

Effect of Soil Residual on Weed Spectrum at Postemergence Timing - Study 1.

02-21M-ME50

OBJECTIVE: Determine any difference in weed spectrum from several soil residual herbicides at a postemergence application of glyphosate. Furthermore, determine if the performance of glyphosate is different as a response to the soil applied herbicides.

SUMMARY: This research was initiated in response to the increasing popularity of using a soil residual herbicide followed by glyphosate. Various soil residual herbicides were applied preemergence (PRE) and followed with a postemergence application of glyphosate when weeds were 10 to 12 inches in height. No significant rainfall was received for 7 days following the PRE herbicide applications. Giant foxtail densities at the postemergence timing were lowest in plots treated with Dual II Magnum, Axiom, Boundary, and Domain. Only FirstRate, Canopy XL, Python, Axiom and Sencor reduced common cocklebur density. Ivyleaf morningglory density was reduced by Authority, Canopy XL, Valor, and FirstRate. Giant foxtail and common cocklebur control was at least 98% in all herbicide treated plots at 28 days after the postemergence (10 to 12" weeds) application of glyphosate (DAPO). The sequential application of glyphosate controlled 92% of ivyleaf morningglory at 28 DAPO. The only PRE herbicide followed by glyphosate programs to provide ivyleaf morningglory control similar to the sequential application of glyphosate were Authority, Canopy XL, and FirstRate. Ivyleaf morningglory control was 63 to 86% from all other PRE followed by glyphosate herbicide programs. Soybean yield was similar among all herbicide treated plots except the single application of glyphosate alone which yielded significantly less than the sequential application of glyphosate.

HERBICIDES

AUTHORITY 75 WG
 AXIOM 68 WG
 BOUNDARY 7.8 EC
 CANOPY XL 56.3 WG
 CLASSIC 25 WG
 DOMAIN 60 WG
 DUAL II MAGNUM 7.64 EC
 FIRSTRATE 84 WG
 PROWL 3.3 EC
 PYTHON 80 WG
 ROUNDUP ULTRA MAX 3.7 SL
 SENCOR 75 WG
 VALOR 51 WG

WEEDS

cocklebur, common
 foxtail, giant
 lambsquarters, common
 morningglory, ivyleaf
 morningglory, pitted
 nutsedge, yellow
 ragweed, common
 ragweed, giant
 sida, prickly
 velvetleaf
 waterhemp, common

CROP

soybean

Bryan Young

PLANT, SOIL AND GENERAL AGRICULTURE DEPARTMENT

SOUTHERN ILLINOIS UNIVERSITY

Effect of Soil Residual on Weed Spectrum at Postemergence Timing - Study 1.

Project Code: 02-21M-ME50 Location: Belleville Research Center

Investigator: Bryan Young, Assistant Professor, Southern Illinois University

City State Zip Country: Belleville IL 62221 USA
Trial Status: Final Updated: 10-29-02**Objective:**

Determine any difference in weed spectrum from several soil residual herbicides at a postemergence application of glyphosate. Furthermore, determine if the performance of glyphosate is different as a response to the soil applied herbicides.

Weed Code	Common Name	Scientific Name
1. SETFA	foxtail, giant	Setaria faberi Herrm.
2. XANST	cocklebur, common	Xanthium strumarium L.
3. IPOHE	morningglory, ivyleaf	Ipomoea hederacea (L.) Jacq.
4. AMATA	waterhemp, common	Amaranthus rudis Sauer
5. ABUTH	velvetleaf	Abutilon theophrasti Medicus
6. CHEAL	lambsquarters, common	Chenopodium album L.
7. IPOLA	morningglory, pitted	Ipomoea lacunosa L.
8. CYPES	nutsedge, yellow	Cyperus esculentus L.
9. AMBTR	ragweed, giant	Ambrosia trifida L.
10. SIDSP	sida, prickly	Sida spinosa L.
11. AMBEL	ragweed, common	Ambrosia artemisiifolia L.
12. TTTTT	weeds, generally	

Crop 1: GLXMA soybean Variety: Asgrow 4602 RR
 Planting Method: Seeded Planting Date: 6-3-02
 Rate: 75 lb/A Depth: 1.0 IN
 Row Spacing: 30 IN

Plot Width, Unit: 10 FT Plot Length, Unit: 30 FT Reps: 3
 Tillage Type: Reduced-Till Study Design: Randomized complete block
 Previous Crop, Year: ZEAMX, 2001

Field Prep./Maintenance: N 0 LB/A, P205 50 LB/A, K20 150 LB/A

Soil Name: Ebbert % OM: 1.4 pH: 5.7 CEC: 14
 Texture: Silt loam Fert. Level: P1: 97 LB/A, K: 291 LB/A

