

## Protocol #3

### Protocol for On-Farm, Out-of-Barn Biological Heat Treatment of Material Potentially Infected with Avian Influenza

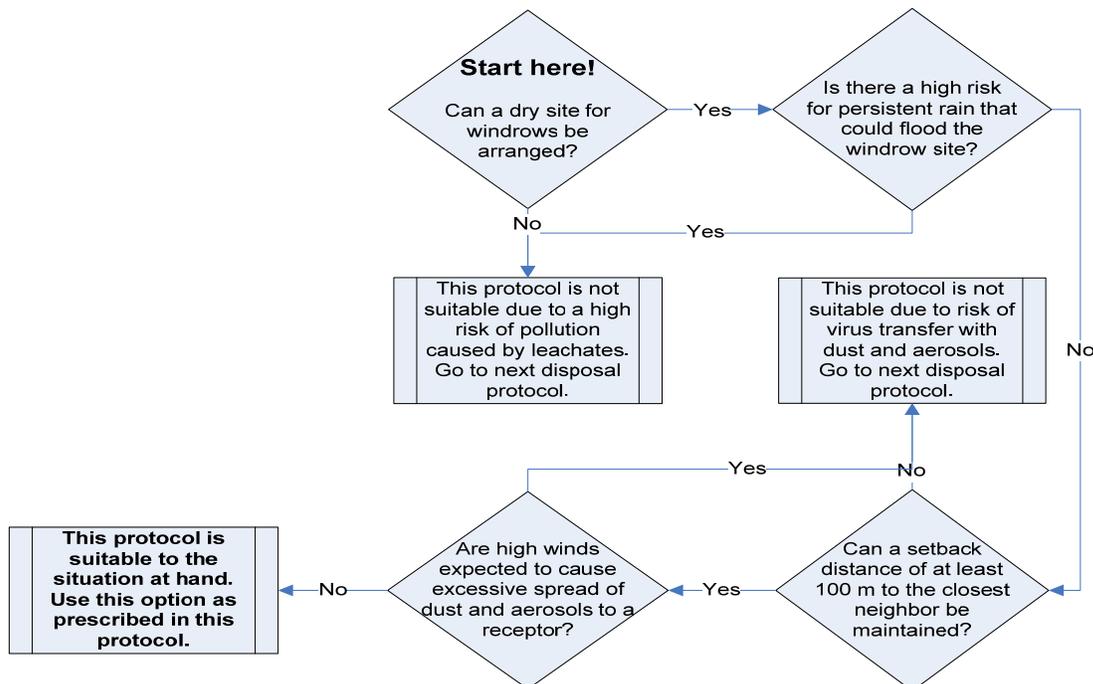
Edition: January 28, 2010

#### Summary

This protocol covers out-of-barn **Biological Heat Treatment (BHT)** as a means to inactivate avian influenza virus in poultry carcasses, poultry products, eggs, feed and poultry litter. It also describes the provincial regulatory framework for subsequent composting and land application of BHT treated materials. Furthermore, this protocol outlines necessary precautions regarding personal health and safety for all workers involved with disposal activities as well as biosecurity measures that will have to be implemented in order to prevent further spread of the virus. In addition, regulatory requirements, ownership of the infected material and associated responsibilities with respect to workers safety, biosecurity and lawful disposal are discussed in various sections of the protocol.

The term disposal is often used throughout this protocol. For the purpose of this protocol the concept of disposal includes the whole process from treatment of potentially infected material for inactivation of the virus to lawful final land application of the treated material.

