

University of Georgia

Determining the Time Interval Needed Between Osprey and UAN Applications.

Trial ID: Wheat2-06

Study Dir.: Andrew MacRae

Location: Plains

Investigator: Alan C. York

Reps: 4

Plots: 6 by 30 feet

Spray vol: 15 gal/ac

Mix size: 1.5 liters (min .93853)

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Form Unit	Rate Unit	Grow Stg	Appl Code	Spray Volume	Volume Unit	Amt Product to Measure	Plot No. By Rep			
												1	2	3	4
1	No Osprey UAN Day 0 sep. app	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx	113	211	310	402
2	No Osprey UAN Day 7	L		30	GAL/A		POST-3	C	30	GAL/AC	1499.8 ml/mx	112	201	308	410
3	No Osprey UAN Day 14	L		30	GAL/A		POST-4	D	30	GAL/AC	1499.8 ml/mx	109	202	306	407
4	No Osprey UAN Day 21	L		30	GAL/A		POST-5	E	30	GAL/AC	1499.8 ml/mx	102	203	311	414
5	Osprey	4.5	DF	4.75	OZ/A		POST-1	A	15	GAL/AC	3.557 g/mx	114	204	312	401
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 0 sep. app	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx				
6	Osprey	4.5	DF	4.75	OZ/A		POST-1	A	15	GAL/AC	3.557 g/mx	115	212	307	409
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 7	L		30	GAL/A		POST-3	C	30	GAL/AC	1499.8 ml/mx				
7	Osprey	4.5	DF	4.75	OZ/A		POST-1	A	15	GAL/AC	3.557 g/mx	106	205	301	415
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 14	L		30	GAL/A		POST-4	D	30	GAL/AC	1499.8 ml/mx				
8	Osprey	4.5	DF	4.75	OZ/A		POST-1	A	15	GAL/AC	3.557 g/mx	103	210	313	412
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 21	L		30	GAL/A		POST-5	E	30	GAL/AC	1499.8 ml/mx				
9	Osprey	4.5	DF	9.5	OZ/A		POST-1	A	15	GAL/AC	7.115 g/mx	107	208	309	404
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 0 sep. app	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx				
10	Osprey	4.5	DF	9.5	OZ/A		POST-1	A	15	GAL/AC	7.115 g/mx	104	209	302	411
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 7	L		30	GAL/A		POST-3	C	30	GAL/AC	1499.8 ml/mx				
11	Osprey	4.5	DF	9.5	OZ/A		POST-1	A	15	GAL/AC	7.115 g/mx	111	206	305	406
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 14	L		30	GAL/A		POST-4	D	30	GAL/AC	1499.8 ml/mx				
12	Osprey	4.5	DF	9.5	OZ/A		POST-1	A	15	GAL/AC	7.115 g/mx	101	215	303	413
	NIS	L		0.5	% V/V		POST-1	A	15	GAL/AC	7.499 ml/mx				
	UAN	L		2	QT/A		POST-1	A	15	GAL/AC	49.99 ml/mx				
	UAN Day 21	L		30	GAL/A		POST-5	E	30	GAL/AC	1499.8 ml/mx				
13	UAN Day 0 tank mix	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx	108	214	315	405
	NIS	L		0.5	% V/V		POST-2	B	30	GAL/AC	7.499 ml/mx				
14	Osprey	4.5	DF	4.75	OZ/A		POST-2	B	30	GAL/AC	1.779 g/mx	105	213	304	408
	NIS	L		0.5	% V/V		POST-2	B	30	GAL/AC	7.499 ml/mx				
	UAN Day 0 tank mix	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx				
15	Osprey	4.5	DF	9.5	OZ/A		POST-2	B	30	GAL/AC	3.557 g/mx	110	207	314	403
	NIS	L		0.5	% V/V		POST-2	B	30	GAL/AC	7.499 ml/mx				
	UAN Day 0 tank mix	L		30	GAL/A		POST-2	B	30	GAL/AC	1499.8 ml/mx				

Sort Order: Treatment

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Reps: 4 Plots: 6 by 30 feet
 Spray vol: 15 gal/ac Mix size: 1.5 liters (min .93853)

Trt No.	Treatment Name	Form Conc	Form Type	Form Rate	Form Unit	Rate Stg	Grow Code	Appl Volume	Spray Volume	Volume Unit	Amt to Measure	Product 1	Plot No. 2	By Rep 3	4
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Product quantities required for listed treatments and applications in one trial:

