

BC Poultry Biosecurity Reference Guide



Funding provided by:



BC Poultry Biosecurity Reference Guide

Funded by

Agriculture and Agri-Food Canada

Published by

BC Poultry Association

Prepared by

BC Poultry Association Biosecurity Committee

Editor

Dr. Bill Cox

November 2006

Acknowledgements

The British Columbia Poultry Association gratefully acknowledges the many people and organizations that have contributed their time and effort to developing the first edition of the British Columbia Poultry Biosecurity Reference Guide. These include the following:

BC Poultry Association

Ray Nickel, BC Turkey Growers' Association, BCPA Chair
Allan James, BC Chicken Producers, BCPA Secretary
Garnet Etsell, BC Turkey Growers' Association, Treasurer
Calvin Breukelman, BC Broiler Hatching Egg Producers
Derek Janzen, BC Egg Producers' Association
Rick Thiessen, BC Chicken Growers' Association
Patrick Huestis, BC Turkey Growers' Association
Ken Falk, BC Specialty Bird Producers' Association
Dave Janzen, BC Chicken Market Board
Jack Vaandrager, BC Egg Marketing Board
Les Burm, BC Turkey Marketing Board
Vic Reiger, BC Broiler Hatching Egg Commission

BC Poultry Biosecurity Committee

Calvin Breukelman, BC Broiler Hatching Egg Producers', Chair.
Allen James, BC Poultry Association
Ken Falk, BC Specialty Bird Producers' Association
Rick Thiessen, BC Chicken Growers' Association
Dion Wiebe, BC Broiler Hatching Egg Producers' Association
Steve Heppel, BC Turkey Growers' Association
Derek Janzen, BC Egg Producers' Association
Chris den Hertog, BC Broiler Hatching Egg Commission
Jack Vaandrager, BC Egg Marketing Board
Les Burm, BC Turkey Marketing Board
Elise Legendre, Agriculture and Agri-Food Canada
Dr. Daniel Schwartz, Canadian Food Inspection Agency
Dave Dyble, Animal Nutrition Assoc. of Canada, BC Division
Dr. Merv Wetzstein, BC Ministry of Agriculture and Lands
Stewart Paulson, BC Ministry of Agriculture and Lands
Ron Kilmury, BC Chicken Marketing Board
Angela McKee, BC Broiler Hatching Egg Commission
Dr. Neil Ambrose, BC Processors' Association

BC Poultry Biosecurity Technical Sub-Committee

Calvin Breukelman, BC Hatching Egg Growers' Association, Chair
Dion Wiebe, BC Broiler Hatching Egg Producers' Association
Steve Heppel, BC Turkey Growers' Association
Ron Kilmury, BC Chicken Marketing Board
Peter Whitlock, BC Egg Marketing Board
Elise Legendre, Agriculture and Agri-Food Canada
Dr. Dan Schwartz, Canadian Food Inspection Agency
Dr. Merv Wetzstein, BC Ministry of Agriculture and Lands
Dr. Bill Cox, Canadian Animal Health Management Services Ltd, Editor
Ron Bertrand, BC Poultry Biosecurity Program Coordinator
Niels Holbek, BC Poultry Biosecurity Program Coordinator

Boards and Commission Chairs and Support Staff

The content of the Reference Guide is based on the BC Poultry Industry Biosecurity Manual – 2004 that was published and circulated to the poultry industry in 2004 and 2005. The BCPA acknowledges the authors and editors of this document with special thanks to Dr. Victoria Bowes and Angela McKee.

The format of the Reference Guide is based on the Environmental Farm Plan Reference Guide developed by the Ministry of Agriculture and Lands and published by the British Columbia Agriculture Council. The BCPA would like to recognize the editors of this document; Geoff Hughes-Games, PAg, Orlando Schmidt, PAg, Rick Van Kleeck, P. Eng., and Lance Brown.

The BCPA offers special thanks to William Cox, DVM, lead author of the Reference Guide and to Gustav Rogstrand author of the section on mortality management.

Funding for developing the Reference Guide was provide by Agriculture and Agri-Food Canada through the ACAF program. These funds were managed by the Investment Agriculture Foundation of B.C. The BCPA acknowledges these agencies and the essential role they played in ensuring the necessary funding was in place for this project and all other aspects of the B.C. Poultry Biosecurity Program.

