



**PEST CONTROL RESEARCH**

## **Comparison of the palatability of Preefeed with RS5**

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## 1. Introduction

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Pest Control Research Ltd undertook a comparison of the palatability of a new bait called “Preefeed” for prefeeding possums (*Trichosurus vulpecula*) prior to the use of toxic bait.

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## 2. Background

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Pest Control Research Ltd (PO Box 7223, Christchurch) has developed a new non-toxic cereal pelleted bait called “Preefeed”. This bait was specifically formulated for prefeeding possums prior to using toxic baits such as baits containing 1080 or cholecalciferol. Research results have shown that prefeeding provides an increased assurance that high possum kills can be achieved (Coleman et al. 2006).

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## 3. Objective

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To compare the palatability of a new pelleted cereal bait called “Preefeed” with industry standard RS5 cereal pellets.

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## 4. Methods

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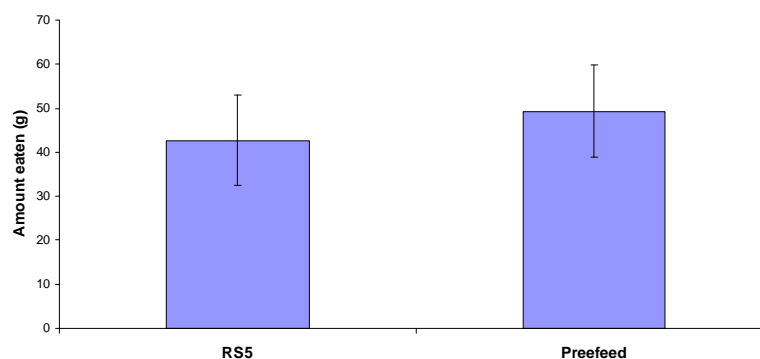
Palatability of Preefeed and RS5 cereal pellets was compared using a standard two-choice test where a total of 16 individually caged possums were offered a choice between standard RS5 and Preefeed cereal pellets. Daily consumption of the two types was recorded and then compared. A paired *t*-test was used to determine whether there was a significant differences between the two bait types.

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## 5. Results

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The individually caged possums ate a mean of  $42.7 \pm 10.2$ g per night of the RS5 standard and  $49.3 \pm 10.5$ g of the Preefeed bait (Fig 1). Detailed daily results are shown in the Appendix. There was no significant difference in the amount of bait eaten for the two bait types ( $p = 0.35$ ).



**Fig. 1** Mean amount of RS5 and Preefeed bait eaten by 16 individually caged possums.

Palatability of the Preefeed i.e. the proportion of the total amount of bait eaten is shown in Table 1.

**Table 1.** Palatability of Preefeed non-toxic bait calculated as the proportion (%) of total bait eaten when possums are presented a choice of RS5 and Preefeed baits. Confidence intervals for the mean are 95% C.I.

Day 1	Day 2	Day 3	Day 4	Mean
59.42	52.46	53.63	49.33	53.7 ± 6.7

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## 6. Conclusions

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- Preefeed bait is at least as palatable as the industry standard RS5 cereal pellet.

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## 7. Recommendation

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- Preefeed bait can be used as an alternative to RS5 cereal pellets based on bait palatability.

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## 8. Reference

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Coleman, J.D.; Fraser, K.W.; Spurr, E.B. 2006. Costs and benefits of pre-feeding for possum control. Landcare Research Contract Report LC0506/072

## 9. Appendix

Day 1

Client: PCR  
 Date: 17/12/2007  
 Bait Tested: Preefeed  
 Species: Possum  
 Control: RS5