Amount*	Unit	Treatment Name	Form Conc	Form Type	Lot Code
5,624.406	ml	UAN Day 0 sep. app		L	
5,624.406	ml	UAN Day 7		L	
5,624.406	ml	UAN Day 14		L	
5,624.406	ml	UAN Day 21		L	
60.030	g	Osprey	4.5	DF	
103.114	ml	NIS		L	
499.947	ml	UAN		L	
5,624.406	ml	UAN Day 0 tank mix		L	

- * 'Per area' calculations based on spray volume= 15,30 gal/ac, mix size= 1.5 liters (mix size basis).
- * Product amount calculations increased 25 % for overage adjustment.
- * 'Per volume' calculations use spray volume= 15,30 gal/ac, mix size= 1.5 liters.

Trial Comments

OBJECTIVE: Determine the time line needed between Osprey application and fertilizing.

VISUAL WHEAT RESPONSE:

1. UAN applied alone caused less than 5% burn throughout the season. Leaf burn when mixing NIS with UAN exceeded 16%.
2. Mixing Osprey with UAN caused as much as 48% injury, rate of Osprey had little impact.
3. Applying UAN the same day but in separate applications as Osprey caused as much as 30 to 38% injury.
4. Applying UAN 7 d after Osprey caused as much as 11-12% injury.
5. Applying UAN 14 or 21 day after Osprey caused less than 7% injury.

BIOMASS MEASUREMENTS:

1. One meter of row was harvested and weighed on two occasions, at 20 and 35 d after the Osprey applications.
2. The only significant herbicide/UAN differences were noted when Osprey and UAN were applied on the same day, both as tank mixtures or sequential applications.
3. Time of UAN application did impact the biomass measurements as anticipated.

WHEAT YIELD:

1. When mixing Osprey plus UAN yield was reduced 11 to 14%.
2. When applying Osprey and UAN sequentially on the same day there was an obvious trend for a 9 to 10% yield loss.
3. As long as Osprey and UAN were not applied on the same day there was no trend for treatments impacting yield.

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Determining the Time Interval Needed Between Osprey and UAN Applications.

Trial ID: Wheat2-06

Study Dir.: Andrew MacRae

Location: Plains

Investigator: Alan C. York

Weed Code					Harv 1	Harv 2	Yield	Yield	
Crop Code	wheat	wheat	wheat	wheat	wheat	wheat	wheat	wheat	
Part Rated					biomas	biomas	seed	seed	
Rating Data Type	stunting	stunting	stunting	stunting	1 meter	1 meter	plot	YIELD	
Rating Unit	percent	percent	percent	percent	wt/kg	wt/grams	wt/lb	BU	
Rating Date	Jan-19-06	Jan-27-06	Mar-04-06	Apr-18-06	Feb-01-06	Feb-16-06	May-22-06	May-22-06	
Assessed By	AM	SC	SC	AM	AD	AD	TG	TG	
Trt-Eval Interval	71 DA-A	79 DA-A	115 DA-A	160 DA-A	84 DA-A	99 DA-A	195 DA-A	195 DA-A	
ARM Action Codes								TY1	
# Subsamples, Dec.								1	
Trt Treatment	Rate								
No. Name	Rate Unit	1	2	3	4	5	6	7	8
1 No Osprey UAN Day 0 sep. app	30 GAL/A	1 de	0 d	0 c	0 a	0 a	148 a	18 ab	88.9 ab
2 No Osprey UAN Day 7	30 GAL/A	0 e	5 cd	0 c	0 a	0 b-e	79 bc	18 abc	88.2 abc
3 No Osprey UAN Day 14	30 GAL/A	0 e	4 cd	0 c	0 a	0 b-e	56 cd	18 ab	88.7 ab
4 No Osprey UAN Day 21	30 GAL/A	0 e	5 cd	5 a	0 a	0 b-e	41 d	19 ab	90.9 ab
5 Osprey NIS UAN UAN Day 0 sep. app	4.75 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	16 c	30 b	0 c	0 a	0 b-e	68 bcd	17 cde	82.3 cde
6 Osprey NIS UAN UAN Day 7	4.75 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	4 de	11 c	0 c	0 a	0 bcd	68 bcd	18 abc	87.9 abc
7 Osprey NIS UAN UAN Day 14	4.75 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	3 de	6 cd	0 c	0 a	0 bcd	61 cd	19 a	93.0 a
8 Osprey NIS UAN UAN Day 21	4.75 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	3 de	6 cd	5 a	0 a	0 bcd	41 d	18 ab	89.1 ab
9 Osprey NIS UAN UAN Day 0 sep. app	9.5 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	25 b	39 a	0 c	0 a	0 de	47 cd	17 de	81.0 de
10 Osprey NIS UAN UAN Day 7	9.5 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	5 d	12 c	0 c	0 a	0 bc	65 cd	19 ab	90.0 ab
11 Osprey NIS UAN UAN Day 14	9.5 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	6 d	7 cd	0 c	0 a	0 b-e	49 cd	18 bcd	86.4 bcd
12 Osprey NIS UAN UAN Day 21	9.5 OZ/A 0.5 % V/V 2 QT/A 30 GAL/A	5 de	7 cd	6 a	0 a	0 bcd	34 d	18 ab	89.4 ab
13 UAN Day 0 tank mix NIS	30 GAL/A 0.5 % V/V	16 c	2 d	0 c	0 a	0 b	100 b	18 abc	88.3 abc