Finally, the BCPA thanks Niels Holbek, PAg, and Ron Bertrand, PAg, for providing coordination services in developing the Reference Guide and for other aspects of the B.C. Poultry Biosecurity Program.

Preface

This Reference Guide has been developed as an information resource to assist poultry producers in developing biosecurity plans for their farming operations. Biosecurity planning and implementation reduces the risk of infectious disease transfer within and among poultry flocks. Enhancing your farm's biosecurity protects both your economic interest and that of the industry. Furthermore, it reduces the risk to public health that may result from certain poultry diseases.

This Guide provides current information on a variety of biosecurity related practices. It includes references to legislative requirements, details about beneficial biosecurity practices, a glossary of terms and sources of further information.

The BC Poultry Biosecurity Reference Guide is part of the BC Poultry Biosecurity Program. The Program provides producers with the opportunity to plan and implement biosecurity practices that meet the mandatory biosecurity standards required by the relevant Boards and Commissions. The Reference Guide is intended to be used in conjunction with the Poultry Biosecurity Planning Workbook. The Planning Workbook provides a step by step process for producers to evaluate their on-farm biosecurity. With funding assistance from the program, producers can correct identified deficiencies prior to completing a biosecurity audit and receiving biosecurity certification.

The BC Poultry Biosecurity Program builds upon companion programming delivered through the BC Agriculture Council's Environmental Farm Program. Planning Advisors knowledgeable about both programs are available to assist poultry producers in undertaking and implementing either or both programs.

The BC Biosecurity Program is an industry led initiative that is supported by the federal government, the provincial government and the provincial poultry boards and commissions. The BC Poultry Association, in conjunction with its partners encourages producers to take full advantage of the opportunities the program offers. Doing so will demonstrate your commitment to help protect your farm future and the health of the poultry industry in British Columbia.

Sincerely

Ray Nickel
President, BC Poultry Association

Calvin Breukelman
Chair, BC Poultry Biosecurity Committee

Limits of Liability

The primary purpose of the BC Poultry Biosecurity Reference Guide is to assist producers in developing a Biosecurity Program for their farms.

Every effort has been made to ensure the accuracy and completeness of this Guide but, the Guide should not be considered the final word on areas of practice that it may cover. You should seek the advice of appropriate professionals and experts as the facts of your situation may differ from those set out in this Guide.

All information in this Guide is provided entirely “as is” and no representations, warranties or conditions, either expressed or implied, are made in connection with your use of, or reliance upon, this information. This information is provided to you as the user entirely at your risk.

The Government of Canada or the BC Poultry Industry Biosecurity Committee, its directors, agents, employees, or contractors will not be liable for any claims, damages or losses of any kind whatsoever arising out of the use of, reliance upon, this information.

British Columbia On-Farm Poultry Biosecurity Program: Reference Guide

1st Edition

October 2006

ISBN 0-9738261-2-6

For more information contact:

British Columbia Poultry Association

BC On-Farm Poultry Biosecurity Program

Garth Bean, PAg
Delivery Coordinator
604-854-0222
garthbean@look.ca

Niels Holbek, PAg
Program Coordinator
250-334-6547
nholbek@telus.net

Ron Bertrand, PAg
Program Coordinator
604-308-6755
rbertrand@shaw.ca

Table of Contents

Acknowledgements	ii
Preface	v
Table of Contents	vii
Introduction	xi
1. Farm Access Standards	1-1
Farm Access Biosecurity Concerns	
1.1 Secure Barrier	1-2
1.1.1 Mandatory Standard #1	1-2
1.1.2 Interpretive Guidelines	1-2
1.1.3 Regulatory Requirements	1-2
1.1.4 Complying with Mandatory Standard	1-2
1.1.5 Implementing Enhanced Measures	1-4
1.2 Access Signage	1-6
1.2.1 Mandatory Standard #2	1-6
1.2.2 Interpretive Guidelines	1-6
1.2.3 Regulatory Requirements	1-6
1.2.4 Complying with Mandatory Standard	1-6
1.2.5 Implementing Enhanced Measures	1-7
1.3 Primary Access Surface	1-8
1.3.1 Mandatory Standard #3	1-8
1.3.2 Interpretive Guidelines	1-8
1.3.3 Regulatory Requirements	1-8
1.3.4 Complying with Mandatory Standard	1-8
1.3.5 Implementing Enhanced Measures	1-9
1.4 Cleaning and Decontamination Site	1-10
1.4.1 Mandatory Standard #4	1-10
1.4.2 Interpretive Guidelines	1-10
1.4.3 Regulatory Requirements	1-10
1.4.4 Complying with Mandatory Standard	1-10
1.4.5 Implementing Enhanced Measures	1-12
1.5 Access Maintenance	1-13
1.5.1 Mandatory Standard #5	1-13
1.5.2 Interpretive Guidelines	1-13
1.5.3 Regulatory Requirements	1-13
1.5.4 Complying with Mandatory Standard	1-13
1.5.5 Implementing Enhanced Measures	1-13

