



# CHLORINE-WASHED CHICKEN

## WHAT IS CHLORINATED CHICKEN? IS CHLORINE-WASHED CHICKEN SAFE TO EAT?

Chlorinated chicken – or chlorine-washed chicken – simply means that chicken was rinsed with chlorinated water; chlorine is not present in the meat. Just as chlorine helps make drinking water safe, it can help remove potentially harmful bacteria from raw chicken.

Numerous studies and research have confirmed that the use of chlorinated water to chill and clean chicken is safe and effective. Chlorine-washed chicken does not pose any human health concerns and it is not present in the final product.

Hypochlorous (i.e. chlorine) is a common disinfectant used in water treatment and food processing worldwide. Although it is proven safe, a lot of U.S. plants have moved away from chlorinated water in their chilling systems and rinses, opting for alternatives.

The National Chicken Council would estimate that chlorine is used in chilling systems and rinses in about 20-25% of processing plants in the U.S., as a lot of U.S. plants have moved away from its use. Most of the chlorine that is used in the industry is used for cleaning and sanitizing processing equipment.

All chicken produced in the United States is closely monitored and inspected by the U.S. Department of Agriculture's Food Safety and Inspection Service (FSIS).

### IS CHLORINATED CHICKEN SAFE TO EAT?

Yes. Safe levels of chlorinated water (or chlorine washes) have been deemed safe and efficacious by the U.S. Department of Agriculture (USDA), the U.S. Food and Drug Administration (FDA), the European Food Safety Authority (EFSA) and the Codex Alimentarius Commission, which sets international standards for food safety.

People here in the states, and those around the world, have been eating U.S. chicken safely for decades. Further, the U.S. poultry industry is the #2 chicken exporter in the world, sending product to more than 100 countries around the world. The U.S. poultry industry exports about 20 percent by weight of all the chicken meat produced in the U.S.

There are safe levels of chlorine present in much of the drinking water in the United States and Europe – to make it safer.

### WHY DO SOME CHICKEN PLANTS USE CHLORINE?

As part of their food safety systems in order to meet government standards, some chicken companies may use chlorinated water at USDA-approved levels in immersion chilling systems and rinses as an effective antimicrobial. This is based on a substantial body of scientific studies and a best practice recommendation from USDA that chlorinated water to kill or inhibit the growth of bacteria and pathogens like *Salmonella*.

The USDA has a strict cap on the amount of chlorine that can be used in these chiller baths: no more than 50 parts per million, or 50 ounces for every 7,800 gallons of water. For perspective, if chlorine is used in immersion chilling systems, it is used in parts per million, and incorporated into the several thousand gallons of water present, and is diluted significantly. When tested at the overflow, most chillers rarely exceed 3-5 ppm (parts per million) of





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hypochlorous. To put a part per million into perspective, it is equivalent to one inch out of 15.8 miles or one minute in almost two years.

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## IS USING AN ANTIMICROBIAL LIKE CHLORINE TAKING A SHORT CUT TO COVER-UP BAD PRACTICES?

Absolutely not. The use of antimicrobials is only one step in a long food safety process that goes even further than farm to fork. Its use is not a silver bullet, but rather one tool in the tool box to keep chicken as safe as possible before reaching consumers:

- It all starts even before the egg. Breeder hens—who produce the eggs—are attended to carefully and humanely. Healthy breeder hens lead to healthy eggs and eventually, healthy chicks. Additional measures are taken to ensure the chicks inherit the hens' natural, good antibodies while preventing the sharing of any bad antibodies or diseases.
- At the hatchery where the chicks are hatched, strict sanitation measures and appropriate vaccinations ensure the chicks are off to a healthy start. At the feed mill, the corn and soybean meal that the chickens eat is heat treated, killing any bacteria that may be present. And on the farm, veterinarians and strict biosecurity measures ensure chickens are safe and healthy.
- At the processing facility, the U.S. federal meat and poultry inspection system complements efforts by chicken processors to ensure that the every single chicken product is safe, wholesome and correctly labeled and packaged. (U.S. Department of Agriculture inspectors are present in every facility that processes chickens – it is required by law.)
- These efforts at the processing facility include: organic rinses that cleanse the chicken, reducing any potential foodborne pathogens or bacteria; keeping the meat at the proper cool temperature; and using metal detectors to make sure that no foreign object makes its way into a product or package. Microbiological tests are then conducted on the products by both the companies and federal laboratories to help ensure that food safety systems are working properly and that each and every final product meets USDA standards for wholesomeness – whether they are for domestic consumption or for export.