### Palatability Trial

Total Palatability % = **59.42**



Number	Sex	Weight Control	Control Left	Control Eaten > 5 gm	Weight Test Bait	Test Left	Test Eaten
1		426	378	48	411	378	33
2		424	356	68	420	417	3
3		404	400	4	428	392	36
4		419	389	30	429	404	25
5		411	402	9	422	367	55
6		424	364	60	412	408	4
7		419	410	9	438	352	86
8		415	322	93	431	390	41
9		407	399	8	436	402	34
10		420	420	0	439	415	24
11		426	333	93	423	275	148
12		434	381	53	436	380	56
13		430	326	104	415	281	134
14		422	389	33	424	333	91
15		414	406	8	425	320	105
16		436	436	0	406	370	36
17		409	396	13	408	392	16
18				0			0
19				0			0
20				0			0
21				0			0

<b>Total</b>	633	<b>Total</b>
<b>Mean</b>	37.235	<b>Mean</b>
<b>SD</b>	35.659	<b>SD</b>
<b>SE</b>	8.6486	<b>SE</b>
<b>N</b>	17	<b>N</b>
<b>% &gt; 5 gm</b>		<b>% &gt; 5 gm</b>

Total eaten

1560

RS5	
Column1	

Mean	37.235294
Standard Error	8.6485843
Median	30
Mode	9
Standard Devi	35.659027
Sample Variar	1271.5662
Kurtosis	-0.920038
Skewness	0.6887037
Range	104
Minimum	0
Maximum	104
Sum	633
Count	17
Confidence Le	18.334176

Test bait	
Column1	

Mean	54.5294118
Standard Error	10.5325538
Median	36
Mode	36
Standard Devi	43.4268316
Sample Variar	1885.88971
Kurtosis	0.01789779
Skewness	0.96496709
Range	145
Minimum	3
Maximum	148
Sum	927
Count	17
Confidence Le	22.3280115

## Day 2

Client: PCR  
 Date: 18/12/2007  
 Bait Test: Preefeed  
 Species: Possum  
 Control: RS5

## Palatability Trial

Total Palatability % = 52.46



Number	Sex	Weight Control	Control Left	Control Eaten > 5 gm	Weight Test Bait	Test Left	Test Eaten > 5gm
1		636	409	227	438	375	63
2		418	366	52	434	426	8
3		436	434	2	421	371	50
4		454	444	10	435	386	49
5		460	449	11	444	387	57
6		427	381	46	435	390	45
7		419	396	23	442	339	103
8		433	328	105	437	432	5
9		450	438	12	425	378	47
10		423	403	20	431	396	35
11		440	365	75	433	277	156
12		447	397	50	427	273	154
13		424	385	39	436	400	36
14		457	390	67	413	379	34
15		441	441	0	403	395	8
16		434	400	34	427	424	3
17				0			0
18				0			0
19				0			0
20				0			0
21				0			0
				<b>Total</b>	773		
				<b>Mean</b>	48.3125		
				<b>SD</b>	55.74791		
				<b>SE</b>	13.93698		
				<b>N</b>	16		
				<b>% &gt; 5 gm</b>			
						<b>Total</b>	853
						<b>Mean</b>	50.17647
						<b>SD</b>	47.46872
						<b>SE</b>	11.51286
						<b>N</b>	17
						<b>% &gt; 5 gm</b>	
						Total eaten	1626

RS5	
Column1	
Mean	48.3125
Standard E	13.936977
Median	36.5
Mode	#N/A
Standard D	55.747907
Sample Va	3107.8292
Kurtosis	7.0958462
Skewness	2.4196762
Range	227
Minimum	0
Maximum	227
Sum	773
Count	16
Confidence	29.705981

Test bait	
Column1	
Mean	50.17647
Standard E	11.51286
Median	45
Mode	8
Standard D	47.46872
Sample Va	2253.279
Kurtosis	1.21039
Skewness	1.304425
Range	156
Minimum	0
Maximum	156
Sum	853
Count	17
Confidence	24.40616

## Day 3

Client: PCR  
 Date: 19/12/2007  
 Bait Test: Preefeed  
 Species: Possum  
 Control: RS5

