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Aphid Management in Cereals

Trial ID: CFT0910

Location:

Cryon

Trial Year: 2009

Investigator:

Clare Felton-Taylor

Objective:	To evaluate the impact and control of aphids in winter cereals
Planting Date:	13/06/2009
Fungicide Seed Treatment:	Equivalent fungicide treatment on all seed: Barley: triadimenol 22.5 g ai/100 kg seed, Bread and durum wheat: tebuconazole 2.5 g ai/ 100 kg seed
Insecticide Seed Treatment:	Imidacloprid at 72 or 144 g ai/100 kg seed
Foliar Insecticide Application:	Pirimor 150 g/ha on 18/08/2009 (aphid populations >13/tiller) GS30-31
Keywords:	Aphid, wheat, barley, durum

Table 1: Emergence and Aphid Counts

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	4/07/2009 21 DAP Emergence Plants/m ²	30/07/09 47 DAP Aphids /Plant	11/08/09 59 DAP Aphids /Tiller	17/08/2009 65 DAP		
							Oat Aphids/Tiller	Corn Aphids/Tiller	Rose-Grain Aphids/Tiller
1	Barley cv. Fitzroy	-	-	110a	2.6	10.3	9.6 b	2.5a	0.0
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	98abc			3.2 d	0.0b	0.0
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	103a			2.7 d	0.0b	0.0
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha						
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha						
6	Wheat cv. Livingston	-	-	84de	2.3	9.4	15.5 a	0.0b	0.0
7	Wheat cv. Livingston	Imidacloprid 72 g ai	-	79ef			6.7 b	0.03b	0.0
8	Wheat cv. Livingston	Imidacloprid 144 g ai	-	67f			7.7 bc	0.0b	0.0
9	Wheat cv. Livingston	-	Pirimor 150 g/ha						
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha						
11	Durum cv. Bellaroi	-	-	103ab	2.6	6.8	14.0 a	0.09b	0.0
12	Durum cv. Bellaroi	Imidacloprid 72 g ai	-	87cde			4.2 cd	0.0b	0.0
13	Durum cv. Bellaroi	Imidacloprid 144 g ai	-	93bcd			2.6 d	0.0b	0.0
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha						
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha						
P =				0.00	0.98	0.25	0.00	0.02	n/a
LSD =				12.7 – 13.7	nsd	nsd	3.4	Arcsin detransf	

DAP = Days after Planting

nsd = No significant difference

n/a = not applicable (no analysis as no aphids counted)

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Table 2: Aphid Counts 75 DAP & 96 DAP

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	27/08/2009 75 DAP/ 9 DAA				17/09/09 96 DAP/ 30 DAA
				Oat Aphids/Tiller	Corn Aphids/Tiller	Rose-Grain Aphids/Tiller	Total Aphids/Tiller	Total Aphids/Tiller
1	Barley cv. Fitzroy	-	-	9.0a	19.4 a	0.0 b	28.4 a	0.0
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	3.6ef	0.0 b	0.9 a	4.5 bcde	0.0
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	2.7efg	0.4 b	0.0 b	3.2 cde	0.0
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha	0.8g	1.8 b	0.0 b	2.6 de	0.0
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha	1.9fg	0.0 b	0.1 b	2.0 e	0.0
6	Wheat cv. Livingston	-	-	7.4abc	0.1 b	0.1 b	7.6 bc	0.0
7	Wheat cv. Livingston	Imidacloprid 72 g ai	-	8.4ab	0.1 b	0.0 b	8.5 b	0.0
8	Wheat cv. Livingston	Imidacloprid 144 g ai	-	5.2cd	0.0 b	0.0 b	5.2 bcde	0.0
9	Wheat cv. Livingston	-	Pirimor 150 g/ha	1.8fg	0.0 b	0.0 b	1.8 e	0.0
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha	4.7de	0.0 b	0.0 b	4.7 bcde	0.0
11	Durum cv. Bellaroi	-	-	6.4bcd	0.1 b	0.2 b	6.7 bcd	0.0
12	Durum cv. Bellaroi	Imidacloprid 72 g ai	-	6.6abcd	0.0 b	0.1 b	6.6 bcd	0.0
13	Durum cv. Bellaroi	Imidacloprid 144 g ai	-	3.6ef	0.0 b	0.2 b	4.0 cde	0.0
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha	1.2fg	0.0 b	0.0 b	1.2 e	0.0
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha	1.7fg	0.1 b	0.0 b	1.8 e	0.0
P =				0.00	0.00	0.00	0.00	n/a
LSD =				2.5	4.1	0.4	4.5	

DAP = Days after Planting

DAA = Days after Application (foliar insecticide)

n/a = not applicable (no analysis as no aphids counted)

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Table 3: Head Counts, Yield and Grain Quality

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	21/10/2009 130 DAP/ 64 DAA Head Counts /m ²	Yield t/ha	Screenings %	Test Weight kg/hL	Retention %	Grain Weight g / 1000 Grains
1	Barley cv. Fitzroy	-	-	584 c	4.50 b	11.2 a	68 c	55 d	37 a
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	710 a	4.75 ab	10.5 a	68 c	56 d	38 a
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	621 bc	4.79 a	9.9 a	67 c	58 cd	37 a
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha	733 a	4.51 b	9.5 ab	68 c	60 c	37 a
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha	675 ab	4.77 a	8.1 b	69 c	63 b	39 a
6	Wheat cv. Livingston	-	-	365 de	4.03 c	6.2 c	81 a	94 a	31 bc
7	Wheat cv. Livingston	Imidacloprid 72 g ai	-	380 d	3.99 c	5.8 c	81 a	94 a	30 c
8	Wheat cv. Livingston	Imidacloprid 144 g ai	-	371 de	4.19 c	6.1 c	81 a	94 a	30 bc
9	Wheat cv. Livingston	-	Pirimor 150 g/ha	374 d	4.06 c	6.4 c	81 a	94 a	30 c
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha	375 d	4.12 c	6.2 c	81 a	94 a	30 c
11	Durum cv. Bellaroi	-	-	302 ef	3.36 d	5.3 c	75 b	95 a	32 bc
12	Durum cv. Bellaroi	Imidacloprid 72 g ai	-	314 def	3.19 d	5.8 c	76 b	94 a	31 bc
13	Durum cv. Bellaroi	Imidacloprid 144 g ai	-	287 f	3.35 d	5.4 c	75 b	95 a	33 b
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha	331 def	3.37 d	5.1 c	75 b	95 a	32 bc
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha	305ef	3.38 d	5.6 c	74 b	95 a	31 bc
P =				0.00	0.00	0.00	0.00	0.00	0.00
LSD =				26.8	0.28	1.7	2.6	Arcsin detransf	2.8

(Yield cv = 4.3%)