Herbicide Trials 2019

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CEREALS & OILSEEDS

Aims

- Residual Herbicides SPot W and SPot N –
- To study the effect of aclonifen in combination with a range of other available residual herbicides
- Observe any potential phytotoxicity effects of the residuals used

- Other work in the national programme: contact herbicides –
- To observe the effects and safety of timing of applications of alternative contact herbicides (as a replacement for diquat) for early post-emergence use

Residual Herbicides – Sites

- SPot N
- Varieties – Maris Piper and Sunita
- Mechanically planted 15th April 2019
- Soil type – Sandy Loam
- 4 replicates

- SPot W
- Variety – Maris Piper
- Mechanically planted 7th May 2019
- Soil Type – Clay Loam
- 4 replicates

Residual Herbicides – Treatments

- **SPot N**
- Application 30th April
- Pre-emergence of the crop and prior to cracking

- **SPot W**
- Application 16th May
- Pre-emergence of the crop and prior to cracking

Treatment number	Treatment
1	Untreated Check
2	Emerger 1.75 L/ha
3	Shotput 0.5 kg/ha; Praxim 2.5 L/ha
4	Emerger 1.75 L/ha; Shotput 0.5 kg/ha
5	Emerger 1.75 L/ha; Praxim 2.5 L/ha
6	Emerger 1.75 L/ha; Stomp Aqua 2.0 L/ha
7	Emerger 1.75 L/ha; Gamit 36 CS 0.15 L/ha
8	Emerger 1.75 L/ha; Praxim 2.5 L/ha; Defy 3.0 L/ha

Residual Herbicides – Weed levels and assessment timing

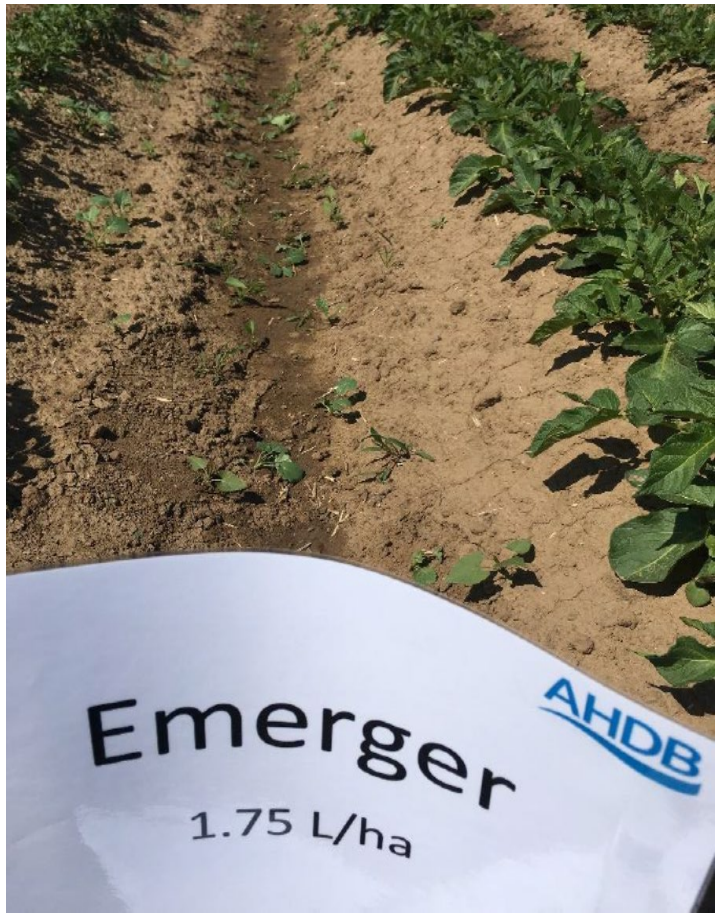
- **SPot N**
- Knotgrass, oilseed rape and bindweed
- Assessment 55DAA (24th June)

- **SPot W**
- very low numbers emerged and little weed burden – Fat-hen, mayweed, groundsel, nettle
- Assessment 32DAA (17 June)

Residual Herbicides – Results

- **Phytotoxicity –** No crop damage
- **Weed control –**
- **SPot N**
- Some weed control observed by aclonifen alone, improved when tank mixed and effective as a partner

- **SPot W**
- Due to the low weed burden good control observed across all treatments



Residual Herbicides – Results Cont'd

Residual Herbicides – Results Cont'd

Residual Herbicides – Results Cont'd SPot N

- Full control of oilseed rape from all treatments
- Emerger achieved partial control of field bindweed and knotgrass although not commercially acceptable
- In tank mix Emerger achieved excellent control Growers on site felt the best control included Treatment 3

