

Alfalfa Variety Data

State of Montana Growing Districts

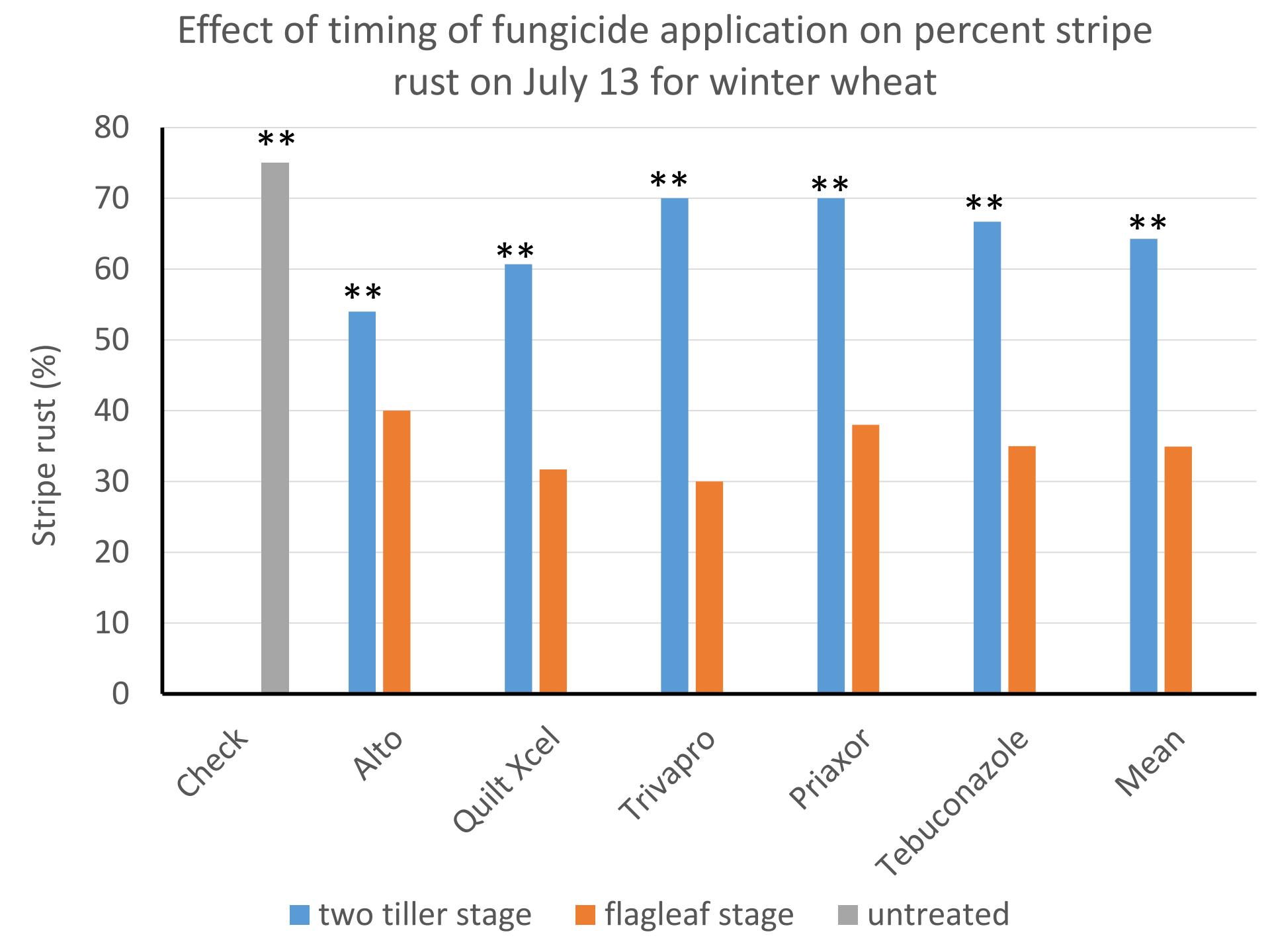

Effect of stripe rust on winter wheat yield
Bu/A
160
140
120
100
80
60
40
20
0
R² = 0.8083
0
20
40
60
80
100
Stripe rust (%)

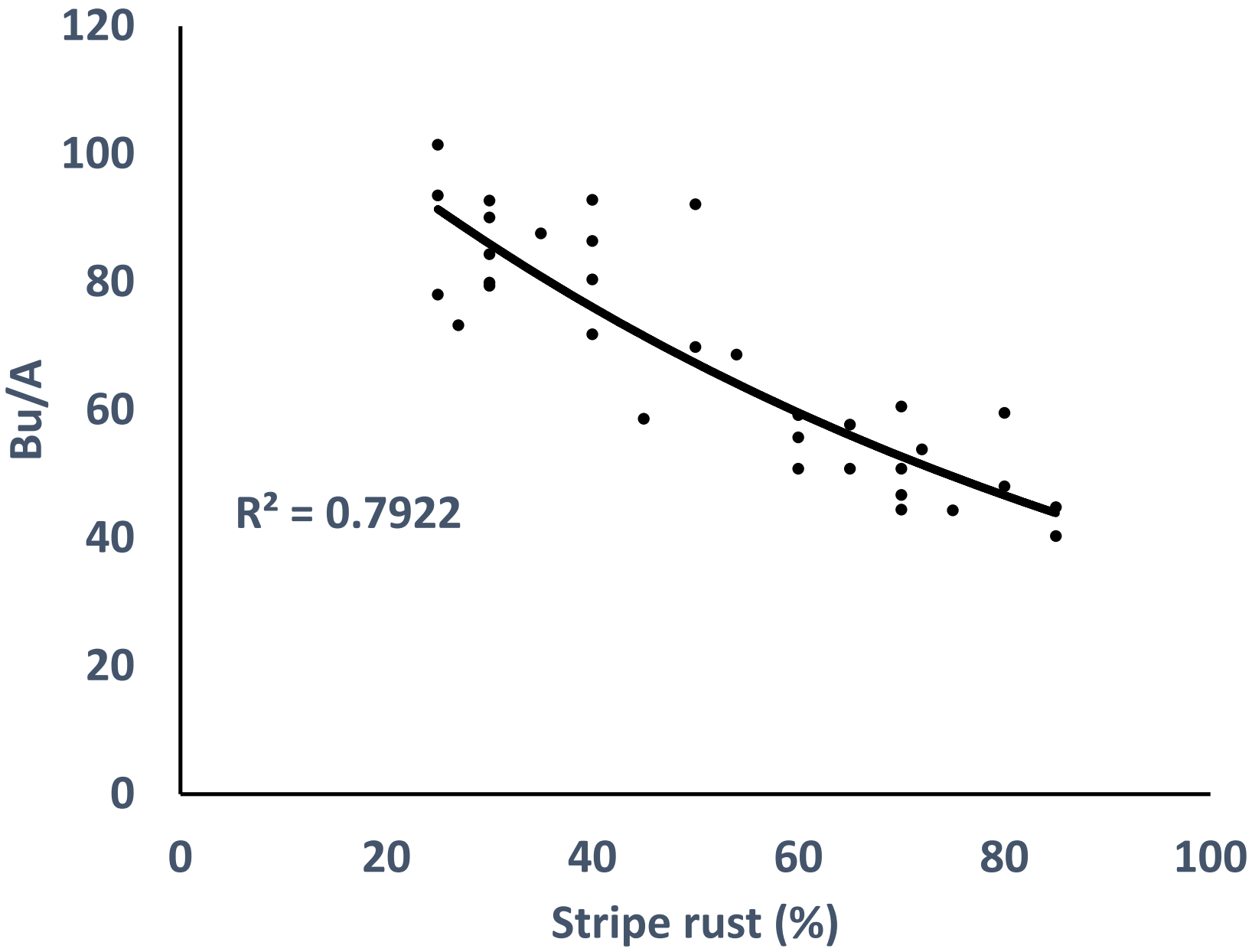
Stripe rust, *Puccinia striiformis f. sp. tritici* life cycle