## Palatability Trial

Total Palatability % = 53.68



Number	Sex	Weight Control	Control Left	Control Eaten > 5 gm	Weight Test Bait	Test Left	Test Eaten > 5gm
1		409	363	46	374	346	28
2		415	368	47	425	424	1
3		443	439	4	426	377	49
4		472	414	58	435	430	5
5		454	434	20	443	387	56
6		452	366	86	401	400	1
7		427	379	48	413	369	44
8		415	329	86	447	402	45
9		435	418	17	434	388	46
10		413	413	0	435	351	84
11		440	381	59	432	283	149
12		428	284	144	419	283	136
13		417	373	44	404	297	107
14		434	426	8	432	372	60
15		444	412	32	443	407	36
16		438	406	32	415	415	0
17		442	404	38	447	447	0
18				0			0
19				0			0
20				0			0
21				0			0
				<b>Total</b>	731		
				<b>Mean</b>	45.6875	<b>Total</b>	847
				<b>SD</b>	36.83969	<b>Mean</b>	49.82353
				<b>SE</b>	9.209922	<b>SD</b>	46.31581
				<b>N</b>	16	<b>SE</b>	11.23323
				<b>% &gt; 5 gm</b>		<b>N</b>	17
						<b>% &gt; 5 gm</b>	
					Total eaten	1578	

<i>RS5</i>	
<i>Column1</i>	
Mean	45.6875
Standard E	9.2099216
Median	45
Mode	86
Standard D	36.839686
Sample Va	1357.1625
Kurtosis	2.2053608
Skewness	1.2472327
Range	144
Minimum	0
Maximum	144
Sum	731
Count	16
Confidence	19.630495

<i>Test bait</i>	
<i>Column1</i>	
Mean	49.82353
Standard E	11.23323
Median	45
Mode	1
Standard D	46.31581
Sample Va	2145.154
Kurtosis	0.141758
Skewness	0.898311
Range	149
Minimum	0
Maximum	149
Sum	847
Count	17
Confidence	23.81339

## Day 4

Client: PCR  
 Date: 20/12/2007  
 Bait Test: Preefeed  
 Species: Possum  
 Control: RS5

## Palatability Trial

Total Palatability % = 49.33



Number	Sex	Weight Control	Control Left	Control Eaten > 5 gm	Weight Test Bait	Test Left	Test Eaten > 5gm
1		451	402	49	440	411	29
2		439	371	68	448	443	5
3		452	442	10	460	426	34
4		427	422	5	430	393	37
5		435	432	3	434	371	63
6		432	366	66	455	447	8
7		442	361	81	424	411	13
8		448	315	133	437	433	4
9		427	423	4	447	371	76
10		436	435	1	437	352	85
11		444	366	78	410	304	106
12		432	412	20	411	326	85
13		433	425	8	456	411	45
14		454	402	52	426	419	7
15		420	417	3	424	421	3
16		415	353	62	461	435	26
17				0			0
18				0			0
19				0			0
20				0			0
21				0			0
				<b>Total</b>	643		
				<b>Mean</b>	40.1875		
				<b>SD</b>	39.19731		
				<b>SE</b>	9.799328		
				<b>N</b>	16		
				<b>% &gt; 5 gm</b>		<b>Total</b>	626
						<b>Mean</b>	39.125
						<b>SD</b>	33.99779
						<b>SE</b>	8.499449
						<b>N</b>	16
						<b>% &gt; 5 gm</b>	
					Total eaten	1269	

RS5	
Column1	
Mean	40.1875
Standard E	9.7993277
Median	34.5
Mode	3
Standard D	39.197311
Sample Va	1536.4292
Kurtosis	0.1665238
Skewness	0.8221958
Range	132
Minimum	1
Maximum	133
Sum	643
Count	16
Confidence	20.886785

Test bait	
Column1	
Mean	39.125
Standard E	8.499449
Median	31.5
Mode	85
Standard D	33.99779
Sample Va	1155.85
Kurtosis	-0.865492
Skewness	0.661787
Range	103
Minimum	3
Maximum	106
Sum	626
Count	16
Confidence	18.11616