APPLICATION DESCRIPTION

	A	B	C	D	E
Application Date:	6-4-02	6-27-02	7-3-02	7-3-02	7-12-02
Time of Day:	15:00	10:30	16:00	16:00	8:00
Application Method:	Spray	Spray	Spray	Spray	Spray
Application Timing:	PRE	4-8"W	10-12"W1	10-12"W2	2-4"REGR
Applic. Placement:	BROS0I	BROFOL	BROFOL	BROFOL	BROFOL
Air Temp., Unit:	77 F	88 F	96 F	96 F	71 F
% Relative Humidity:	52	50	56	56	80
Wind Velocity, Unit:	3-5 MPH	3-5 MPH	0-3 MPH	0-3 MPH	0-3 MPH
Soil Moisture:	NORMAL	BELNOR	BELNOR	BELNOR	BELNOR
% Cloud Cover:	55	20	70	70	100

CROP STAGE AT EACH APPLICATION

	A	B	C	D	E
Crop 1 Code, Stage:	GLXMA NA	GLXMA V1	GLXMA V2	GLXMA V2	GLXMA V5
Height, Unit:	NA IN	3-5 IN	4-6 IN	4-6 IN	10 IN

WEED STAGE AT EACH APPLICATION

	A	B	C	D	E
Weed 1 Code:		SETFA	SETFA	SETFA	
Stage(leaves):		3-5	4-6	4-5	
Height(inches):		1-6	6-12	6-10	
Density:		High	High	Low	
Weed 2 Code:		XANST	XANST	XANST	
Stage(leaves):		3-7	6-10	6-12	
Height(inches):		2-5	6-10	6-12	
Density:		Low	Medium	Medium	

Weed 3 Code:	IPOHE	IPOHE	IPOHE	IPOHE
Stage(leaves):	2-10	4-12	4-12	2-6
Height(inches):	2-4	6-8	6-8	2-4
Density:	Medium	Medium	Medium	Medium
Weed 4 Code:	AMATA	AMATA	AMATA	
Stage(leaves):	0-5	3-8	3-8	
Height(inches):	0-2	3-4	3-4	
Density:	Low	Low	Low	
Weed 5 Code:	ABUTH	ABUTH	ABUTH	
Stage(leaves):	2-5	4-6	4-6	
Height(inches):	0-3	3-4	3-4	
Density:	Low	Low	Low	
Weed 6 Code:	CHEAL			
Stage(leaves):	2-6			
Height(inches):	0-3			
Density:	Low			

APPLICATION EQUIPMENT

	A	B	C	D	E
Appl. Equipment:	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer	CO2 sprayer
Operating Pressure:	40 PSI	40 PSI	40 PSI	40 PSI	40 PSI
Nozzle Type:	Flat fan	Flat fan	Flat fan	Flat fan	Flat fan
Nozzle Size:	8003	8002	8002	8002	8002
Boom Length, Unit:	7.5 FT	7.5 FT	7.5 FT	7.5 FT	7.5 FT
Spray Volume, Unit:	20 GPA	20 GPA	20 GPA	20 GPA	20 GPA

NOTES:

Harvested Oct-22-02, (2) 30 inch rows by 27 ft.

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Project Code: 02-21M-ME50 Location: Belleville Research Center