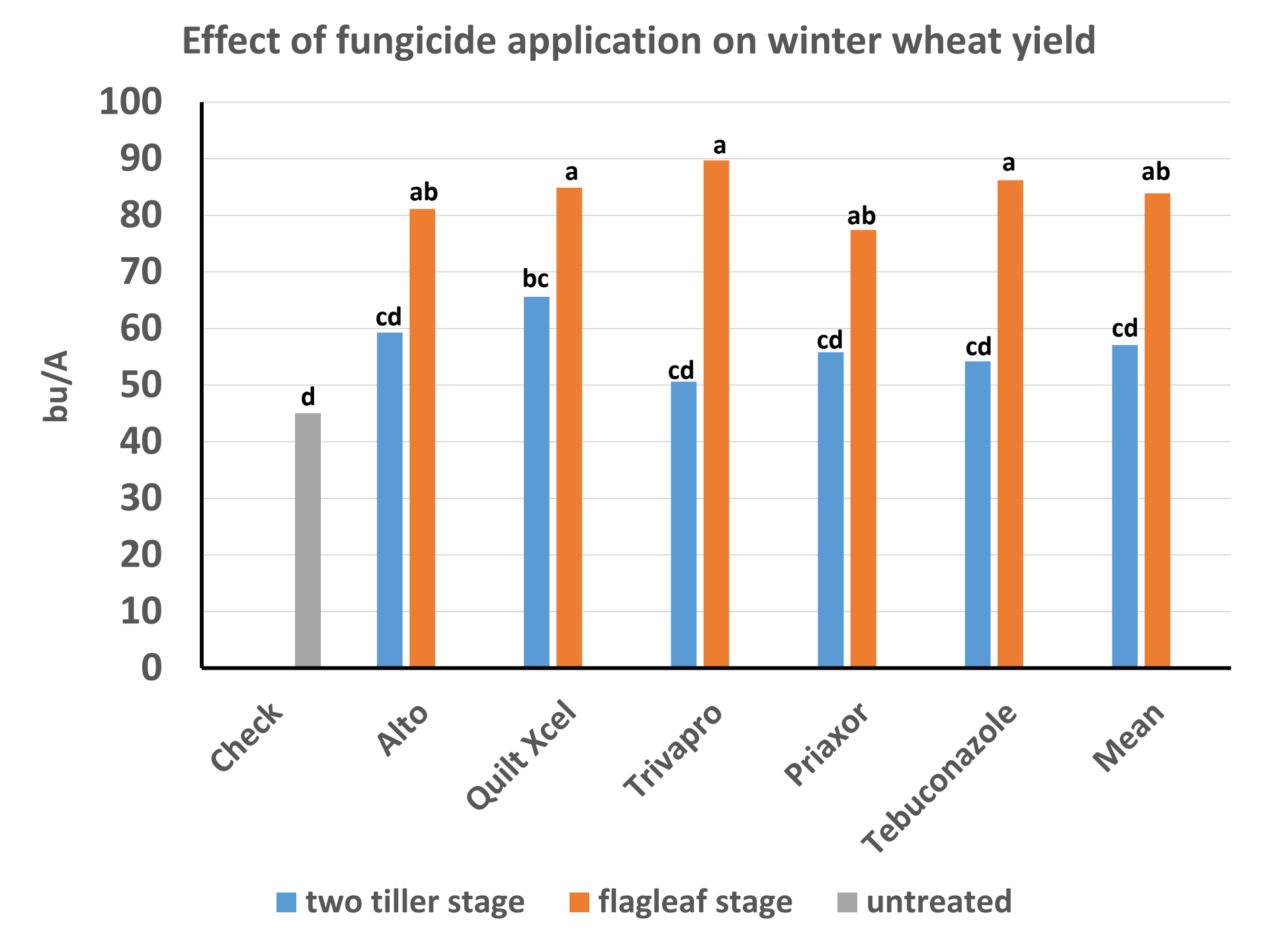


Winter wheat fungicide study

Treatment	Rate	Timing	FRAC	PHI
Check				
Alto	4fl oz/A	two tiller stage	3	30 days
Quilt Xcel	7fl oz/A	two tiller stage	3 + 11	Feekes 10.5
Trivapro	9.4fl oz/A	two tiller stage	7	Feekes 10.5
Priaxor	2fl oz/A	two tiller stage	7 + 11	Feekes 10.5
Tebuconazole	2fl oz/A	two tiller stage	3	30 days
Alto	4fl oz/A	flagleaf stage	3	30 days
Quilt Xcel	11fl oz/A	flagleaf stage	3+ 11	Feekes 10.5
Trivapro	14fl oz/A	flagleaf stage	7	Feekes 10.5
Priaxor	4fl oz/A	flagleaf stage	7 + 11	Feekes 10.5
Tebuconazole	4fl oz/A	flagleaf stage	3	30 days


Effect of timing of fungicide application on percent stripe rust on July 13 for winter wheat
Stripe rust (%)
80
70
60
50
40
30
20
10
0
**
**
**
**
**
**
**
Check
Alto
Quilt Xcel
Trivapro
Priaxor
Tebuconazole
Mean
two tiller stage
flagleaf stage
untreated


Effect of stipe rust on winter wheat yield
120
100
80
60
40
20
0
Bu/A
R² = 0.7922
0
20
40
60
80
100
Stripe rust (%)


Effect of fungicide application on winter wheat yield
bu/A
100
90
80
70
60
50
40
30
20
10
0
d
cd
ab
bc
a
cd
a
cd
ab
cd
a
cd
ab
Check
Alto
Quilt Xcel
Trivapro
Priaxor
Tebuconazole
Mean
two tiller stage
flagleaf stage
untreated

Fungicide price per acre

Product	Rate	Timing	Cost/A
Check			0.00
Alto	4 fl oz	two tiller stage	5.81
Quilt Xcel	7 fl oz	two tiller stage	9.79
Trivapro	9.4 fl oz	two tiller stage	11.74
Priaxor	2 fl oz	two tiller stage	8.91
Tebuconazole	2 fl oz	two tiller stage	1.25
Alto	4 fl oz	flag leaf stage	5.81
Quilt Xcel	10.5 fl oz	flag leaf stage	14.68
Trivapro	13.7 fl oz	flag leaf stage	17.01
Priaxor	4 fl oz	flag leaf stage	17.81
Tebuconazole	4 fl oz	flag leaf stage	2.50
Non-ionic surfactant	0.125 % v/v		0.89