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Weed Code										
Crop Code	wheat	wheat	wheat	wheat	wheat	wheat	wheat	wheat	wheat	wheat
Part Rated										
Rating Data Type	stunting	stunting	stunting	stunting	1 meter	1 meter	seed	seed	seed	seed
Rating Unit	percent	percent	percent	percent	wt/kg	wt/grams	plot	plot	plot	plot
Rating Date	Jan-19-06	Jan-27-06	Mar-04-06	Apr-18-06	Feb-01-06	Feb-16-06	May-22-06	May-22-06	May-22-06	May-22-06
Assessed By	AM	SC	SC	AM	AD	AD	TG	TG	TG	TG
Trt-Eval Interval	71 DA-A	79 DA-A	115 DA-A	160 DA-A	84 DA-A	99 DA-A	195 DA-A	195 DA-A	195 DA-A	195 DA-A
ARM Action Codes										TY1
# Subsamples, Dec.										1
Trt Treatment										
Rate										
No. Name										
14 Osprey	4.75 OZ/A	48 a	31 b	3 b	0 a	0 cde	52 cd	16 e	76.6 e	
NIS	0.5 % V/V									
UAN Day 0 tank mix	30 GAL/A									
15 Osprey	9.5 OZ/A	48 a	37 ab	0 c	0 a	0 e	49 cd	16 e	79.6 e	
NIS	0.5 % V/V									
UAN Day 0 tank mix	30 GAL/A									
LSD (P=.05)		4.2	6.9	2.1	0.0	0.0	31.6	1.2	5.59	
Standard Deviation		2.9	4.8	1.5	0.0	0.0	22.1	0.8	3.92	
CV		24.43	36.19	118.27	0.0	21.37	34.65	4.52	4.52	
Bartlett's X2		26.047	20.293	9.97	0.0	21.568	27.081	20.963	20.956	
P(Bartlett's X2)		0.004*	0.088	0.007*	.	0.088	0.019*	0.103	0.103	

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

Column 8: TY1 = 4.84*[C7]

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Determining the Time Interval Needed Between Osprey and UAN Applications.

Trial ID: Wheat2-06 Study Dir.: Andrew MacRae
Location: Plains Investigator: Alan C. York

GENERAL TRIAL INFORMATION

Study Director: Stanley Culpepper **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794
Investigator: Andrew MacRae **Title:** Ext. Weed Science
Affiliation: Univ. of Georgia
Postal Code: 31794

TRIAL LOCATION

City: Plains **Trial Status:** completed
State/Prov.: GA **Trial Reliability:** excellent
Postal Code: _____ **Initiation Date:** Nov-09-05
Country: USA **Planned Completion Date:** _____
E-Longitude of LL Corner °: _____ **N-Latitude of LL Corner °:** _____
Altitude of LL Corner: _____ **Unit:** _____ **Angle y-axis to North °:** _____
Directions:

COOPERATOR/LANDOWNER

Cooperator: _____ **Country:** _____
Org: _____ **Phone No:** _____
Address 1: _____ **Fax No:** _____
Address 2: _____
City: _____
State/Prov: _____
Postal Code: _____

Conducted Under GLP (Y/N): N **Conducted Under GEP (Y/N):** N
Guidelines: _____ **Guideline Description:** _____

Objective:

Conclusions:

CROP AND WEED DESCRIPTION

Weed	Code	Common Name	Scientific Name
1.	.		

