GOOD MANUFACTURING PRACTICES

Fresh Broiler Products

Introduction

The recommended Good Manufacturing Practices address every control point in the production and processing of broiler chickens, and are designed to enhance both product quality and consumer protection. Unique to products regulated by the U.S. Department of Agriculture, the procedures are drawn from quality control programs throughout the broiler industry, the scientific literature, and existing regulatory documents.

This document is designed for two important functions:

- to serve as a check list for industry to identify necessary controls, and make sure they are in place; and

- to make public the extent and sophistication of the technical controls used to produce today’s broilers.

Additional descriptive language may be found in the documents that legally govern the broiler industry:

Title 9 of the Code of Federal Regulations, Chapter III, Parts 381, 416, 417, and 424.


Title 21 of the Code of Federal Regulations, Chapter I, Part 110, Sections 110.3-110 (21CFT110)

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I. PRODUCTION

A. Management Practices and Production Technologies

Each company should have a Breeder/Broiler Production Manual, which includes pesticide use and microbiological control recommendations. Copies should be provided to all independent grower contractors and company-owned farm managers.

1) Maintain proper facilities standards

Minimum standards should be established for location and maintenance of roads, maintenance of external grounds, construction of buildings, size of buildings, drainage, ventilation, water supply, equipment construction and maintenance, and physical pest control measures.

2) Provide growers with pesticide-use information

Processing/contracting companies should work with growers to insure that the Federal Insecticide, Fungicide and Rodenticide Act, as well as appropriate FDA, USDA, and EPA regulations are followed. The Production Manual, contracts, and other educational materials should be used to insure that the processing/contracting company has control over any use of pesticides, and that no use is allowed without the express approval of the processing/contracting company.

3) Grower contracts should include pesticide-use statements

Prior to flock delivery growers should certify that the Federal Insecticide, Fungicide and Rodenticide Act and all pertinent state and federal regulations have been adhered to with respect to any pesticide use.

4) Enforce Bio-Security programs

Bio-Security programs are designed to minimize flock contact or contamination from humans, other flocks, wild birds or other animals, pets, feeds not provided by the contracting company, unsafe water, or contaminated equipment.

Visitor control programs must protect against inter- and intra-house, or inter- and intra-farm contamination, and should include the use of plastic or rubber boots and footbaths for disinfecting boots between flocks.

Control programs should include procedures for proper disposal of all flock mortalities. Compliance with company standards, as well as any state laws or regulations, must be monitored. Programs may include provisions for incineration, rendering, or the use of disposal pits, as appropriate.
B. Animal Health Care

1) Ensure that pharmaceutical laws and regulations are followed

Only FDA-approved pharmaceuticals are to be used, and in an approved manner.

2) Enforce company standards for pharmaceutical use

Growers should only be allowed to use pharmaceuticals furnished by processing/contracting companies. Processing/contracting companies should keep pharmaceutical records on an individual flock basis.

C. Breeding Operations

1) Maintain standards for breeder feeds

Specifications for breeder feeds should include ingredients, preparation methods, nutritional profile, as well as controls on pharmaceuticals, microbiological and chemical residues.

2) Monitor and control breeder flock health

Companies should have both a poultry health monitoring program and a program of appropriate vaccination. The vaccination program should be designed and implemented based on flock observation, serological testing and condemnation standards.

3) Establish procedures to control poultry pathogens

Testing for *Salmonella pullorum, Salmonella gallinarum, Mycoplasma gallisepticum, Mycoplasma synoviae* and other poultry pathogens should be part of breeder monitoring.

4) Establish procedures to interrupt egg-borne poultry disease transmission

Breeder hens should be monitored, and unhealthy birds removed from the breeder flock.

5) Monitor and control egg cleanliness

Egg cleanliness can be controlled through the use of appropriate housing, equipment and nesting materials. Cleanliness can be insured through a program of visual inspection during collection, and the maintenance of effective sanitation programs for egg-holding rooms on breeder farms.
6) Maintain control of breeder flock egg distribution

All broiler breeder flock eggs that are not to be set should either be pasteurized before offered for human or animal consumption, or be diverted to non-food use.

D. Hatcheries

Companies should prepare and utilize a hatchery operation manual.

1) Sanitize incubators and hatchers

Clean eggs should be placed in clean setters or incubators. After 18 days they should be transferred to clean hatchers. As with other equipment, these may be maintained by utilizing an appropriate cycle of clean-wash-sanitize.

2) Maintain proper sanitation of facilities

Sanitation programs should be followed by each company. Programs should include proper sanitation of hatchery, egg-pickup, and chick delivery vehicles.

3) Monitor egg cleanliness

Eggs should be inspected upon arrival at the hatchery for condition and cleanliness, and monitored until hatched.

4) Monitor effectiveness of microbiological control programs

Microbiological testing should include the general facility, as well as all surfaces and equipment. The monitoring program should also include air quality testing.

5) Properly handle and dispose of eggs and chicks not selected for broiler production

Every company should have appropriate procedures, which are rigidly enforced at all times.