#### Decision tree to determine if this protocol is suitable to the situation at hand



## Table of Contents

SUMMARY .....	1
DECISION TREE TO DETERMINE IF THIS PROTOCOL IS SUITABLE TO THE SITUATION AT HAND.....	1
<b>TABLE OF CONTENTS.....</b>	<b>2</b>
<b>1.0 GENERAL.....</b>	<b>3</b>
1.1 BACKGROUND.....	3
1.2 WASTE TO BE TREATED.....	3
1.3 REGULATORY REQUIREMENTS.....	3
1.4 CONSULTATION .....	4
1.5 DOCUMENTATION .....	4
<b>2.0 OCCUPATIONAL HEALTH, SAFETY AND PERSONAL BIOSECURITY.....</b>	<b>5</b>
2.1 HAND HYGIENE.....	5
2.2 SHOWERING.....	5
2.3 PERSONAL PROTECTIVE EQUIPMENT .....	5
2.4 VACCINE/ PROPHYLACTIC MEDICATION.....	5
2.5 SELF-MONITORING.....	6
2.6 SAFETY .....	6
<b>3.0 BIOCONTAINMENT.....</b>	<b>6</b>
<b>4.0 ACCIDENTAL RELEASE.....</b>	<b>6</b>
<b>5.0 EQUIPMENT AND SUPPLIES .....</b>	<b>7</b>
<b>6.0 PROCEDURES .....</b>	<b>8</b>
6.1 SITE SELECTION .....	8
6.2 MIXING RATIOS .....	9
6.3 OUT-OF-BARN BHT.....	10
<b>7.0 SITE SELECTION, END USE AND OWNERSHIP OF COMPOSTED MATERIAL.....</b>	<b>15</b>
7.1 EFFECT OF THE SITE SELECTION ON THE END USE OF THE COMPOSTED MATERIAL.....	15
7.2 OWNERSHIP AND RESPONSIBILITIES .....	16
<b>8.0 SITE SECURITY.....</b>	<b>16</b>
<b>9.0 SIGNATURES.....</b>	<b>17</b>

**Appendix A – TEMPLATE for Sec 53 Exemption Application**

**Appendix B – Time-Temperature Requirements for BHT**

## **1.0 General**

### **1.1 Background**

One of the major objectives of the program to contain the spread of avian influenza is to eliminate the potential for the agent to continue infecting susceptible animals through prompt and effective treatment and disposal of contaminated material.

The term "biological heat treatment" (BHT) is often used in this document. It refers to the inactivation of specific pathogens by exposure to elevated temperatures that are achieved during the microbiological decomposition of organic matter in the presence of oxygen, a process commonly known as composting. This protocol differentiates between BHT and general composting. "BHT" is used to describe the pathogen inactivation phase of this disposal option while "composting" is used to describe the more thorough decomposition that the material has to go through after the BHT in order to meet the requirements for appropriate land application.

BHT is considered to be a safe, cost effective approach to inactivate the avian influenza virus and render it incapable of causing infection. On some farms, the type of operation, physical constraints of the buildings and lack of space may prevent the more contained in-barn stage of BHT. Under these constraints, a separate location outside, near affected buildings may be considered for the whole process. Under these conditions, BHT is essentially carried out the same way as it would have been in the barn. However, since materials potentially infected with avian influenza are now handled outside, health and environmental concerns must receive additional attention.

This protocol addresses the use of out-of-barn BHT in British Columbia and the occupational health and safety requirements, as well as environmental considerations associated with the process. A number of environmental and public health concerns relate to the activities described in this protocol. Therefore, these activities must be carried out as described in this protocol for out-of-barn BHT to be permitted in British Columbia.

### **1.2 Waste to be Treated**

Waste that is to be treated according to this protocol includes poultry carcasses, poultry products, eggs, feed and poultry litter (manure).

### **1.3 Regulatory Requirements**

Avian influenza infected waste (as defined under section 1.2) is a Class 6 good as

defined in the federal Transportation of Dangerous Goods Act and will therefore be subject to the Hazardous Waste Regulation under the provincial *Environmental Management Act*.

Section 53 of the Hazardous Waste Regulation allows for a provision under which an exemption can be granted for hazardous wastes that do not pose a threat to human health or the environment when handled in accordance with methods/protocols approved by the Director. Therefore, a site-specific and protocol-specific exemption from the Hazardous Waste classification issued by the BC Ministry of Environment (MOE) must be acquired prior to implementation of the activities prescribed in this protocol.

MOE's participation in the development of this protocol will ensure that the protocols meet the requirements of the Hazardous Waste Regulation. The issuance of an exemption makes it legally binding to follow the protocol on which the specific exemption is based.

A template exemption application is provided in Appendix A.

