



**VICTORIA UNIVERSITY**  
MELBOURNE AUSTRALIA

## *Loss of AM Additives from Antimicrobial Films During Storage*

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1 **Table 1**

2 Antimicrobial activity of LLDPE films against *E. coli* as observed by agar disc diffusion  
 3 assay after long-term storage

4	Treatment	Target	Actual	Zone of Inhibition/ mm
5		Conc./ % w/w	Conc./ % w/w	
6	<b>At the beginning</b>			
7	LLDPE	-	-	- <sup>a</sup>
8	linalool-LLDPE	1.00	0.056	11.3 ± 1.89 <sup>b</sup> B
9	methylchavicol-LLDPE	1.00	0.053	8.8 ± 0.44 <sup>c</sup> A
10				
11	<b>At 1 year of storage</b>			
12	linalool-LLDPE	1.00	0.037	11.1 ± 0.11 B
13	methylchavicol-LLDPE	1.00	0.028	8.2 ± 0.12 A

14 <sup>a</sup> -, no reaction

15 <sup>b</sup> Values for zone of inhibition are represented as mean ± standard deviation

16 <sup>c</sup> The treatment with same letter within row is not statistically significant difference ( $P > 0.05$ )

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 24

25 **Table 2**

26 Effect of temperature on the loss of antimicrobial additive in LDPE-EVA films

27	Additive <sup>a</sup>	Temperature/ °C	Infinite additive concentration <sup>b</sup> /% w/w	$k \times 10^4 / h^{-1}$	$\theta_{1/2}$ / day
28					
29					
30	linalool	25	0.051	9.04	32
31		35	0.036	10.79	27
32					
33	methylchavicol	25	0.045	10.62	27
34		35	0.029	12.50	23

35

36 <sup>a</sup> Actual concentration at the beginning: linalool-LDPE-EVA (0.338 % w/w);

37 methylchavicol-LDPE-EVA (0.345 % w/w)

38 <sup>b</sup> Remained in the polymer at infinite time