2. Barn Access Standards **2-1**

Barn Access Biosecurity Concerns

2.1	Locked Barn Entrance	2-2
2.1.1	Mandatory Standard #6	2-2
2.1.2	Interpretive Guidelines	2-2
2.1.3	Regulatory Requirements	2-2
2.1.4	Complying with Mandatory Standard	2-2
2.1.5	Implementing Enhanced Measures	2-2
2.2	Approved Signage	2-3
2.2.1	Mandatory Standard #7	2-3
2.2.2	Interpretive Guidelines	2-3
2.2.3	Regulatory Requirements	2-3
2.2.4	Complying with Mandatory Standard	2-3
2.2.5	Implementing Enhanced Measures	2-3
2.3	Anteroom	2-4
2.3.1	Mandatory Standard #8	2-4
2.3.2	Interpretive Guidelines	2-4
2.3.3	Regulatory Requirements	2-4
2.3.4	Complying with Mandatory Standard	2-5
2.3.5	Implementing Enhanced Measures	2-14
2.4	Anteroom Maintenance	2-15
2.4.1	Mandatory Standard #9	2-15
2.4.2	Interpretive Guidelines	2-15
2.4.3	Regulatory Requirements	2-15
2.4.4	Complying with Mandatory Standard	2-15
2.4.5	Implementing Enhanced Measures	2-16

3. Flock Health Management Standards **3-1**

Flock Health Management Biosecurity Concerns

3.1	Flock Health Records	3-2
3.1.1	Mandatory Standard #10	3-2
3.1.2	Interpretive Guidelines	3-2
3.1.3	Regulatory Requirements	3-2
3.1.4	Complying with Mandatory Standard	3-2
	Recognizing Sick Birds	3-3
	Production Records	3-3
	Checking the Flock for Illness or Mortality	3-4
	Response Strategies	3-5
	Diagnostic Submissions	3-6
	Addition of Birds into an Existing Flock	3-6
3.1.5	Implementing Enhanced Measures	3-6

3.2 Mortality Management	3-9
3.2.1 Mandatory Standard #11	3-9
3.2.2 Interpretive Guidelines	3-9
3.2.3 Regulatory Requirements	3-9
3.2.4 Complying with Mandatory Standard	3-9
Handling Mortalities	3-10
Mortality Disposal	3-11
Guidelines for approved on-farm methods of handling and disposal of avian mortalities	3-12
Burial	3-13
Composting	3-15
Incineration	3-17

4. Farm Management Standards **4-1**

Farm Management Biosecurity Concerns

4.1 Pest Control	4-2
4.1.1 Mandatory Standard #12	4-2
4.1.2 Interpretive Guidelines	4-2
4.1.3 Regulatory Requirements	4-2
4.1.4 Complying with Mandatory Standard	4-2
4.1.5 Implementing Enhanced Measures	4-3
4.2 Protection of Feed and Water from Contamination	4-4
4.2.1 Mandatory Standard #13	4-4
4.2.2 Interpretive Guidelines	4-4
4.2.3 Regulatory Requirements	4-4
4.2.4 Complying with Mandatory Standard	4-4
4.2.5 Implementing Enhanced Measures	4-5
4.3 Cleaning and Decontamination of Equipment	4-6
4.3.1 Mandatory Standard #14	4-6
4.3.2 Interpretive Guidelines	4-6
4.3.3 Regulatory Requirements	4-6
4.3.4 Complying with Mandatory Standard	4-6
4.3.5 Implementing Enhanced Measures	4-7
4.4 Manure Management	4-8
4.4.1 Mandatory Standard #15	4-8
4.4.2 Interpretive Guidelines	4-8
4.4.3 Regulatory Requirements	4-8
4.4.4 Complying with Mandatory Standard	4-8
4.4.5 Implementing Enhanced Measures	4-8
4.5 On-farm Biosecurity Training for Producers and Farm Employees	4-10
4.5.1 Mandatory Standard #16	4-10
4.5.2 Interpretive Guidelines	4-10
4.5.3 Regulatory Requirements	4-10
4.5.4 Complying with Mandatory Standard	4-10
4.5.5 Implementing Enhanced Measures	4-11