6) Properly dispose of hatchery wastes

Company standards must follow all applicable state laws and regulations, and may include provisions for either landfill or rendering of wastes.
E. Grow-Out Feed Preparation

1) Test for and control microbiological quality in feed ingredients

Each company should have specifications for microbiological quality in feed ingredients. Of utmost concern are aflatoxins in grain and *Salmonella* and other bacteria in rendered protein products. Representative samples should be taken of incoming ingredients and tested to ensure that company specifications are met, and established procedures are followed. Ingredients should only be purchased from vendors who are able to meet company specifications.

2) Test for and control pesticide and other chemical residues in ingredients

Each company should have specifications for pesticide and chemical residues in feed ingredients. Suppliers should be informed of company specifications. Representative samples should be taken from incoming ingredients and tested for conformity to specifications. Ingredients should only be purchased from vendors who are able to meet company specifications.

3) Maintain records of feed distribution

Ingredient inventories should be coupled with records on ingredients use, as well as the date and flock destination for feed delivery.

4) Maintain proper on-site pharmaceutical inventories

Daily checks should insure compliance with FDA regulations, and the security of the inventory. Compare daily physical inventory to medicated feeds actually manufactured to ensure proper usage.

5) Ensure that pharmaceutical laws and regulations are followed

Only FDA-approved pharmaceuticals are to be used, and in an approved manner.

6) Continue the prohibition on the use of hormones

Broiler producers have not used hormone growth-enhancing treatments for many years, and have no desire to reinstate the practice.

7) Maintain proper sanitation and dust control

Facilities and equipment should be maintained in a sanitary condition, and kept in repair and adjustment sufficient to prevent feed from becoming contaminated.
8) Pelleting of grow-out feeds is recommended

Pelleting of broiler feed improves handling and feeding, increased growth rates, decreases ingredient separation, and reduces microbial levels.

9) Test for pathogen in finished feeds

Finished feeds should be monitored to ensure that company specifications and established procedures are followed.

10) Test for pharmaceutical and chemical residues in finished feeds

Finished feeds should be monitored to ensure that company specifications and FDA regulations are met.

11) Properly clean tanks, bins, and equipment

Feed mill equipment should be cleaned as appropriate to maintain standards without subjecting subsequent lots to moisture or chemical contamination.

F. Environmental Conditions

1) Maintain proper water quality

Each company should have a control program to ensure an appropriate supply of fresh, clean water.

2) Allow proper separation between poultry houses

Proper distance between houses allows for flock separation and improves air quality.

G. Grow-Out

1) Control wild birds, rodents, and other pests

Keep houses properly screened to eliminate wild birds in poultry houses. Rats and mice can be controlled by using bait stations between flocks. Use only approved pesticides in the proper manner to control rodents and insect pests.

2) Maintain a program for proper litter selection and management

Litter sources should be monitored to ensure that potential problems from chemical residues in litter do not occur. Litter management programs should be designed to provide a healthy growing environment.
3) Maintain a program for used litter management disposal

Litter should be disposed of properly in accordance with state and local regulations.

4) Establish procedures for timely bird selection

A continuous on-farm inspection should be utilized to ensure that only birds that appear healthy are submitted for processing.

5) Pre-slaughter chemical residue monitoring programs are recommended

Pre-slaughter chemical residue testing allows monitoring compliance with FDA-USDA-EPA standards. Companies should have programs to complement feed and litter monitoring programs, and appropriate procedures to eliminate from the food supply birds, which do not meet those standards.

6) Ensure proper drug withdrawal procedures

Feed delivery schedules and on-farm procedures must ensure that FDA drug-withdrawal regulations are followed prior to the time birds are scheduled to be slaughtered.

7) Ensure proper feed and water withdrawal procedures

Each company should have a program to ensure that feed and water is withdrawn sufficiently prior to slaughter to minimize potential ingesta contamination during processing.

H. Transport For Slaughter

Cage, coop, and truck sanitizing are recommended. An appropriate clean-wash-sanitize cycle can, not only, minimize cross-contamination between flocks, but can also minimize contamination brought into the processing plant.

II. SLAUGHTER OPERATIONS

As noted earlier, USDA regulations (Title 9 of the Code of Federal Regulations and the Meat and Poultry Inspection Manual) establish minimum standards for broiler slaughter and processing operations.

Company standards should be established for location and maintenance of roads, maintenance of external grounds, construction of buildings, drainage, ventilation, water supply, equipment construction and maintenance, and pest control measures.
A. Pre-Operative Sanitation Procedures

1) Microbiological Monitoring

Pre-operative sanitation conditions should be monitored visually each day and a routine program of microbiological monitoring of product contact surfaces should be established.

B. Ante-mortem Inspection

1) Establish access to flock records

When a flock is presented for slaughter each company should have a system of referring to flock records, including mortality, medication, and feed delivery records.

2) Maintain flock kill records

Companies should keep kill data and location records, and should be able to couple them with the existing flock pharmaceutical records.