Crop 1: TRZAW WHEAT, WINTER **Variety:** Pioneer 26R12
Planting Date: Nov-09-05 **Planting Method:** drilled
Rate: 1.5 bu/A **Depth:** 0.75 in **Perennial Age:** _____
Row Spacing: 7.5 inch **Spacing Within Row:** _____ **Seed Bed:** flat
Soil Temperature: 83 F **Soil Moisture:** fair/irrigat **Emergence Date:** Nov-16-05

SITE AND DESIGN

Plot Width, Unit: 6 FT **Plot Length, Unit:** 30 FT **Reps:** 4
Site Type: Plains Research Station
Tillage Type: Conventional **Study Design:** FACTORIAL

Trial Initiation Comments:

	Previous Crops	Previous Pesticides	Year
1.			

MAINTENANCE

Field Prep./Maintenance:

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No.	Date	Maintenance Treatment Name	Form Conc	Form Unit	Form Type	Rate	Rate Unit
1.							

SOIL DESCRIPTION

% Sand: 80 % OM: 1.6 Texture: loamy sand
 % Silt: 10 pH: 6.0 Soil Name: _____
 % Clay: 10 CEC: _____ Fert. Level: _____

ADDITIONAL MEASURED ELEMENTS

Element	Quantity	Unit

MOISTURE CONDITIONS

No.	Date	Time	Amount	Unit	Type	Interval	Unit
1.							

Overall Moisture Conditions: irrigated

Closest Weather Station: _____ Distance: _____ Unit: __

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	Jan-12-06	Jan-12-06	Jan-19-06	Jan-27-06	Feb-09-06
Time of Day:	9 am	12 pm	9 am	9 am	4 pm
Application Method:	broadcast	broadcast	broadcast	broadcast	broadcast
Application Timing:	POST1	POST2	POST3	POST4	POST5
Applic. Placement:	overtop	overtop	overtop	overtop	overtop
Air Temp., Unit:	54 F	67 F	41 F	46 F	51 F
% Relative Humidity:	67	53	50	40	27
Wind Velocity, Unit:	0 mph	3 mph	1 mph	4 mph	4 mph
Dew Presence (Y/N):	y	n	n	n	n
Water Hardness:					
Soil Temp., Unit:	62 F	68 F	37 F	45 F	55 F
Soil Moisture:	moist	moist	moist	moist	moist
% Cloud Cover:	50	90	0	15	2

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	TRZAW .	TRZAW .	TRZAW .	TRZAW .	TRZAW .
Stage Scale:	3 tiller	3 tiller	3 tiller	3 tiller	5 tiller
Height, Unit:	4 inch	4 inch	6 inch	8 inch	9 inch

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code, Stage:	.				
Stage Scale:	.				
Density, Unit:	.	.			

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APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	backpack	backpack	backpack	backpack	backpack
Operating Pressure:	24	24	24	24	24
Nozzle Type:	flat fan	flat fan	flat fan	flat fan	flat fan
Nozzle Size:	11002	11004XR	11004XR	11004XR	11004XR
Nozzle Spacing, Unit:	18 in	18 in	18 in	18 in	18 in
Nozzles/Row:	1	1	1	1	1
Band Width, Unit:					
Boom Length, Unit:	4.5 feet	4.5 feet	4.5 feet	4.5 feet	4.5 feet
Boom Height, Unit:	15 inch	15 inch	15 inch	15 inch	15 inch
Ground Speed, Unit:	3 mph	3 mph	3 mph	3 mph	3 mph
Incorporation Equip.:					
Hours to Incorp.:					
Incorp. Depth, Unit:					
Carrier:	water	water	water	water	water
Spray Volume, Unit:	14.8 GPA	30 GPA	30 GPA	30 GPA	30 GPA
Spray pH:					
Propellant:	CO2	CO2	CO2	CO2	CO2
Tank Mix (Y/N):	y	y	y	y	y

Trt No	Treatment Application Comment