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Aphid Management in Cereals

Trial ID: AM0909

Location:

Bullarah

Trial Year: 2009

Investigator:

Anthony Mitchell

Objective:	To evaluate the impact and control of aphids in winter cereals
Planting Date:	10/06/2009
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 19/08/2009 (aphid populations >10/tiller)
Keywords:	Aphid, wheat, barley, durum

Table 1: Emergence and Aphid Counts 69 DAP

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	1/07/2009 21 DAP	18/08/2009 69 DAP			
				Emergence Plants/m ²	Oat Aphids/Tiller	Corn Aphids/Tiller	Rose-Grain Aphids/Tiller	% Tillers with Aphids
1	Barley cv. Fitzroy	-	-	54	31.6a	12.3a	0.0	100
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	55	7.8de	0.0bc	0.0	98
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	61	9.4de	0.0c	0.0	98
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha	48				
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha	51				
6	Wheat cv. Livingston	-		43	21.3b	0.0c	0.0	100
7	Wheat cv. Livingston	Imidacloprid 72 g ai		51	8.5de	0.6b	0.0	98
8	Wheat cv. Livingston	Imidacloprid 144 g ai		53	6.7e	0.0c	0.0	100
9	Wheat cv. Livingston	-	Pirimor 150 g/ha	48				
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha	57				
11	Durum cv. Bellaroi	-		60	17.1bc	0.4bc	0.0	100
12	Durum cv. Bellaroi	Imidacloprid 72 g ai		57	12.4cd	0.0c	0.0	100
13	Durum cv. Bellaroi	Imidacloprid 144 g ai		60	10.6cde	0.3bc	0.0	98
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha	50				
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha	53				
P =				0.54	0.00	0.00	0.47	0.70
LSD =				nsd	Arcsin detransf	Arcsin detransf	Arcsin detransf	Arcsin detransf

nsd= No significant difference

DAP = Days after Planting

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Table 2: Aphid Counts 85 DAP/ 15 DAA

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	3/09/2009 85 DAP/ 15 DAA			
				Oat Aphids/Tiller	Corn Aphids/Tiller	Rose-Grain Aphids/Tiller	% Tillers with Aphids
1	Barley cv. Fitzroy	-	-	0.5a	8.5a	1.8 bc	89 a
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	0.0b	0.5b	4.7 a	78 a
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	0.1b	0.0b	2.9 ab	72 a
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha	0.1b	1.1b	1.1 bc	39 bc
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha	0.0b	1.3b	0.5 c	22 c
6	Wheat cv. Livingston	-	-	0.0b	0.0b	1.1 bc	22 c
7	Wheat cv. Livingston	Imidacloprid 72 g ai	-	0.1b	0.0b	0.8 bc	28 c
8	Wheat cv. Livingston	Imidacloprid 144 g ai	-	0.0b	0.0b	2.1 bc	39 bc
9	Wheat cv. Livingston	-	Pirimor 150 g/ha	0.0b	0.0b	0.4 c	11 c
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha	0.0b	0.0b	0.4 c	17 c
11	Durum cv. Bellaroi	-	-	0.0b	0.3b	0.6 c	33 bc
12	Durum cv. Bellaroi	Imidacloprid 72 g ai	-	0.0b	0.0b	4.7 a	61 ab
13	Durum cv. Bellaroi	Imidacloprid 144 g ai	-	0.0b	0.0b	1.4 bc	39 bc
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha	0.0b	0.0b	0.2 c	17 c
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha	0.0b	0.0b	0.7 bc	28 c
P =				0.00	0.00	0.00	0.00
LSD =				2.1	2.1	2.3	31.6

DAP = Days after Planting

DAA = Days after Application (foliar insecticide)

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Table 3: Yield and Grain Quality

Trt No.	Crop & Variety	Seed Treatment Insecticide/ 100 kg Seed	Foliar Insecticide/ ha	Yield t/ha	Screenings %	Test weight kg/hL	Grain Weight g / 1000 grains	Retention %
1	Barley cv. Fitzroy	-	-	2.97bcd	4.5g	69g	42a	81c
2	Barley cv. Fitzroy	Imidacloprid 72 g ai	-	3.41b	5.6defg	69g	41a	79c
3	Barley cv. Fitzroy	Imidacloprid 144 g ai	-	3.88a	4.8g	69g	42a	82c
4	Barley cv. Fitzroy	-	Pirimor 150 g/ha	3.10bc	5.3efg	69g	42a	81c
5	Barley cv. Fitzroy	Imidacloprid 72 g ai	Pirimor 150 g/ha	3.30b	5.0fg	69g	43a	81c
6	Wheat cv. Livingston	-	-	2.30ef	9.7a	81bcd	29c	91b
7	Wheat cv. Livingston	Imidacloprid 72 g ai	-	2.63de	9.1ab	82abc	29c	92ab
8	Wheat cv. Livingston	Imidacloprid 144 g ai	-	3.04bcd	7.1bcde	83a	32bc	93ab
9	Wheat cv. Livingston	-	Pirimor 150 g/ha	2.65cde	7.7abcd	82a	29c	93ab
10	Wheat cv. Livingston	Imidacloprid 72 g ai	Pirimor 150 g/ha	3.20b	6.5cdefg	82abc	30bc	94a
11	Durum cv. Bellaroi	-	-	1.83g	8.0abc	78f	31bc	93ab
12	Durum cv. Bellaroi	Imidacloprid 72 g ai	-	2.22efg	7.1bcde	80de	31bc	93ab
13	Durum cv. Bellaroi	Imidacloprid 144 g ai	-	2.25efg	6.9cdef	80d	34b	94ab
14	Durum cv. Bellaroi	-	Pirimor 150 g/ha	1.85fg	7.7abcd	79ef	32bc	93ab
15	Durum cv. Bellaroi	Imidacloprid 72 g ai	Pirimor 150 g/ha	2.23efg	6.3cdefg	80cd	32bc	94a
P =				0.00	0.00	0.00	0.00	0.00
LSD =				0.46	2.1	1.2	3.8	Arcsin detransf

(Yield cv = 11.9%)