C. Scalding and Picking Operations

1) Utilize counter flow scalder systems

USDA defines counter flow as that in which the water flows counter to the flow of birds at all points, i.e., the make-up water is introduced at the point where the birds exist the scalder, and the water overflow occurs at the point where the birds enter the scalder.

2) Maintain proper scald-tank water replacement

At least one quart of clean, heated water at the proper temperature must be introduced into the scalding tank for each bird processed.

3) Maintain proper scald temperatures

Scald water temperatures should be high enough to aid in the efficient defeathering of the bird, yet not so high as to overscald or produce broilers of unacceptable quality.

4) Ensure proper post scald bird-wash

A post scald cabinet washer should be employed either at the scalder exit or at some other location immediately after the scalder, but before the picker.
5) Maintain proper sanitation

Appropriate clean water should be used in order to prevent feather buildup in pickers, and to rinse both the machines and the birds.

6) Control picker operation

Proper maintenance and adjustment are essential to the efficient and effective operation of mechanical pickers.

7) Control picking-line washer

Proper adjustment of the picking-line washer effectively rinses bird exteriors. Washer water should be chlorinated to a total level of 20 part per million.

8) Properly rinse post-hock cutter transfer belt.

Systems should be in place to provide effective and continuous rinsing of the transfer belt. Rinse water should be chlorinated to a total level of 20 parts per million.

D. Evisceration, Inspection and Dressing

1) Ensure proper feed and water withdrawal procedure

Each company should have a program to ensure that feed and water is withdrawn sufficiently prior to slaughter to minimize potential ingesta contamination during processing.

2) Control eviscerating line equipment

Proper maintenance and adjustment of mechanical eviscerators and equipment are necessary in order to maintain both product quality and processing line efficiency.

3) Rinse and sanitize eviscerating line equipment continuously, subject to USDA regulations

4) Enforce standards for employee hygiene

Personnel with clean hands, clothing and good hygiene practices are essential to the production of wholesome products. Employee standards should include outer garments, head coverings, safety and cleanliness devises such as gloves, aprons, or protective shields, and should restrict jewelry and ornamentation, and food or tobacco use in plants.
5) Ensure proper final bird-wash

The final step in slaughter processes should be a whole-carcass rinse using water chlorinated to a total level of 20 parts per million.

E. Chilling Operations

1) Maintain proper chiller water replacement

At least ½ gallon of clean, chilled water must be introduced into the chiller tank for each carcass, or alternative USDA-approved procedures followed.

2) Maintain proper water quality

Clean, potable water, chlorinated to achieve a total level of 20 to 50 parts per million in the intake water, should be utilized in order to facilitate the reduction of total microbiological loads and prevent product quality deterioration. The amount of chlorine added to the intake water should be sufficient to achieve 1 to 5 parts per million available chlorine at the chiller overflow.

3) Maintain proper chiller temperature

Chiller water temperatures must be regulated to ensure that end-product temperatures of 40ºF or less are reached in the time required by USDA regulations.

F. Microbiological and Chemical Monitoring

After slaughter processing, a statistically valid program of random monitoring of chemical residues should be employed in order to assure compliance with tolerances. Likewise, processors should employ a statistically valid program of sampling fresh processed poultry to determine microbiological quality in order to monitor quality assurance programs.

III. POST-CHILLER CUT-UP AND PACKAGING

A. Maintain proper facility sanitation

Buildings, fixtures and equipment should be maintained in a sanitary manner sufficient to prevent product from becoming contaminated or adulterated. All equipment must be cleaned, washed, and sanitized at least once each day, and must be examined to ensure that proper sanitation standard are met prior to beginning operation each day. Where the temperature of processing areas is not kept below 50ºF, all equipment, which comes in contact with product, must be rinsed at least every 5 hours.
B. Establish standards for employee hygiene

Personnel with clean hands, clothing and good hygienic practices are essential to the production of wholesome products. Employee standards should include outer garments, head coverings, safety and cleanliness devices such as gloves, aprons, or protective shields, and should restrict jewelry and ornamentation, and food or tobacco use in plants.

C. Maintain proper product temperature

Product should be maintained at a temperature below 55°F. Product that will stay in a vat or cut-up bin more than 30 minutes should be iced to maintain proper temperature.

D. Maintain rapid product movement

Product should move through the entire cut-up process rapidly enough to ensure that the temperature does not rise above 55°F.

IV. DISTRIBUTION

A. Lot identification

Each company should establish appropriate lot identification procedures, such as lot codes. A lot is the food produced during a period of time, up to one day, which is indicated by a specific lot code.

B. Sanitation

Storage and transportation of broiler products should be under conditions that will protect food against physical, chemical, and microbial contamination, as well as against deterioration of the food and the container.

C. Product Quality

Companies should work in cooperation with distributors to develop programs to ensure proper product handling. In addition to education, companies must develop systems to provide distributors with information on the proper distribution temperature necessary to maintain the quality and safety of each type of product.