4.6	Standard Operating Procedures	4-12
4.6.1	Mandatory Standard #17	4-12
4.6.2	Interpretive Guidelines	4-12
4.6.3	Regulatory Requirements	4-12
4.6.4	Complying with Mandatory Standard	4-12
4.6.5	Implementing Enhanced Measures	4-13
4.7	Visitor and Activity Log Book	4-14
4.7.1	Mandatory Standard #18	4-14
4.7.2	Interpretive Guidelines	4-14
4.7.3	Regulatory Requirements	4-14
4.7.4	Complying with Mandatory Standard	4-14
4.7.5	Implementing Enhanced Measures	4-15

Appendices

Appendix 1	Log Book Examples	1-1
Appendix 2	Farm Entry Protocols	2-1
Appendix 3	Cleaning and Disinfection Procedures	3-1
Appendix 4	Anteroom Procedures – Footbaths and Hand Sanitizing	4-1
Appendix 5	Standard Operating Procedures	5-1
Appendix 6	Self Quarantine Procedures	6-1
Appendix 7	Mortality and Production Record Forms	7-1
Appendix 8	Diagnostic Laboratory Submission Procedures	8-1
Appendix 9	A Procedure for Spiking Males into Broiler Breeder Flocks	9-1
Appendix 10	Pest Control	10-1
Appendix 11	Management Procedures When Handling Manure	11-1
Appendix 12	Publications and Websites	12-1
Appendix 13	Legislation and Enforcement	13-1
Appendix 14	Glossary	14-1

Introduction

If you refer to a dictionary, you will not find a definition of the word *biosecurity*. The word *security*, however, is defined as “freedom from danger”. So, what we have done is to coin a new word that can be defined as “freedom from danger represented by biological agents”. The biological agents that present “danger” to the poultry industry are, of course, those microscopic organisms that include viruses, bacteria, and parasites. The viruses, bacteria, and parasites that we are concerned with are pathogenic organisms that require a host in which to grow and reproduce, particularly those that require the avian species as a host. The BC Poultry Biosecurity Program is a series of protocols that are designed to reduce the “danger” of biological agents to poultry flocks under our care.

When a bird is infected with a pathogenic organism, there may or may not be obvious signs of clinical disease. Nevertheless, that organism is reproduced in the bird then shed in greater numbers from the infected bird into the environment through body excretions, including feces, urates from the kidneys, or moisture droplets from the respiratory system. The organisms contained in these excretions contaminate the materials in the surrounding environment, which then carry the infection to the next bird. If the amount of the pathogen is high enough to overcome a susceptible bird’s immune system, the bird becomes infected and the cycle continues. As the pathogenic organism passes through more and more birds, its numbers in the environment multiply rapidly.

Because pathogenic organisms are microscopic, they are not visible to the naked eye. Yet they can be found in large numbers in dust, in water droplets suspended in the air, and in visible fecal contamination. Enough pathogenic organisms to be an infective dose can be contained in an invisible amount of contaminated material. Such a small amount of contaminated material can be on equipment, clothing, footwear, or, even hands. By this means, the disease can be carried from one flock to another.