#### **1.4 Consultation**

These protocols were developed in consultation with and accepted by the following parties:

- Canadian Food Inspection Agency (CFIA) – Paul Littlewood
- BC Ministry of Environment – Jennifer McGuire, Kevin Larsen, Margaret Crowley
- BC Ministry of Healthy Living and Sport – Dr. Perry Kendall

#### **1.5 Documentation**

Records must be kept of all information required in application for exemption to the Hazardous Waste Regulation Section 53; including

- i) type and volume of materials composted
- ii) volume ratio of infected material to carbon source
- iii) when the compost pile was established
- iv) type of base surface
- v) estimated slope of composting site (for out-of-barn composting)
- vi) distance from any well or waterway
- vii) rudimentary site sketch
- viii) legal address of site

and all requirements and steps used in the protocol; including plans for containment and accidental release.

These records should be kept by the Disposal Group Supervisor as identified in the Foreign Animal Disease Emergency Support Plan.

## **2.0 Occupational Health, Safety and Personal Biosecurity**

The following guidelines follow general CFIA occupational health and safety (OHS) guidelines.

### **2.1 Hand Hygiene**

Hand hygiene must be performed before putting on and after removal of personal protective equipment (PPE). Hand hygiene is accomplished by washing the hands thoroughly with soap and water. An alcohol based hand sanitizer may be used if hands are not visibly soiled.

### **2.2 Showering**

Persons involved in depopulation and disposal of infected poultry and cleaning / disinfection of infected premises are at increased risk of being infected due to prolonged, close contact with dead birds, dust and contaminated surfaces. In addition to hand hygiene, they are required to remove the clothing worn during the operation, shower thoroughly with soap and water and put on clean clothes before leaving the biosecure area and the infected premises.

### **2.3 Personal Protective Equipment**

All persons participating in the culling of poultry and working in a highly contaminated environment are required to wear the following personal protective equipment (PPE):

- Disposable fit-tested half-face N-95 or better respirator (For example the North 7700 Series Half mask with multi-contaminant plus P100 cartridge.)
- Disposable face shield or goggles
- Gloves that are impervious to water and resistant to puncture and tear
- Coveralls that are impervious to water
- Rubber or polyurethane boots
- Disposable head or hair cover

*(Suitable substitutes for the equipment proposed above are acceptable provided that an approval has been received from the WorkSafeBC and Health Canada)*

### **2.4 Vaccine/ Prophylactic Medication**

All persons participating in the culling of poultry and working in a highly contaminated environment are required to have received the current human influenza vaccine and to take any prophylactic medication as recommended by public health officials. All persons who have been prescribed medication, or in cases where a doctor-patient relationship has been invoked, must be made available for monitoring.

## **2.5 Self-Monitoring**

All persons participating in the culling of poultry and working in a highly contaminated environment must monitor themselves for the development of fever, respiratory symptoms and /or conjunctivitis (i.e., eye infections) for one week after last exposure to active avian influenza virus. Individuals who become ill must promptly seek medical care. They are furthermore required to inform the physician's office or clinic and the local public health unit, prior to their arrival that they have been exposed to avian influenza.

Potentially exposed CFIA staff or persons contracted by the CFIA are required to adhere to a CFIA Biosecurity Protocol, and must not to have contact with non-infected avian for 72 hours following last exposure.

## **2.6 Safety**

The CFIA lead hand on each job site is responsible for establishment and monitoring of safe working conditions for laborers, equipment operators and other persons under contract with CFIA.

The owner or operator of the infected premises is responsible for establishing and monitoring of safe working conditions for any additional workers with whom a contractual arrangement is in force.

## **3.0 Biocontainment**

The CFIA lead hand on each infected premises is responsible for ensuring that all personnel on the quarantined premises are fully trained with respect to biosecurity. The lead hand is also responsible for establishing and monitoring biocontainment measures for work being conducted at the site. Biocontainment measures include, among other procedures, the cleaning and disinfection of equipment being removed from a site.