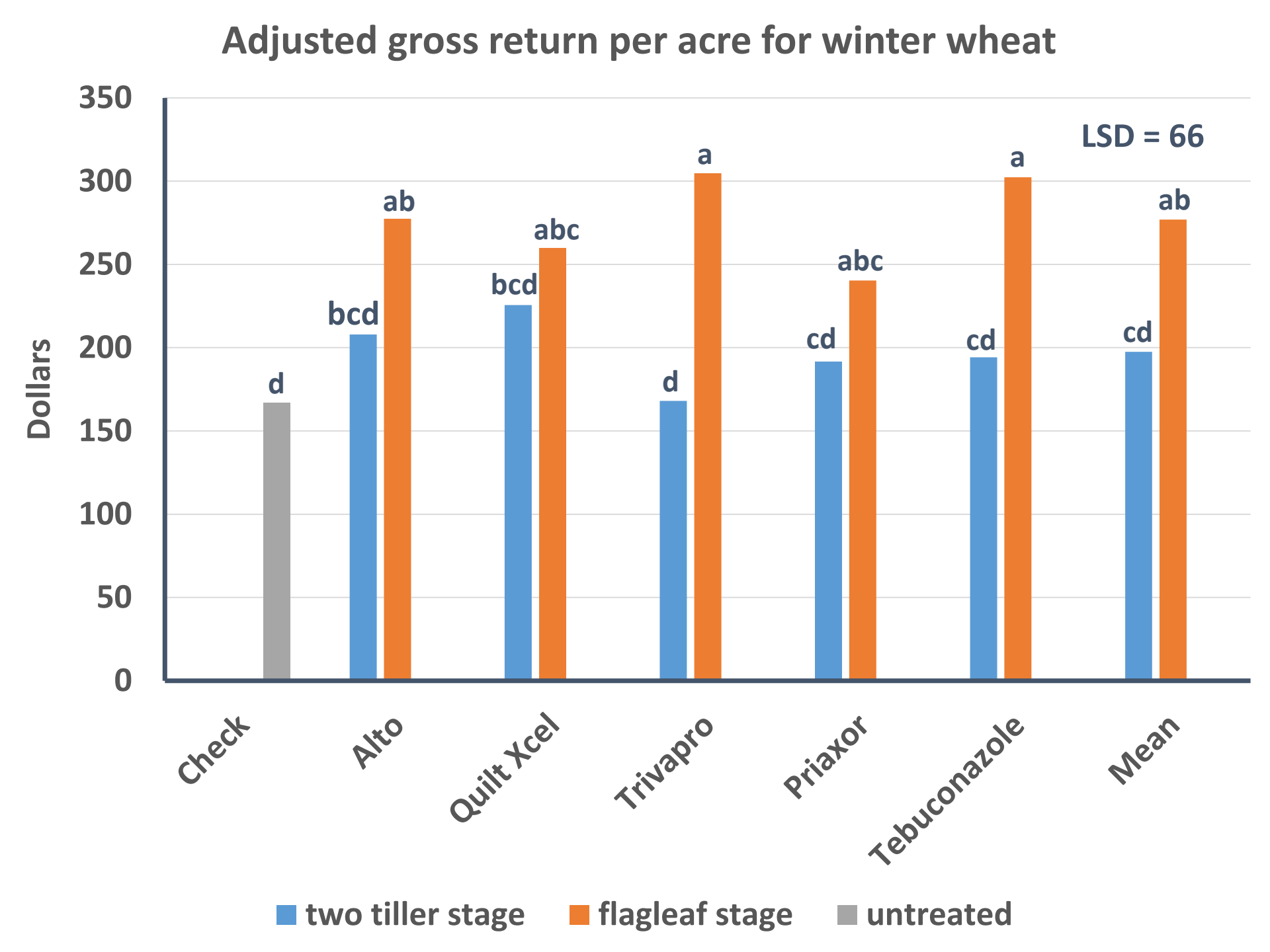
Adjusted gross return after fungicide application

Treatment	TWT Discount	FN Discount	PRO +/-	Premium Total	Net $	Yield bu/A	Gross $	Adj gross $
Check	-0.38	0	0.45	0.07	3.70	45.2	167	167
Alto	-0.32	0	0.50	0.18	3.81	59.3	226	208
Quilt Xcel	-0.32	0	0.50	0.18	3.81	65.6	250	226
Trivapro	-0.39	0	0.65	0.26	3.89	50.5	197	168
Priaxor	-0.41	0	0.55	0.14	3.77	56.0	211	192
Tebuconazole	-0.38	0	0.55	0.17	3.80	54.2	206	194
Alto	-0.18	0	0.17	-0.01	3.62	81.0	296	277
Quilt Xcel	-0.16	0	0.00	-0.16	3.47	84.9	293	260
Trivapro	-0.12	0	0.30	0.18	3.81	89.7	343	305
Priaxor	-0.20	0	0.07	-0.13	3.50	77.5	271	240
Tebuconazole	-0.10	0	0.12	0.02	3.65	86.1	317	302
Grand Mean	-0.3	0	0.35	0.1	3.7	68.2	252.5	230.8
CV	0.0	0	61.32	234.4	0.2	14.7	15.4	16.8
LSD P=.05	0.1	.	0.37	0.3	0.3	17.0	66.1	66.1
Pr>F	0.0001	1	0.0099	0.2091	0.2091	0.0001	0.0003	0.0011