Humans face a common example of this principle of disease transfer daily. While we may assume that our hands are clean because we cannot see any evidence of contamination, they are, in fact, teeming with bacteria and viruses. Among those organisms can be the cold virus, picked up by simply shaking a person’s hand, opening the door to the pharmacy, or handling a shopping cart. This is the most likely way in which we pick up that virus. The virus is then transferred to our respiratory tract as we put our hands to our face or eat our food. We then spread it to others through the droplets from our respiratory tract as we sneeze or cough and, of course then shake hands with someone, or go to the pharmacy for cold medication, or go shopping. If we were to design biosecurity standards to prevent ourselves from catching or spreading a cold, they would be:

1. *Frequently wash your hands*
2. *Keep your hands away from your face*
3. *Use a tissue when sneezing or coughing*

Biosecurity is not quite as simple when applied to poultry operations, but the fundamental principles are the same. In general we are trying to prevent or, at the very least, minimize the number of organisms entering and leaving the farm. Because we know that pathogenic organisms can leave and enter the farm carried on outer clothing, footwear, and equipment, to minimize this risk we set up two levels of defense. The first step is to define a secured area and implement procedures that prevent contamination from entering that secured area. Access to the secure area is limited to only those people and that equipment that is necessary. When it is necessary, controlled entry procedures are designed to prevent or minimize organisms from entering the area with visitors, equipment, and vehicles. This is achieved by removing any contaminated material by washing and, if necessary, disinfection.

Because we cannot control the environmental factors such as wild birds, rodents, and dust that may contaminate the secured area, we set up a second barrier, which is the barn or enclosure itself and referred to as the Restricted Access Zone. Entry to the barn is restricted to only those people that are absolutely necessary, and

entry is controlled through the anteroom to the barn. While passing through the anteroom, we prevent contamination from entering the barn by using footbaths, removing outerwear and putting on clean or barn-only outerwear, putting on clean or barn-only footwear, and washing hands. In addition all equipment entering the barn is cleaned and disinfected prior to entry.

Farm operations are designed to minimize the load of organisms in the flock's environment and to keep the flock healthy. Records are designed to allow the producer to recognize quickly when problems may be occurring. Ultimately, if a problem does occur on the farm, good records will allow for the tracing of all movement in an attempt to define the source of the infection and to identify other potentially infected flocks so measures can be taken to limit the spread of the disease.

The protocols contained in this group of biosecurity standards are based on scientifically sound, tried principles that reduce the risk of introduction of a disease into a production unit, regardless of species. The effort and cost of the implementation and maintenance of this program will protect the health of each flock, the health of the industry, and, indirectly, the health of British Columbians.

USE OF THIS DOCUMENT

The **Mandatory Standards** are collected under four major sections or chapters that group them according to specific elements of biosecurity. Each chapter of the document describes particular control point areas that must be addressed to achieve good biosecurity.

Chapter 1 covers “Farm Access Standards”, including methods for excluding unnecessary visitors and methods by which necessary visitors can minimize the chances of carrying disease-causing organisms onto or off of the farm.

Chapter 2 addresses the next control point for the exclusion of diseases, “Barn Access Standards”. The elements covered for this next level of control include methods to discourage entry into the barn and procedures allowing entry that, when followed, will significantly reduce the risk of disease entry into or exit from the flock.

Chapter 3 describes “Flock Health Management Standards”. Mortality within a flock of birds represents both a potential disease risk to other birds on the farm and to other farms in the area as well as a good indicator of the health of the flock. For that reason, these standards describe methods by which information about flock health can be gathered, allowing an early alert to possible serious disease problems, and methods for handling dead birds to minimize their contribution to disease spread.

Chapter 4 includes “Farm Management Standards”, addressing the management practices that will improve overall biosecurity. Some of these practices include internal biosecurity issues, such as rodent control and cleaning and disinfection procedures. Other practices described cover issues that will help to contain and track a disease, should an outbreak occur.

Sub Headings

Within each section describing individual Mandatory Standards, there are five subsections giving information on understanding, implementing, and improving the conditions of the standard. These subsections are titled and colour-coded as follows:

x.y.1 Mandatory Standard #

This section presents the mandatory standard.

x.y.2 Interpretive Guidelines

Interpretive guidelines are points that help the reader to understand the rationale of and elements that contribute to the spirit of the Mandatory Standard.

x.y.3 Regulatory Requirements

There are many regulatory issues, legislated municipally, provincially, and federally that will affect the manner in which some Standards may be implemented. This section outlines some of the legislation that may be relevant.

x.y.4 Complying with Mandatory Standard

Procedures and examples are given in this section that will assist the reader in putting practices into effect that will help ensure compliance with the Standards.

x.y.5 Implementing Enhanced Measures

The Mandatory Standards cover the most basic practices required to achieve reasonable biosecurity. Practices that go beyond the basic Standards are strongly encouraged. This section describes some areas that would be regarded as enhancements to the Standard.