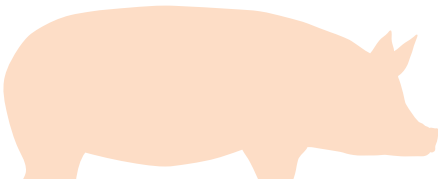




Controlling Total Plate Counts with PorciBrom can increase shelf life.



WHAT IF YOU COULD
**IMPROVE
SHELF LIFE
OF PORK**
WITHOUT NEGATIVELY
AFFECTING MEAT QUALITY?

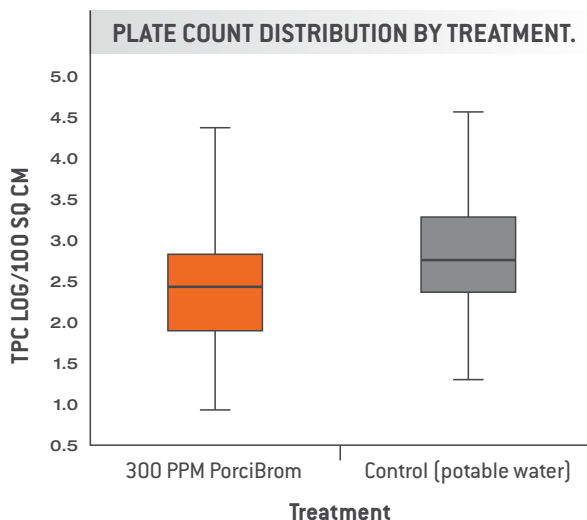
SUPPORTS SHELF LIFE EXTENSIONS.

Recent case studies¹ in commercial packing facilities found that using PorciBrom™ (DBDMH) in the carcass wash reduced total plate count (TPC) on the carcass by about 1 log compared to carcasses treated with potable water. Facility managers observed that the reduction in TPC correlated to an extension in shelf life of the product, without affecting overall quality or color of the meat.

Samples were taken over a 14-month period from 312 pork carcasses (control n=154; treated with PorciBrom n=158). Samples were collected from carcasses treated with potable water (control) in the carcass wash for the first seven months. PorciBrom was then implemented in the carcass wash for a subsequent seven months, and samples were collected. Treatment protocol included sampling a 10 cm square area on the carcass using a sample sponge at the carcass wash. The samples were taken at three points along the carcass: belly, jowl and ham.

Data collection showed that the use of PorciBrom in place of water in the carcass wash lowered TPC compared to the control.

Average counts for carcasses treated with PorciBrom™ were 2.3 TPC/log per 100 cm², compared to the 3.2 TPC/log per 100 cm² recorded for control carcasses.



TOTAL PLATE COUNT COMPARISONS.

TPC LOG/100 Sq cm by treatment	Minimum	1st Quartile	Median	3rd Quartile	Maximum
300 PPM PorciBrom	0.92	1.917	2.376	2.734	4.32
Control (potable water)	1.70	2.959	3.263	3.653	4.79

The shelf life of fresh pork is adversely impacted by the bacteria load present on the pork, as well as other environmental factors such as temperature and packaging. Incorporating PorciBrom into a multi-hurdle, multi-technology approach can promote reductions in TPC, which can also support improvements in shelf life of the product.

EFFECTIVE AGAINST *SALMONELLA*.

This commercial study is consistent with research conducted on the efficacy of PorciBrom™ in reducing inoculated populations of non-pathogenic *Escherichia coli* biotype 1, used as a surrogate for pathogenic *Salmonella*, as well as natural microflora on pork carcasses.

In a study conducted in a commercial facility²:

- Application of PorciBrom in the carcass wash cabinet reduced ($P < 0.05$) inoculated surrogate populations to 4.8 log CFU/cm², compared to the 6.1 log CFU/cm² population initially obtained.
- Application of PorciBrom in the spray chill further reduced ($P < 0.05$) inoculated surrogate populations to 3.7 log CFU/cm².
- The whole intervention system (carcass wash followed by spray chill) provided a 2.4 log CFU/cm² reduction of the inoculated surrogate populations compared to the control.

While initial Enterobacteriaceae (EB) counts for uninoculated samples were too low to clearly differentiate between pretreatment control and the whole system, samples from uninoculated zones all had detectable aerobic plate counts (APC).

- An initial APC of 3.0 log CFU/cm² was collected.
- After application of PorciBrom in the carcass wash, the APC was reduced ($P < 0.05$) to 2.4 log CFU/cm².
- The APC was reduced further ($P < 0.05$) to 1.5 log CFU/cm² after application of PorciBrom in the spray chill.
- The whole intervention system reduced ($P < 0.05$) APC on uninoculated zones by 1.5 log CFU/cm².

Commercial trials as well as research studies continue to validate the effectiveness of PorciBrom in reducing foodborne pathogens in pork, promoting meat quality and extended shelf life.



To learn more about PorciBrom contact your ARM & HAMMER™ representative or visit AHfoodchain.com.

¹ ARM & HAMMER customer data. Data on file. 2020.

² 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.