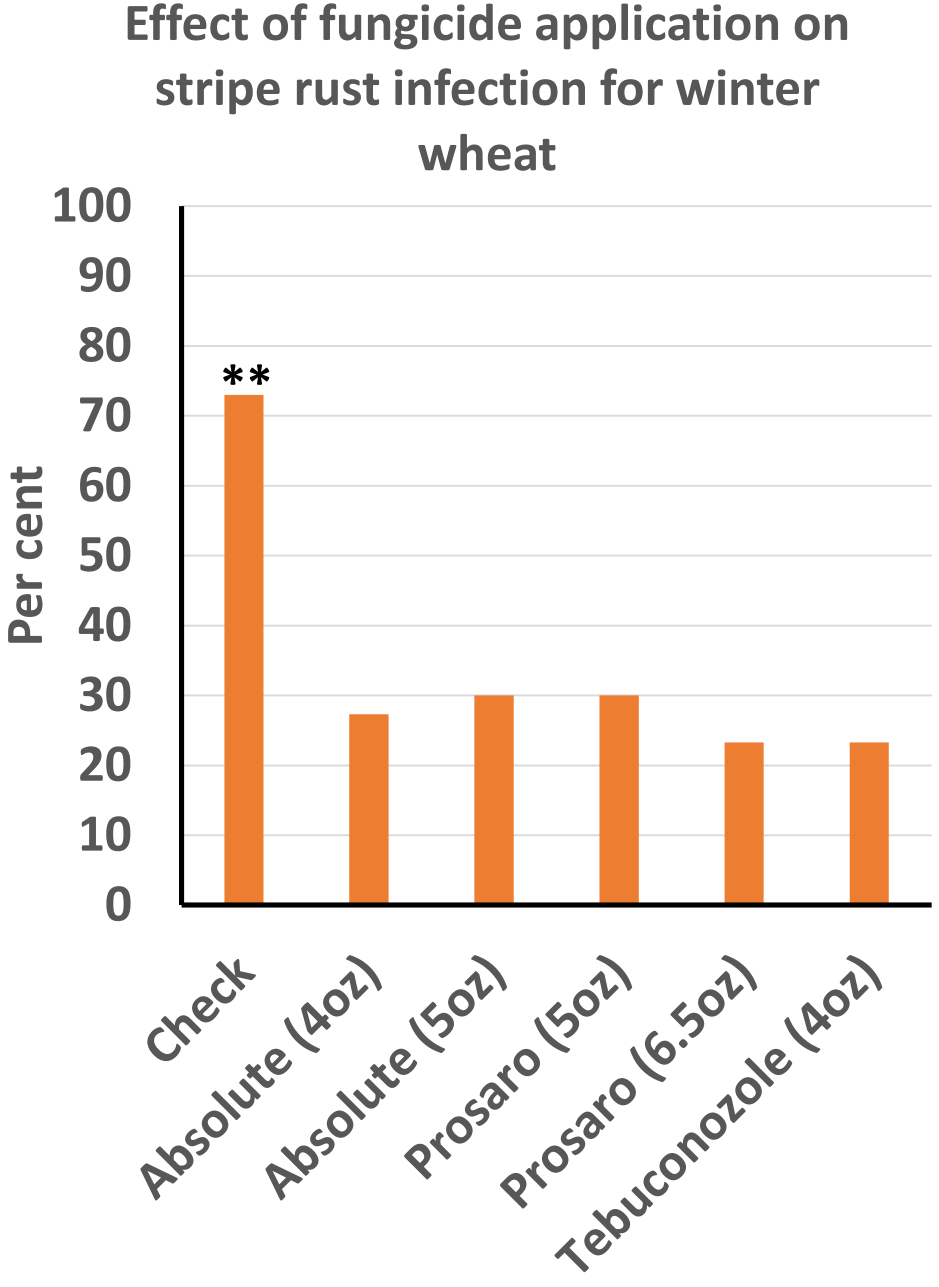
Net = premium total + price/bushel ($3.63)

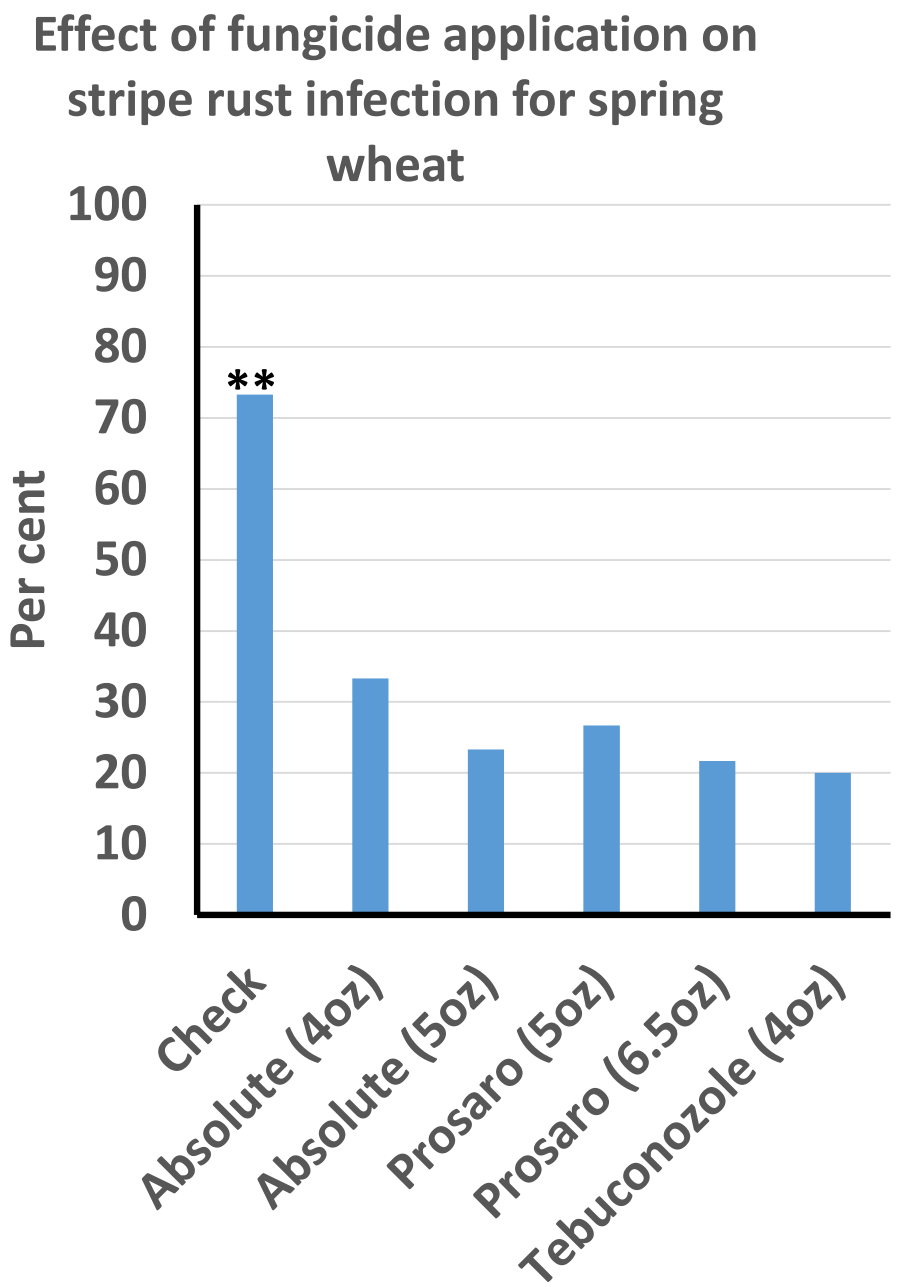
Gross = net * yield

Adjusted gross = gross - cost of application ($8/A) - fungicide and NIS cost per acre


Adjusted gross return per acre for winter wheat
Dollars
350
300
250
200
150
100
50
0
LSD = 66
d
bcd
ab
bcd
abc
d
a
cd
abc
cd
a
cd
ab
Check
Alto
Quilt Xcel
Trivapro
Priaxor
Tebuconazole
Mean
two tiller stage
flagleaf stage
untreated