## IS IT SAFE TO USE CHLORINATED WATER ON CHICKEN?

Numerous scientific studies strongly support the use of chlorinated water in the context of a valid food safety system as the most effective means to reduce and control the level of microbiological contamination of poultry meat and poultry meat products.

One such study was completed by the University of Maryland and the Joint Institute for Food Safety and Nutrition, a leading and respected food science center in the United States. It affirmed the safety of chlorine's use in water treatment and food processing, emphasizing the public health benefits gained from reduced waterborne and foodborne illnesses. The full study can be [read here](#).

FSIS personnel closely monitor poultry carcasses to ensure that zero chlorine is present after treatment. [Data from a study](#) conducted by experts at Mississippi State University indicate that there are no residues of hazardous substances in poultry meat treated with chlorine-based compounds.

## IF CHICKEN HAS BEEN WASHED WITH CHLORINE, IS IT STILL PRESENT ON THE MEAT?

[Studies](#) have determined that there are no residues of hazardous substances in poultry meat treated with chlorine-based compounds.





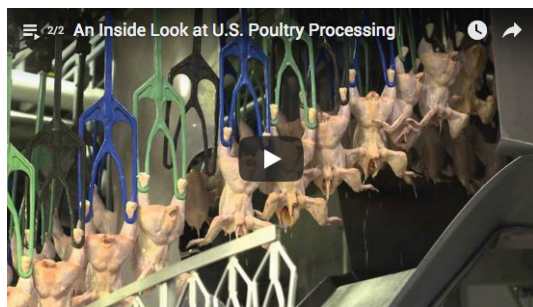
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Chlorine is a food-grade antimicrobial approved for use by the USDA as a very safe and effective way to kill or inhibit the growth of any potential bacteria and foodborne pathogens, like *Salmonella*. It works very quickly and then dissipates.

See how chicken is processed in the United States, and get an inside look at the food safety procedures carried out by U.S. chicken processing plants.

## IF CHLORINE-WASHED CHICKEN IS SAFE TO EAT, WHY HAS THE EUROPEAN UNION BANNED IT?



Chlorinated chicken was banned by the European Union (EU) in 1997. Although chlorinated chicken is still banned in the EU, the [European Food Safety Authority](#) (EFSA) has deemed chlorine-washed chicken safe. In [a 2005 study, the EFSA](#) found that treating poultry carcasses with the four most-commonly used antimicrobial substances “would be of no safety concern.”

Still, politicians in Europe treat this more of a political issue rather than an issue of science, and have voted towards protectionist measures that continue to keep US chicken out, even though its own food safety authority has deemed these products safe.

Further, the US is ready to use acceptable chlorine alternatives that would meet the requirements established by both the US and the UK.

## ASIDE FROM CHLORINE, ARE THERE OTHER COMMON ANTIMICROBIALS USED IN CHICKEN PROCESSING?

Common antimicrobial interventions when processing chickens include the use of paracetic acid (PAA), cetylpyridinium chloride (CPC), acidified sodium chlorite (ASC), organic acid rinses, bromine and others.

Peracetic acid, for example, is an organic compound, basically vinegar and hydrogen peroxide. It is permitted for use in poultry products labeled as “organic,” as well.

CPC is an antiseptic that kills bacteria and other microorganisms. It is commonly found in toothpaste, mouthwash and nasal sprays.



## LOOKING FOR MORE INFORMATION ON CHLORINE-WASHED CHICKEN?

- National Chicken Council: [Questions & Answers about Processing Aids Used in Chicken Production](#)
- Mississippi State University: [The Use of Chlorine in Poultry Chiller Water](#)
- University of Maryland: [Risk Assessment of Disinfection Byproducts in Poultry Chilled in Chlorinated Water](#)
- Chlorinated Chicken: [Why You Shouldn't Give a Cluck](#)