Weed Code		SETFA SETFA SETFA XANST XANST XANST IPOHE IPOHE IPOHE																			
Crop Code		GLXMA GLXMA GLXMA GLXMA				Control Control Control			Control Control Control			Control Control Control									
Rating Data Type		Yield	Injury	Injury	Height	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent					
Rating Unit		bu/A	Percent	Percent	cm	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent					
Rating Date		10-22-02	6-24-02	7-17-02	8-6-02	7-17-02	7-31-02	7-17-02	7-31-02	7-17-02	7-31-02	7-17-02	7-31-02	7-17-02	7-31-02	7-31-02					
Trt-Eval Interval		21 DAP		14 DA-C		64 DAP		At Post		14 DA-C		28 DA-C		At Post		14 DA-C		28 DA-C			
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Unit	Prod Unit	Grow Stg	Appl Code													
1	NONTREATED								7	0	0	79	0	0	0	0	0	0	0		
2	PROWL	3.3	EC	0.743	LB A/A	1.8	PT/A	PRE A	47	0	0	68	85	100	99	0	100	98	0	83	77
2	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
3	DUAL II MAGNUM	7.64	EC	1.27	LB A/A	1.33	PT/A	PRE A	47	0	0	71	98	100	99	0	100	98	0	82	73
3	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
4	AXIOM	68	WG	0.2975	LB A/A	7	OZ/A	PRE A	46	1	0	73	96	100	99	17	100	99	0	77	72
4	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
5	BOUNDARY	7.8	EC	1.22	LB A/A	1.25	PT/A	PRE A	44	0	0	71	98	100	99	37	100	99	10	80	77
5	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
6	DOMAIN	60	WG	0.3375	LB A/A	9	OZ/A	PRE A	47	0	0	67	92	100	99	30	100	98	0	62	63
6	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
7	SENCOR	75	WG	0.5	LB A/A	0.67	LB/A	PRE A	49	0	0	80	82	100	99	60	100	99	0	82	73
7	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
8	PYTHON	80	WG	0.057	LB A/A	1.14	OZ/A	PRE A	57	0	0	78	47	100	99	78	100	99	47	90	86
8	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
8	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
9	AUTHORITY	75	WG	0.1406	LB A/A	3	OZ/A	PRE A	52	1	0	78	40	100	99	3	100	99	53	92	94
9	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
9	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
10	CANOPY XL	56.3	WG			4.5	OZ/A	PRE A	56	2	0	82	73	100	99	78	100	99	80	99	98
10	->CLASSIC	25	WG	0.0264	LB A/A			PRE A													
10	->AUTHORITY	75	WG	0.132	LB A/A			PRE A													
10	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
10	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													
11	VALOR	51	WG	0.0781	LB A/A	2.45	OZ/A	PRE A	52	2	0	74	60	100	99	33	100	99	53	88	86
11	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2 D													
11	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2 D													

Weed Code										SETFA	SETFA	SETFA	XANST	XANST	XANST	IPOHE	IPOHE	IPOHE				
Crop Code										GLXMA	GLXMA	GLXMA	GLXMA									
Rating Data Type										Yield	Injury	Injury	Height	Control	Control	Control	Control	Control				
Rating Unit										bu/A	Percent	Percent	cm	Percent	Percent	Percent	Percent	Percent				
Rating Date										10-22-02	6-24-02	7-17-02	8-6-02	7-17-02	7-31-02	7-17-02	7-31-02	7-31-02				
Trt-Eval Interval										21 DAP	14 DA-C	64 DAP	At Post	14 DA-C	28 DA-C	At Post	14 DA-C	28 DA-C				
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code													
12	FIRSTRATE	84	WG	0.0315	LB A/A	0.6	OZ/A	PRE	A	56	0	0	83	30	100	99	93	100	99	91	99	96
12	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W2	D													
12	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W2	D													
13	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W1	C	40		0	63		100	99		100	98		82	78
13	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W1	C													
14	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	4-8"W	B	51		0	74		100	99		100	98		87	92
14	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	4-8"W	B													
14	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	2-4"REGR	E													
14	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	2-4"REGR	E													
15	HANDWEED									48	0	0	91	99	100	99	99	100	99	99	100	99
LSD (P=.05)										8.9	2.2	0.0	12.3	12.4	0.0	0.0	25.2	0.0	1.4	15.0	10.0	4.6
Replicate F										5.080	1.377	0.000	3.226	1.949	0.000	0.000	1.980	0.000	9.726	2.113	4.378	20.133
Replicate Prob(F)										0.0131	0.2716	1.0000	0.0548	0.1642	1.0000	1.0000	0.1600	1.0000	0.0006	0.1428	0.0222	0.0001
Treatment F										15.064	0.792	0.000	2.963	54.950	0.000	0.000	18.400	0.000	2945.298	57.074	49.661	235.322
Treatment Prob(F)										0.0001	0.6545	1.0000	0.0070	0.0001	1.0000	1.0000	0.0001	1.0000	0.0001	0.0001	0.0001	0.0001