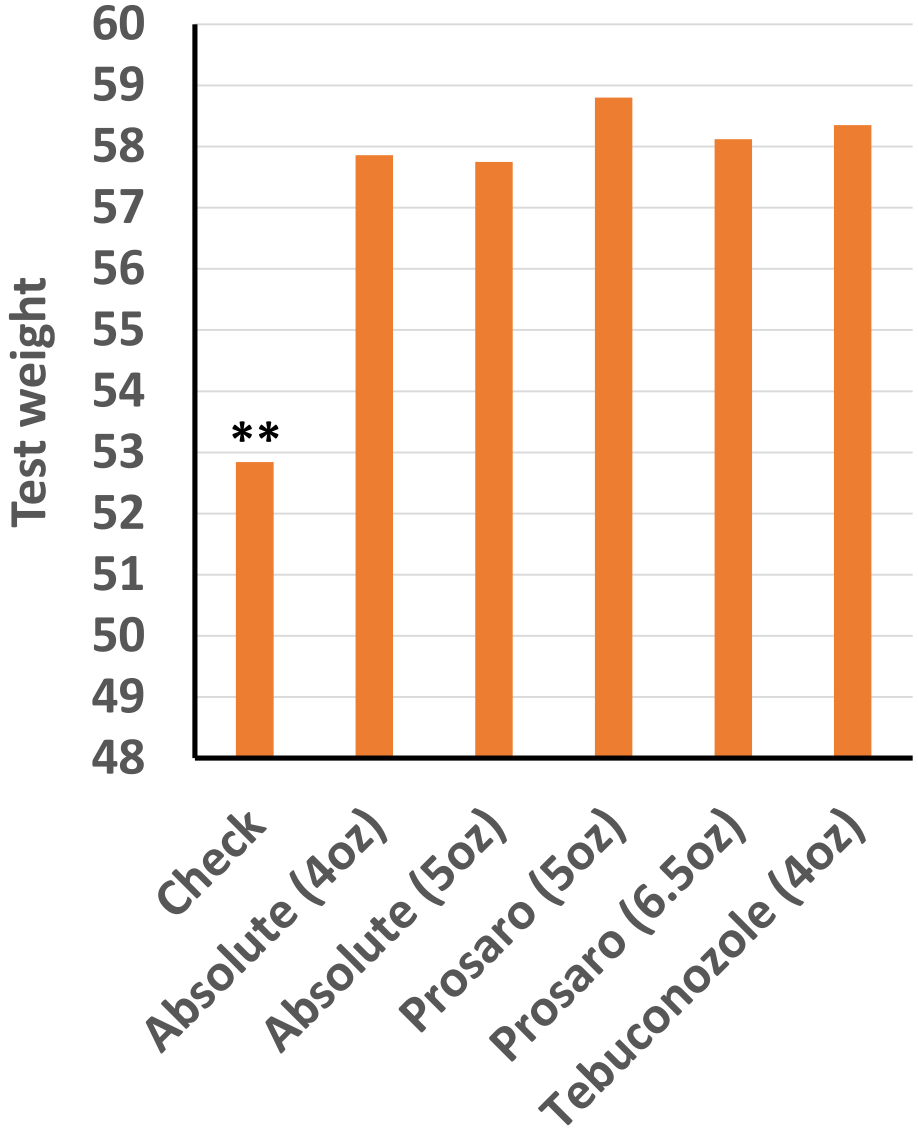

104
PROSARO
5 fl oz/A



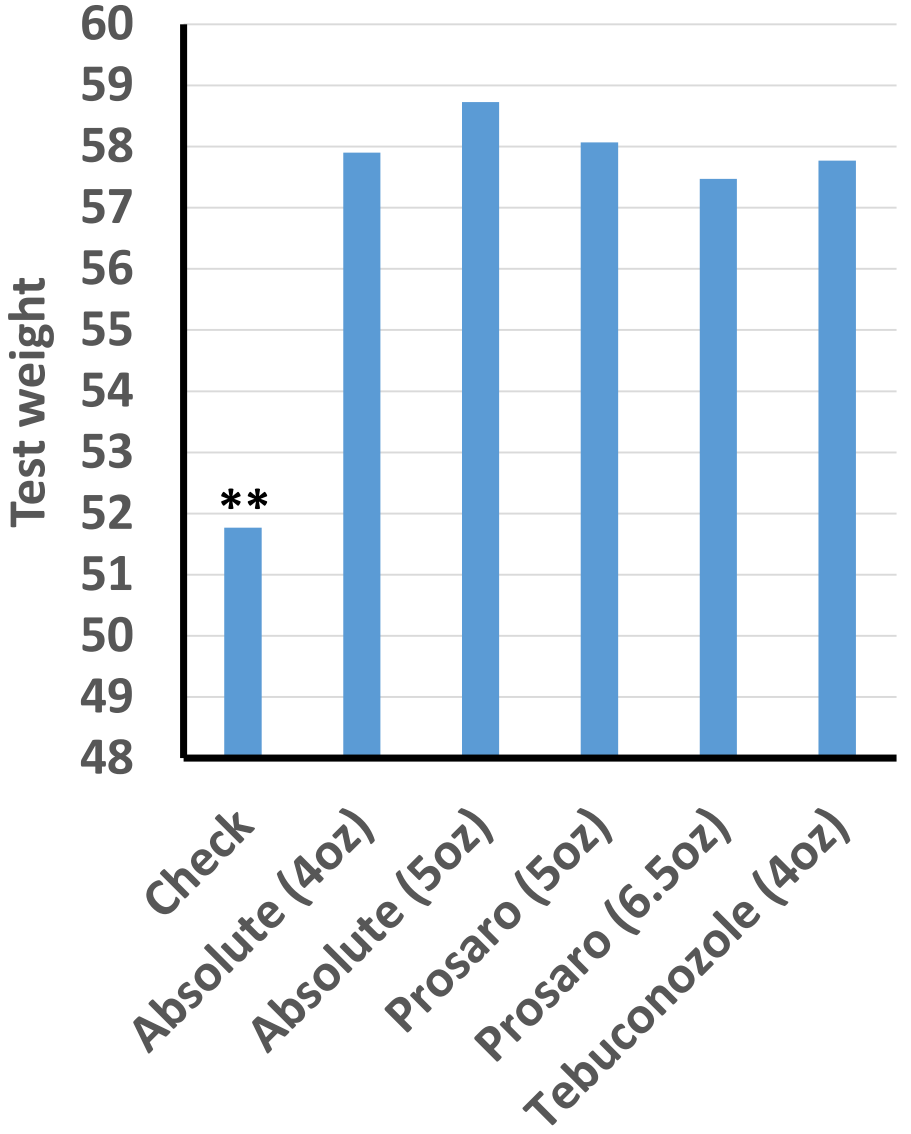


Labeled rate: Absolute 5-7.7 oz/A, Prosaro 5 oz/A, Tebuconazole 4 oz/A