Trt	Product	Weed	Vol OSR	Field bindweed	Knotgrass
		U/T level (m^2)	6	5	7.3
		% control			
		Rate (/ha)			
1	Untreated	N/A	0	0	0
2	Emerger	1.75l	100 a	75.0 b	74.6 b
3	Shotput + Praxim	0.5kg + 2.5 l	100 a	80.0 ab	96.9 a
4	Emerger + Shotput	1.75l + 0.5kg	100 a	90.0 ab	96.9 a
5	Emerger + Praxim	1.75l + 2.5l	100 a	95.0 a	95.8 a
6	Emerger + Stomp Aqua	1.75l + 2l	100 a	100 a	100 a
7	Emerger + Gamit 36 CS	1.75l + 0.15l	100 a	100 a	100 a
8	Emerger + Praxim + Defy	1.75l + 2.5l + 3l	100 a	100 a	100 a

Residual Herbicides – Results Cont'd SPot W

- Caution – low untreated weed population
- SPot N results more reliable

Trt	Product	Weed	Mayweed	Fath-hen	C. nettle	Groundsel
		U/T level (m^2)	3	2	2	3
		% control				
		Rate (/ha)				
1	Untreated	N/A	0	0	0	0
2	Emerger	1.75l	100 b	100 a	100 b	92.3 a
3	Shotput + Praxim	0.5kg + 2.5 l	100 b	100 a	100 b	100 a
4	Emerger + Shotput	1.75l + 0.5kg	100 b	100 a	100 b	100 a
5	Emerger + Praxim	1.75l + 2.5l	64 b	57 a	100 b	100 a
6	Emerger + Stomp Aqua	1.75l + 2l	100 b	100 a	100 b	85 a
7	Emerger + Gamit 36 CS	1.75l + 0.15l	100 b	100 a	100 b	100 a
8	Emerger + Praxim + Defy	1.75l + 2.5l + 3l	100 b	100 a	100 b	100 a

Residual Herbicides – Costs

Trt. N°	Product / Formulation	Rate of product/ha	Dosage a.i. in g/ha	cost per ha	cost per ha (total)	cost per acre	cost per acre (total)
1	Untreated	-	-				
2	Emerger	1.75 L	1050	£ 31.50	£ 31.50	£ 12.75	£ 12.75
3	Shotput	0.5 Kg	350	£ 14.40	£ 78.40	£ 5.83	£ 31.73
	Praxim	2.5 L	1250	£ 64.00		£ 25.90	
4	Emerger	1.75 L	1050	£ 31.50	£ 45.90	£ 12.75	£ 18.58
	Shotput	0.5 Kg	350	£ 14.40		£ 5.83	
5	Emerger	1.75 L	1050	£ 31.50	£ 95.50	£ 12.75	£ 38.65
	Praxim	2.5 L	1250	£ 64.00		£ 25.90	
6	Emerger	1.75 L	1050	£ 31.50	£ 49.16	£ 12.75	£ 19.90
	Stomp Aqua	2 L	910	£ 17.66		£ 7.15	
7	Emerger	1.75 L	1050	£ 31.50	£ 48.81	£ 12.75	£ 19.75
	Gamit 36 CS	0.15 L	54	£ 17.31		£ 7.00	
8	Emerger	1.75 L	1050	£ 31.50	£ 117.40	£ 12.75	£ 47.51
	Praxim	2.5 L	1250	£ 64.00		£ 25.90	
	Defy	3 L	2400	£ 21.90		£ 8.86	

Based on data supplied by Eurofins and Agrii

Residual Herbicides – Summary

- No crop damage observed from pre-emergence applications
- Emerger (aclonifen) gave good levels of control which were improved when tank mixed showing it to be an effective partner
- Costs of herbicide mixes and weed burdens at each site need to be considered when choosing products for weed control

Contact Herbicides – Treatments

Treatment number	Treatment		Appl'n timing
1	Retro 4.0L	Praxim 4.0L Shotput 0.35Kg Gamit 36CS 0.15L Emerger 1.75L	Pre em
2	Shark 0.333L		Pre em
3	Retro 4.0L		10% em
4	Shark 0.333L		10% em
5	Retro 4.0L		50% em
6	Shark 0.333L		50% em
7	Handweeded Control		
8	Untreated Control		

Contact Herbicides – Results SPot SW

Pre-em Diquat

Pre-em Shark

10% Diquat

10% Shark

Contact Herbicides – Results SPot SW

50% Diquat

50% Shark

Hand weed control

untreated

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