UNITED STATES DEPARTMENT OF AGRICULTURE
FOOD SAFETY AND INSPECTION SERVICE
WASHINGTON, DC

# FSIS NOTICE	45-03	11/3/2003

Use of Chlorine to Treat Poultry Chiller Water

I. PURPOSE

In light of various issues that have been raised recently regarding the use of chlorine in poultry pre-chiller and chiller water, FSIS is issuing this notice to clarify and reiterate its policy regarding the use of chlorine to treat either potable water or reuse water as it enters the poultry carcass pre-chiller and chiller. This notice relies solely on positions that FSIS has previously articulated on the use of chlorine in poultry chiller water. The notice also provides inspection program personnel with the procedures they are to follow when verifying that establishments use chlorine in a manner consistent with FSIS policy.

II. TERMINOLOGY

Poultry chiller makeup water: Poultry chiller makeup water is water added to the pre-chiller or chiller to replace the water lost by either overflow or absorption. Poultry chiller makeup water may be potable water or reuse water.

Reuse water: Reuse water is water, ice, and solutions previously used to chill or wash raw product which may be reused provided that measures are taken to reduce physical, chemical, and microbiological contamination so as to prevent contamination or adulteration of product (9 CFR 416.2(g)). In poultry carcass chilling operations, reuse water is sometimes referred to as “red water.” In poultry chilling water reuse systems, FSIS will not consider water added back from chill tanks as reuse water until carcasses begin exiting the chiller.

Free available chlorine: Free available chlorine is the concentration of hypochlorous acid (HOCL) and hypochlorite ions (OCL) existing in chlorinated water.

NOTE: This notice uses the term “free available chlorine” when referring to parts per million (ppm) chlorine. While the Agency used “available chlorine” in 9 CFR 381.91, the more accurate terminology is “free available chlorine.” (Reference: Handbook of

Chlorination and Alternative Disinfectants, Fourth Edition, Geo. Clifford White)

III. POLICY

A. What is the Agency's policy regarding the levels of use for chlorine in poultry chiller water?

Potable water used to initially fill the pre-chiller, chiller, or red water system, or that is added as makeup water, may contain up to 50 ppm free available chlorine measured at intake (influent) (60 FR 6774, 6794-6795 February 3, 1995). Water from the red water system that is re-used in the pre-chiller or chiller may contain no more than 5 ppm free available chlorine (Sanitation Performance Standards Compliance Guide) measured at influent to pre-chiller or chiller. Within these levels, the chlorine is to be used in an amount that does not exceed the minimum required to accomplish its intended effect, e.g., see D. H. Sanders and C. D. Blackshear. Effect of Chlorination in the Final Washer on Bacterial Counts of Broiler Chicken Carcasses. *Poultry Science 50(1)*: 215-219, 1971.

B. What are the Agency expectations of how establishments address the use of chlorine?

FSIS expects an establishment to ensure that these levels are not exceeded and to demonstrate such by maintaining records as part of a HACCP plan, Sanitation SOP, or prerequisite program.

IV. INSPECTION PROGRAM PERSONNEL RESPONSIBILITIES

A. How do Consumer Safety Inspectors (CSIs) verify that an establishment is in compliance with Agency policy regarding the use of chlorine in poultry chiller makeup water?

When verifying that establishments are ensuring that chlorine levels in poultry chiller water are not exceeded, (e.g., by making observations of the establishment monitoring chlorine levels or by verifying that results are recorded), CSIs, under the appropriate ISP code, are to make observations and seek answers to questions such as:

Does the establishment address the use of chlorine in a HACCP, Sanitation SOP, or prerequisite program?

Does the establishment maintain records in accordance with the requirement of the program under which the chlorine is addressed?

Does the establishment monitor and record chlorine levels by taking samples of the poultry chiller water before birds have been introduced into the chiller, or of intake water to which chlorine has been added before the water enters the chiller tank, to ensure that there is no more than 50 ppm free available chlorine in the water?

NOTE: When chlorine gas enters from a separate line (i.e. not flowing into the potable water line then into the chiller), the establishment should have a system in place to monitor the chlorine level to ensure that it is dispensed at a rate that provides no more than the equivalent of 50 ppm free available chlorine at the chiller intake.

Does the establishment that adds chlorine to reuse water used as poultry pre-chiller or chiller makeup water, monitor chlorine levels by taking samples of the poultry chiller water to which chlorine has been added after carcasses begin exiting the chiller but before the water enters the chiller tank (at intake) to ensure that there is no more than 5 ppm free available chlorine in the reuse water?

NOTE: CSIs do not need to test for chlorine levels.

B. How do CSIs document noncompliance?

1. If the answers to any of the questions in A or similar questions are "no," CSIs are to:

<u>For chlorine addressed under HACCP</u>

a. issue a NR under the appropriate 03 ISP code as described in FSIS Directive 5000.1, Revision 1, Chapter II (HACCP) and IV (Enforcement),

b. reference 9 CFR 417.5,

c. mark the "recordkeeping" trend indicator, and

d. verify that the establishment takes corrective and preventive action.

<u>For chlorine addressed under Sanitation SOPs</u>

2. If the answers to any of the questions in A or similar questions are "no," CSIs are to:

a. issue a NR under the appropriate 01 ISP code as described in FSIS Directive 5000.1, Revision 1, Chapter I, (Sanitation SOPs) and IV (Enforcement),

b. reference 9 CFR 416.16,

c. mark the "recordkeeping" trend indicator, and

d. verify that the establishment takes immediate and further preventive action in its Sanitation SOPs.

For chlorine addressed under a prerequisite program

3. If the answers to any of the questions in A or similar questions are "no," CSIs are to:

   a. issue a NR under the appropriate 03 ISP code as described in FSIS Directive 5000.1, Revision 1, Chapter II (HACCP) and IV (Enforcement),

   b. reference 9 CFR 417.5,

   c. mark the "recordkeeping" trend indicator, and

   d. verify that the establishment reassesses the hazard analysis to determine whether the operation of the prerequisite program still continues to support the decisions made in the hazard analysis about the effectiveness of the use of chlorine.

4. If an establishment produces product that has been exposed to chlorine above the specified levels and fails to:

   For chlorine addressed under HACCP

   a. take corrective and preventive action under 9 CFR 417.3,

   For chlorine addressed under Sanitation SOPs

   b. take immediate and further preventive action under 9 CFR 416.15, or

   For chlorine addressed under a prerequisite program

   c. reassess the hazard analysis to determine whether the decisions made in the hazard analysis about the effectiveness of the use of chlorine remain valid and make a proper disposition of product.

CSIs are to issue a NR under the appropriate ISP code (See FSIS Directive 5000.1, Revision 1, Chapter IV).

NOTE: Establishments may be required to provide evidence that product exposed to levels of chlorine above those specified in this notice are not adulterated.

All questions related to this notice should be directed to the TSC.

Philip S. Derfler /s/

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