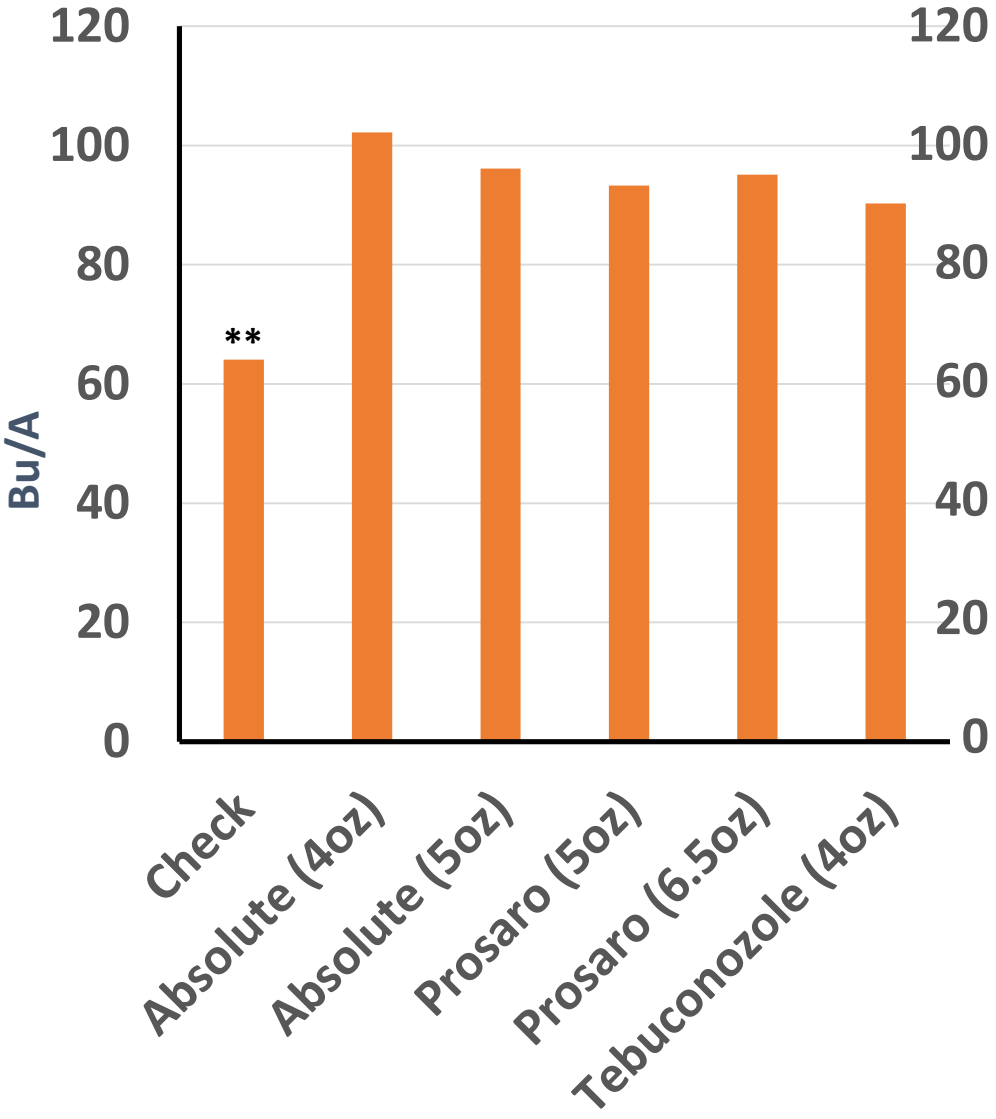
Effect of fungicide application on test weight for winter wheat



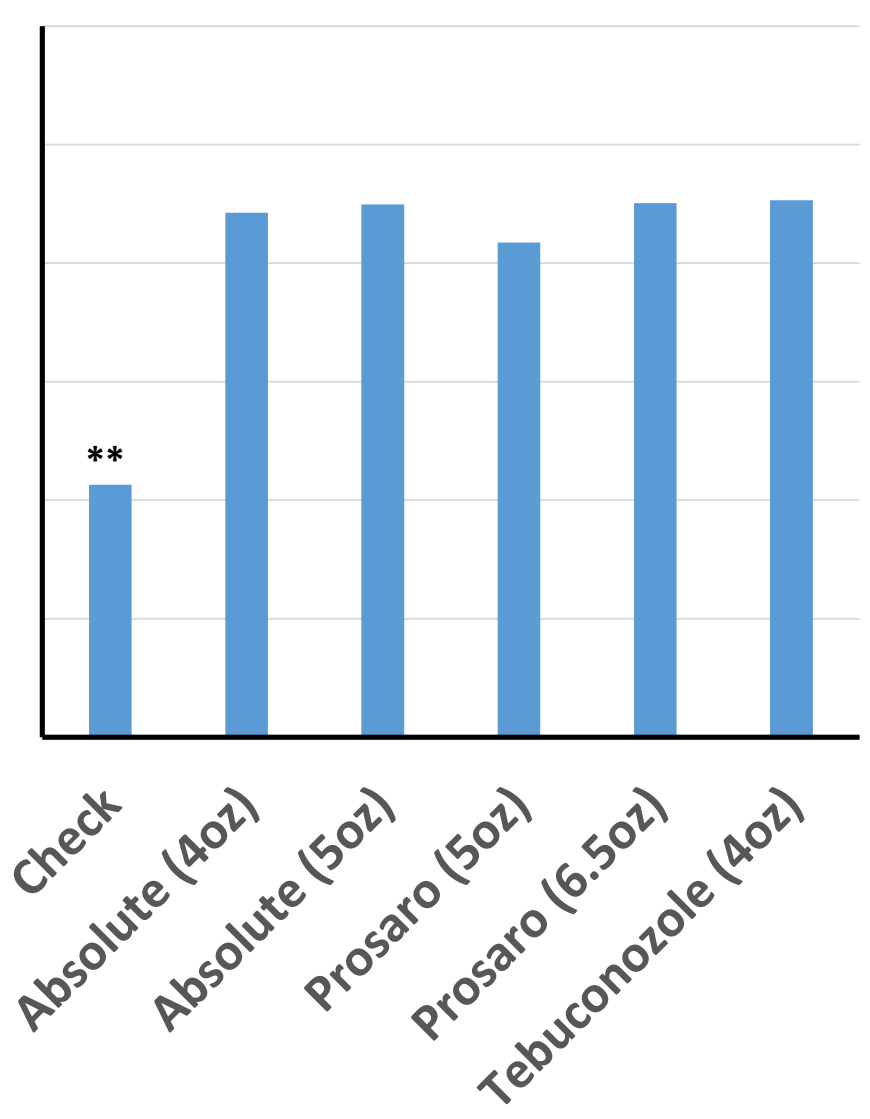
Effect of fungicide application on test weight for spring wheat



