



# BOVIBROM™

**A multi-hurdle,  
multi-technology  
approach made easier.**



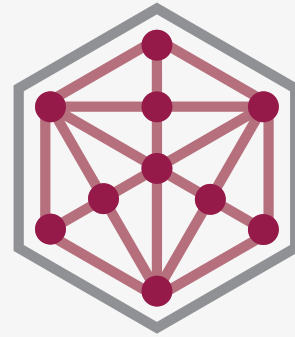
#ScienceHearted

At ARM & HAMMER™ we think big on a microscopic level to deliver safe feed and food solutions that drive business forward. We're your #ScienceHearted, local-and-global, animal and food production team.



# Multiple contact points create multiple challenges.

Beef processors must take into account many factors when choosing the right food safety program. With the constant threat of cross-contamination from multiple points of contact, it's essential to find what's right for you and your unique needs.



What if you could control pathogens with an antimicrobial that's backed by science-based research and support unavailable anywhere else?



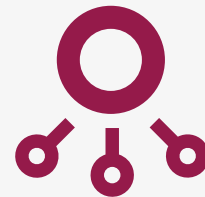
## PROTECT EMPLOYEES.

What if you had an effective antimicrobial that is well below Personal Exposure Limits (PEL)?



## FACILITY-FRIENDLY.

What if that option was *not* corrosive to many common alloys in commercial processing equipment or detrimental to wastewater systems?



## MULTI-HURDLE, MULTI-APPLICATION APPROACH.

What if the antimicrobial served as an essential part of an overall multi-hurdle, multi-application food safety program?

## Only BOVIBROM™:

- 1 Provides all the advantages of DBDMH technology, plus science-based research and support available from ARM & HAMMER™.
- 2 Offers pioneering technology for excellent coverage with less waste.
- 3 Builds confidence in your overall multi-hurdle, multi-application approach.

# ARM & HAMMER has more than a decade of DBDMH success.



DBDMH (1,3-Dibromo-5,5-Dimethylhydantoin), the active ingredient in BoviBrom, was introduced to the marketplace nearly 15 years ago by what is known today as Arm & Hammer Animal and Food Production. In addition to beef, DBDMH is used to significantly reduce pathogen loads during processing in many food production systems such as poultry, pork, and lamb.



BoviBrom is safe for workers (established OSHA PEL), non-corrosive to many common alloys in commercial processing and not detrimental to wastewater.

## Exclusive technology and support.

Our team has supported BoviBrom in the marketplace since its inception and offers a level of technology and support that's not available anywhere else. For example, we were the first to deliver simultaneous product delivery to avoid product slugs in cleaning systems—and our pioneering, patented delivery system and spray pattern technology allow for better coverage with less waste. And it's all backed by a 24-hour, 365-day service commitment.

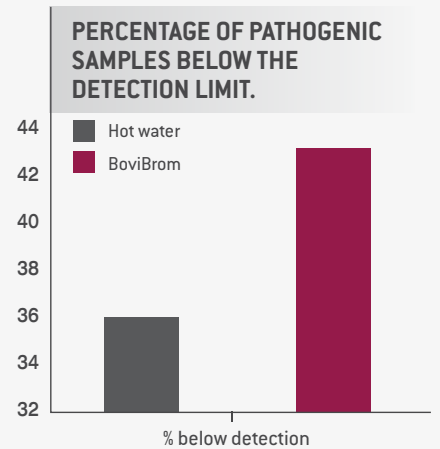


## The proof is in the research.

We have conducted extensive commercial and research-based studies on the use of DBDMH in a multi-hurdle, multi-application program. For example, a study<sup>1</sup> by Colorado State University evaluated the efficacy of BoviBrom on bacterial growth when used in beef packing facilities. Carcasses were inoculated on the rail in four target zones, and three treatment regimens were administered on two separate production days.

While all systems were effective against pathogens, the regimens that included BoviBrom and hot water wash provided the greatest potential for pathogen control.

Similar studies<sup>2,3</sup> in other protein groups further document the effectiveness of DBDMH technology in reducing pathogen load at processing.

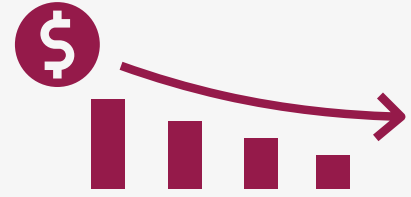


**Treatment and sampling scheme for inoculated beef carcasses.**

Treatment Systems	Sample: Zone A	Sample: Zone B	Sample: Zone C	Sample: Zone D
<b>1 Hot Water</b>	Before Hot Water Wash	After Hot Water Wash	After Lactic Acid Spray	After BoviBrom Spray Chill
<b>2 DBDMH</b>	Before BoviBrom Final Wash	After BoviBrom Final Wash	After Lactic Acid Spray	After BoviBrom Spray Chill
<b>3 Hot Water + DBDMH</b>	Before BoviBrom Final Wash and Hot Water	After BoviBrom Final Wash and Hot Water	After Lactic Acid Spray	After BoviBrom Spray Chill

## Facility-friendly for long-term cost benefits.

When deciding which antimicrobial to use, it's important to consider the true cost of ownership, factoring in both variable and fixed costs. In a published study using net present value models, annual processor costs using BoviBrom™ declined by \$326,842 compared to a traditional antimicrobial. This reflected significant equipment maintenance gains, which more than offset the additional \$0.0077/head paid upfront to purchase the product.<sup>4</sup>



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### We're #ScienceHearted and we're here for you.

We're ever-curious farm kids turned nutritional innovators, microbial pioneers and food safety game changers. We use scientific research to unlock the power of nature to create products that focus on you, your animals and worldwide food security. To learn more about BoviBrom ask your nutritionist, veterinarian or ARM & HAMMER™ representative or visit [AHfoodchain.com](http://AHfoodchain.com).

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1 Bullard BR, et al. Investigation of the use of 1,3-Dibromo-5,5-Dimethylhydantoin (DBDMH) in beef harvest interventions. Center for Meat Safety and Quality, Department of Animal Sciences. Colorado State Univ. 2018.

2 Feye KM, Bokengroger C, McReynolds J, Owens CM, Ricke SC. Evaluation of AviBrom for the reduction of foodborne pathogens in a pilot poultry processing plant. University of Arkansas, 2019. Data on file.

3 Davis HE, González SV, Geomaras I, Delmore RJ. Validation of the Use of 1,3-Dibromo-5,5-Dimethylhydantoin (PorciBrom™) in a Pork Harvest Intervention System. Center for Meat Safety & Quality, Department of Animal Sciences. Colorado State Univ. 2019. Data on file.

4 Tonsor, GT. Assessing Economic Value of Non-corrosive Antimicrobials in Reducing Processor's Physical Asset Costs. 2021