

-MalAcetic® Technical Bulletin-

A safe, natural and effective formulation that veterinarians can rely on to bridge the gap between ear cleaning and topical treatment.

This study demonstrated that a solution of two percent boric acid and two percent acetic acid **used daily for seven days without any other treatment successfully eliminated Malassezia**.^{1, 2}

A mixture of the two acids was required to achieve uniform killing effect of all three microbes (Malassezia, Pseudomonas Staph). This is interpreted as indicating that the action of a single acid has a 'static' mechanism and that the combination of acids act in SYNERGY to kill the organism (i.e., the 'CIDAL' activity).³

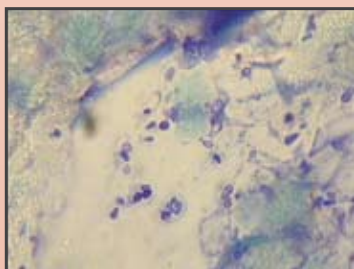


Malassezia otitis

Results of Initial Exam & Weekly Roll Cytology										
Patient	Age	Sex	Breed	Ear Disease	Pruritus	Erythema	Shaking	Initial Results	7 Days	14 Days
1B	9 yr	F	Poodle	5 mo	X	X	X	T	0	0
1D	9 yr	M	Lhasa Apso	2 yr	X	X	X	M	F	0
1E	5 mo	M	Lab.	6 wk	X	X	0	T	M	0
1G	3 yr	M	Dob.	3 wk	X	X	X	T	0	0
1H	6 yr	M	Cocker	3 mo	X	X	X	T	0	0
1I	4 mo	M	Cocker	2 wk	X	0	0	T	0	0
1J	12 yr	F	Mixed	1 mo	X	X	X	T	M	0
1K	6 yr	F	York. Terrier	2 wk	X	X	X	M	0	0
1L	8 yr	M	Poodle	3 mo	X	X	X	M	0	0
1M	2 yr	F	Pointer	4 wk	X	X	X	T	0	0
1N	3 yr	F	Beagle	3 wk	X	X	X	T	0	0
2A	6 mo	F	Am. Wat. Span.	1 mo	X	X	X	M	0	0
2B	3 yr	F	Rottweiler	1 yr	X	X	X	M	0	0
2D	1.5 yr	F	Bull Terrier	2 mo	X	X	X	T	0	0
2E	1.5 yr	M	Pug	2 mo	X	X	X	T	F	0
2F	4 yr	F	Bass. Hnd.	2 yr	X	X	X	T	F	0
2G	6 yr	F	Beagle	1 yr	X	X	X	M	0	0
Total					17/17	16/17	15/17			

T= teeming (>30/HPF); M=moderate (16-30/HPF); F=few (5-15/HPF); 0=none seen

At pH 4.9 the acetic acid/boric acid solution may inactivate the chemoattractant and account for the rapid reduction in inflammation and pruritus. Boric acid, being hydroscopic, dries out the humid ear canal and may also interfere with the function of this hydrophillic chemoattractant cytokine by removing the moisture necessary for it to function. It is interesting that during the week of no treatment, the Malassezia organisms remained absent from the ear cytology.¹ Up to 70% of chronic ear problems may have a ruptured Tympanic Membrane (TM)⁴. While other prod-



Cytology of yeast



Photograph of ruptured TM

ucts my contain ototoxic components, MalAcetic Otic cleanser has never had a confirmed case of ototoxicity. MalAcetic® is a patented formulation, all-natural product for ears and skin containing 2% acetic and 2% boric acids, with in-vitro³ and in-vivo^{1, 2} activity against Malassezia (yeast), Staphylococcus, Pseudomonas and other bacteria and yeast.

MalAcetic is the only ear cleanser that has repeatedly demonstrated IN-VIVO^{1, 2} efficacy (**87 and 88% success rate**) against Malassezia.

MalAcetic has been demonstrated to have anti-fungal, anti-dermatophyte activity greater than a chlorhexidine/miconazole product as demonstrated in two studies.^{5, 6}



MalAcetic® products are available as otics, wipes, shampoo and conditioner in various sizes.

1. Gotthelf, L. and Young, S., New Treatment of Malassezia Otitis Ex-

- terna In Dogs, Veterinary Forum, August 25, 1997.
 2. Bassett R. et al, Efficacy of Acetic/Boric Acid solutions in treating and preventing Malassezia, Austral Vet J, 2004.
 3. C.E. Benson, In-Vitro Study: Susceptibility of Selected Otitis External Pathogens to Individual and Mixture of Acetic and Boric Acids. Proceedings, AAVD, 1998 meeting.
 4. Gotthelf, L., Small Animal Ear Diseases 2nd Ed. textbook, Elsevier, 2006.
 5. Cook E., and Paterson S., Pilot Study To Investigate The Anti-Fungal Activity of A 2% Boric Acid/ 2% Acetic Acid Shampoo, Proceedings BSAVA, 2005.
 6. Cook E., and Paterson S., Comparison of Two Anti-Fungal Shampoos In The Management of Dermatophytosis In A Cattery, Proceedings BVDSG, 2006.



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