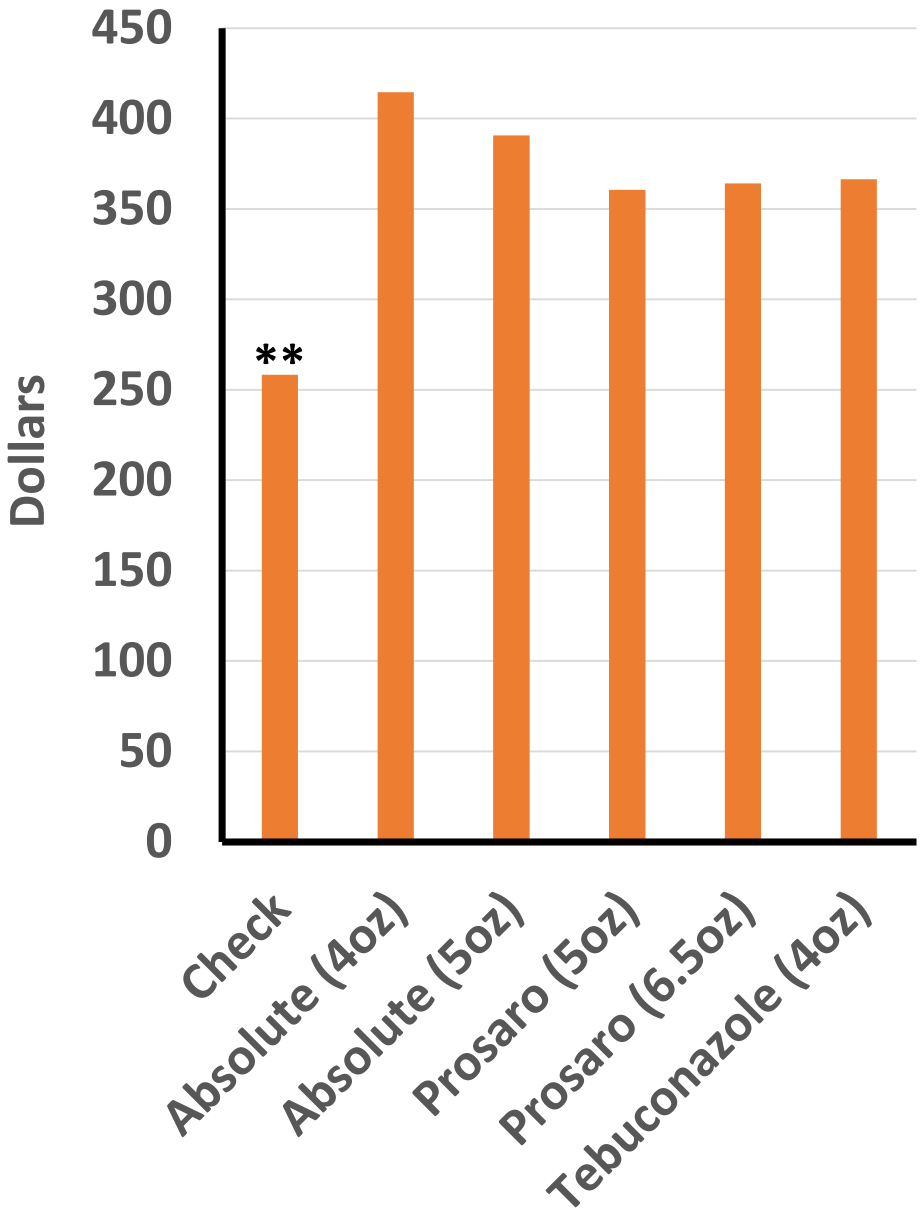
Effect of fungicides on winter wheat yield



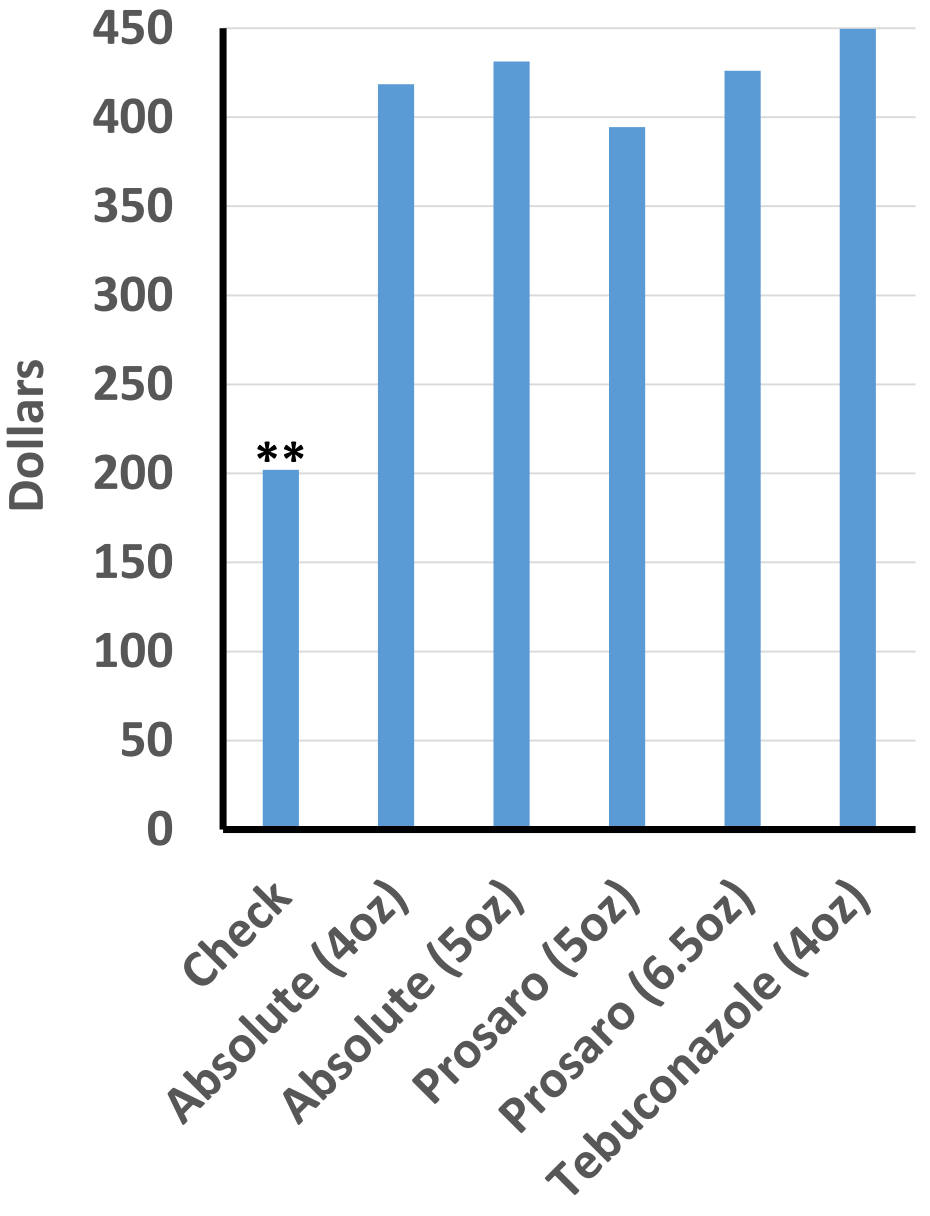
Effect of fungicides on spring wheat yield