Weed Code	IPOHE XANST SETFA AMATA ABUTH CHEAL IPOLA CYPES AMBTR SIDSP AMBEL														TTTTT	TTTTT					
Crop Code																					
Rating Data Type	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Fresh Wt	Dry Wt.					
Rating Unit	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	g/1.0 m2	g/1.0 m2					
Rating Date																					
Trt-Eval Interval	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post					
Trt No.	Treatment Name	Form Conc	Form Type	Rate	Prod Rate	Prod Unit	Grow Stg	Appl Code													
1	NONTREATED																				
2	PROWL	3.3	EC	0.743	1.8	PT/A	PRE	A	29.3	60.7	111.3	2.0	2.0	0.0	0.0	16.7	2.0	0.7	0.7	489.3	82.7
2	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
2	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
3	DUAL II MAGNUM	7.64	EC	1.27	1.33	PT/A	PRE	A	29.3	70.0	37.3	0.0	2.0	1.3	0.0	1.3	5.3	2.0	0.0	488.0	81.3
3	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
3	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
4	AXIOM	68	WG	0.2975	7	OZ/A	PRE	A	50.7	40.7	25.3	0.0	2.0	0.0	0.0	0.7	2.0	0.0	0.0	504.0	78.7
4	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
4	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
5	BOUNDARY	7.8	EC	1.22	1.25	PT/A	PRE	A	34.7	53.3	10.7	0.0	0.7	0.0	0.0	0.0	1.3	0.0	0.0	554.7	86.7
5	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
5	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
6	DOMAIN	60	WG	0.3375	9	OZ/A	PRE	A	39.3	60.7	50.0	0.0	0.0	0.0	0.0	7.3	2.0	0.0	0.7	610.7	105.3
6	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
6	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
7	SENCOR	75	WG	0.5	0.67	LB/A	PRE	A	36.7	17.3	68.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	458.7	76.0
7	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
7	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
8	PYTHON	80	WG	0.057	1.14	OZ/A	PRE	A	40.0	18.0	158.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	420.0	80.0
8	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
8	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
9	AUTHORITY	75	WG	0.1406	3	OZ/A	PRE	A	6.7	34.7	129.3	0.7	0.7	0.0	0.0	0.0	4.0	0.0	0.7	365.3	66.7
9	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
9	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
10	CANOPY XL	56.3	WG		4.5	OZ/A	PRE	A	9.3	8.0	127.3	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	234.7	45.3
10	->CLASSIC	25	WG	0.0264			PRE	A													
10	->AUTHORITY	75	WG	0.132			PRE	A													
10	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
10	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
11	VALOR	51	WG	0.0781	2.45	OZ/A	PRE	A	9.3	52.7	89.3	0.0	0.0	2.0	0.7	7.3	4.0	0.0	0.0	477.3	77.3
11	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
11	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													
12	FIRSTRATE	84	WG	0.0315	0.6	OZ/A	PRE	A	13.3	7.3	270.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	292.0	65.3
12	AMS	100	DRY	2.0	17	LB/100 GAL	10-12"W2	D													
12	ROUNDUP ULTRA MAX	3.7	SL	0.75	1.6	PT/A	10-12"W2	D													

Weed Code	IPOHE	XANST	SETFA	AMATA	ABUTH	CHEAL	IPOLA	CYPES	AMBTR	SIDSP	AMBEL	TTTTT	TTTTT
Crop Code													
Rating Data Type	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Plants	Fresh Wt	Dry Wt.
Rating Unit	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	1.0 m2	g/1.0 m2	g/1.0 m2
Rating Date													
Trt-Eval Interval	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post	At Post

Trt No.	Treatment Name	Form Conc	Form Type	Rate	Rate Unit	Prod Rate	Prod Unit	Grow Stg	Appl Code														
13	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	10-12"W1	C	32.7	104.0	255.3	2.7	2.0	1.3	0.0	24.0	0.0	1.3	0.0	642.7	122.7	
13	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	10-12"W1	C														
14	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	4-8"W	B	31.3	59.3	220.7	4.7	3.3	4.0	2.0	0.0	0.0	0.0	0.0	297.5	41.0	
14	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	4-8"W	B														
14	ROUNDUP ULTRA MAX	3.7	SL	0.75	LB AE/A	1.6	PT/A	2-4"REGR	E														
14	AMS	100	DRY	2.0	% W/W	17	LB/100 GAL	2-4"REGR	E														
15 HANDWEED																							
LSD (P=.05)										14.52	53.64	100.81	2.64	2.90	2.52	1.73	22.41	5.39	1.49	0.97	174.68	31.62	
Replicate F										17.199	4.812	3.865	2.625	0.138	1.695	0.683	2.567	10.304	1.565	0.000	20.840	16.297	
Replicate Prob(F)										0.0001	0.0175	0.0351	0.0931	0.8715	0.2049	0.5147	0.0977	0.0006	0.2296	1.0000	0.0001	0.0001	
Treatment F										7.775	2.304	6.211	2.667	1.320	1.985	0.927	1.005	1.010	1.587	0.769	4.264	3.965	
Treatment Prob(F)										0.0001	0.0395	0.0001	0.0197	0.2707	0.0739	0.5371	0.4736	0.4698	0.1620	0.6748	0.0012	0.0020	

Effect of Soil Residual on Weed Spectrum at Postemergence Timing - Study 1.

Project Code: 02-21M-ME50 Location: Belleville Research Center

Trial Comments

1. Protocol: SIU (BGY).
2. DAP = days after planting. At Post = at various postemergence application timings. DA-C = days after 10-12"W1 or 10-12"W2 applications.
3. 1.0 m² = 1.0 square meter. Fresh Wt = fresh weight of weeds. Dry Wt. = oven dry weight of weeds. TTTTT = weeds generally.