Adjusted gross return for winter wheat

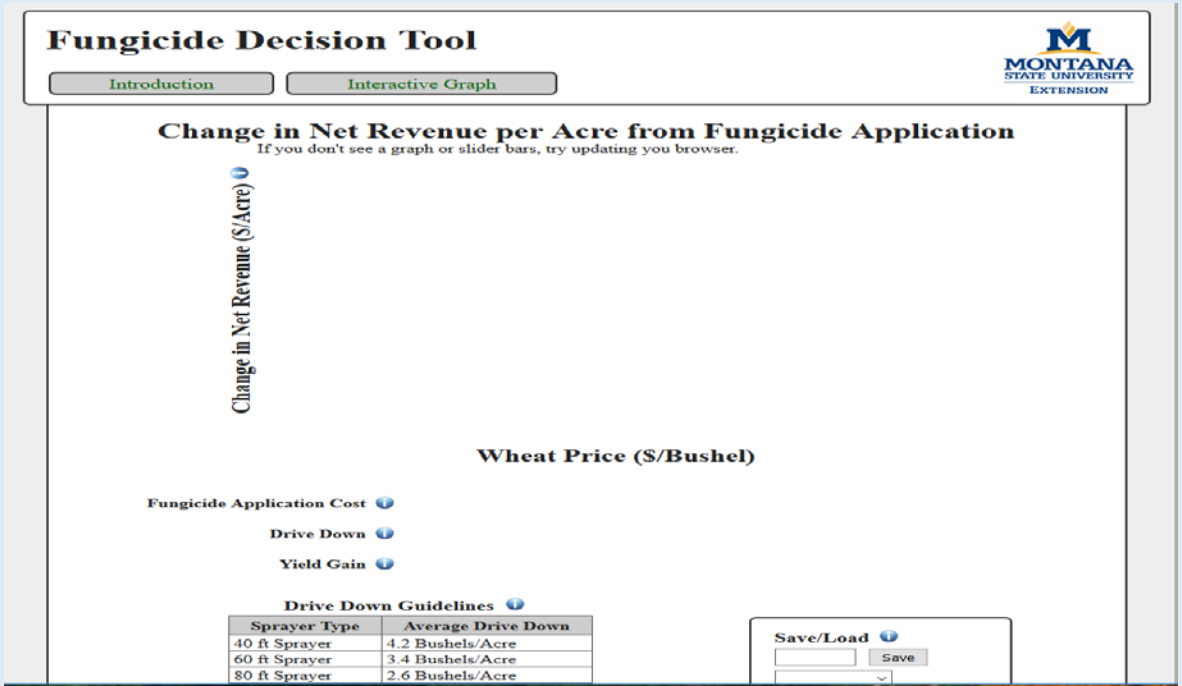


Adjusted gross return for spring wheat



An online tool that can help you decide whether or not to spray a fungicide given your anticipated economic return and the price of your crop.

https://www.msuextension.org/econtools/fungicide/pages/graph.html
or google MSU fungicide tool



MANAGEMENT

Use resistant varieties
Apply fungicides at flagleaf stage
Eliminate green bridge

Report new strains (rust infection on resistant varieties)
Bring in sample to have strain determined

Scout your fields and check MSU “AgAlerts” www.mtagalert.org

Management of Small Grain Diseases

Fungicide Efficacy for Control of Wheat Diseases (Revised 3-30-16)

The North Central Regional Committee on Management of Small Grain Diseases (NCERA-184) has developed the following information on fungicide efficacy for control of certain foliar diseases of wheat for use by the grain production industry in the U.S. Efficacy ratings for each fungicide listed in the table were determined by field testing the materials over multiple years and locations by the members of the committee. Efficacy is based on proper application timing to achieve optimum effectiveness of the fungicide as determined by labeled instructions and overall level of disease in the field at the time of application. Differences in efficacy among fungicide products were determined by direct comparisons among products in field tests and are based on a single application of the labeled rate as listed in the table. Table includes most widely marketed products, and is not intended to be a list of all labeled products.

Efficacy of fungicides for wheat disease control based on appropriate application timing

Fungicide(s)												
Class	Active ingredient	Product	Rate/A (fl. oz)	Powdery mildew	Stagonospora leaf/glume blotch	Septoria leaf blotch	Tan spot	Stripe rust	Leaf rust	Stem rust	Head scab	Harvest Restriction
Strobilurin	Picoxystrobin 22.5%	Aproach SC	6.0 – 12.0	G[1]	VG	VG[2]	VG	E[3]	VG	VG	NL	Feekes 10.5
	Fluoxastrobin 40.3%	Evito 480 SC	2.0 – 4.0	G	--	--	VG	--	VG	--	NL	Feekes 10.5 and 40 days
	Pyraclostrobin 23.6%	Headline SC	6.0 - 9.0	G	VG[2]	VG[2]	E	E[3]	E	G	NL	Feekes 10.5
Triazole	Metconazole 8.6%	Caramba 0.75 SL	10.0 - 17.0	VG	VG	--	VG	E	E	E	G	30 days
	Propiconazole 41.8%	Tilt 3.6 EC[4]	4.0	VG	VG	VG	VG	VG	VG	VG	P	Feekes 10.5
	Prothioconazole 41%	Proline 480 SC	5.0 - 5.7	--	VG	VG	VG	VG	VG	VG	G	30 days
	Tebuconazole 38.7%	Folicur 3.6 F[4]	4.0	NL	NL	NL	NL	E	E	E	F	30 days
	Prothioconazole19% Tebuconazole 19%	Prosaro 421 SC	6.5 - 8.2	G	VG	VG	VG	E	E	E	G	30 days
Mixed modes of action[5]	Tebuconazole 22.6% Trifloxystrobin 22.6%	Absolute Maxx SC	5.0	G	VG	VG	VG	VG	E	VG	NL	35 days
	Fluoxastrobin 14.8% Flutriafol 19.3%	Fortix	4.0 - 6.0	--	--	VG	VG	E	VG	--	NL	Feekes 10.5 and 40 days
	Benzovindiflupyr 10.3% Propiconazole 11.7% Azoxystrobin 13.5%	Trivapro A EC + Trivapro B SE	4.0 + 10.5	VG	VG	VG	VG	E	E	VG	NL	Feekes 10.5.4
	Metconazole 7.4% Pyraclostrobin 12%	TwinLine 1.75 EC	7.0 – 9.0	G	VG	VG	E	E	E	VG	NL	Feekes 10.5
	Fluxapyroxad 14.3% Pyraclostrobin 28.6%	Priaxor	4.0 - 8.0	G	VG	VG	E	VG	VG	G	NL	Feekes 10.5
	Propiconazole 11.7% Azoxystrobin 13.5%	Quilt Xcel 2.2 SE[4]	10.5 - 14.0	VG	VG	VG	VG	E	E	VG	NL	Feekes 10.5
	Prothioconazole 10.8% Trifloxystrobin 32.3%	Stratego YLD	4.0	G	VG	VG	VG	VG	VG	VG	NL	Feekes 10.5 35 days
	Cyproconazole 7.17% Picoxystrobin 17.94%	Aproach Prima SC	3.4-6.8	VG	VG	VG	VG	E	VG	--	NR	45 days

[1]Efficacy categories: NL = Not Labeled, NR = Not Recommended, P = Poor, F = Fair, G = Good, VG = Very Good, E = Excellent, -- = Insufficient data to make statement about efficacy of this product


QUESTIONS?