## **4.0 Accidental Release**

Any spill of material that may still contain active virus (as per CFIA definition), outside of the quarantined zone must immediately be reported to Provincial Emergency Program (PEP) by phoning 1-800-663-3456. Trained and equipped CFIA staff will remove the spilled materials. The area in which the spill occurred will be decontaminated by CFIA with Virkon solution. Operational activities that potentially could result in accidental release or cross contamination are to be monitored and appropriately altered or suspended when a release is imminent. These include:

- Vehicle and unregulated foot traffic
- Winds, >10 km/h while handling dusty litter
- Spillage during transfer

## 5.0 Equipment and Supplies

Equipment and supplies required for a crew to conduct out-of-barn BHT (initial phase of composting) are as follows:

- Two Bobcat Loaders (large)
- Two small tractors with scrapers
- One large lawn tractor with scraper to operate on upper floor of two storey barns
- Shovels and scrapers (snow shovels or equivalent)
- Pressure Washer for cleaning equipment, and supply hose
- Source of substantial quantity of water such as a large water tanker, large water bladder (fire service) or reservoir
- Pump and fire hose for delivery of water to the compost location
- Vertical grinder or tub-grinder for thorough mixing of carcasses, litter and bulking agent inside the barn
- All biosecurity gear and support including high volume disinfectant delivery for equipment and decontamination shower units
- Portable toilets
- Plastic ground liner (6 mil) if no other impermeable surface such as a concrete slab exists on the premise
- Air permeable, yet water shedding cover liner such as the materials used for construction wrap to protect buildings from rain and wind
- PVC pipe for aeration
- Fans and fittings in case active aeration is needed
- Tires and rope
- Wood shavings to act as a base pad and cover layer as well as a carbon source to meet a target C/N ratio of 25-30. The needed volume of wood shavings can be calculated from the following equation:

\_\_\_\_\_ kg of culled birds \* 0.0023 = \_\_\_\_\_ m<sup>3</sup> of wood shavings **or**

\_\_\_\_\_ lbs of culled birds \* 0.0014 = \_\_\_\_\_ yd<sup>3</sup> of wood shavings

Some of the wood shavings (approximately 1/3) can be exchanged for poultry litter if it is accessible on the infected premise.

The above given equation results in an approximate volume ratio of culled birds to carbon source of 1:1.8 assuming a bulk density of 800 kg/m<sup>3</sup> for culled birds.

## **6.0 Procedures**

The operator of the infected poultry operation should be consulted concerning the composting process while the facilities are being evaluated in order to provide input on where to locate the out-of-barn BHT site. The operator and/or assistants should also be handed information provided by the responsible health authority concerning risks to human health from avian influenza. The local Health Authority and the CFIA will co-ordinate provision of personal protective equipment for the operator and associated staff when assisting with disposal and cleaning & disinfection procedures.

The assistance of the operators is beneficial as they are familiar with their facilities and the manner in which they are normally run. They are also the most skilled at running their own equipment and can make the procedure more timely and efficient.

### **6.1 Site Selection**

For specific situations where in-barn BHT is not feasible, out-of-barn BHT can be performed under this protocol. It is important to find a site for out-of-barn BHT that is acceptable from an environmental and public health perspective.

The site selected to conduct the out-of-barn BHT must be on high ground that is dry enough to be trafficable for heavy transport equipment and sufficiently distanced from the public not to cause health concerns related to avian influenza virus transmitted by dust. A minimum set back distance of 100 m to the closest neighbor residence should be maintained and the site has to be at least 15 m from a watercourse and at least 30 m from a domestic water source. BHT outside of the barn must be carried out on an impermeable surface and the site should be situated on a property with sufficient land for application of the composted material in accordance with the Agricultural Waste Control Regulation. In addition, the site should not compromise biosecurity measures upon resumption of poultry operation, i.e. it should be sufficiently removed from the regular flow of traffic to reduce the risk of contamination. The site should also be sufficiently set back from all neighbouring premises and be maintained to ensure that vectors are controlled.

## 6.2 Mixing Ratios

If there is access to poultry litter in the barn a reasonable mix of culled birds, litter and wood shavings can be achieved by following the guide in the tables below. Table 1a gives mixing ratios in metric units and table 1b repeats the same mixing ratios in imperial units.

Volumes of carbon source / 1000 birds, based on the calculation under section 5.0								
Average bird weight (kg)	0.5	1	1.5	2	2.5	3	3.5	4
Wood shavings (m <sup>3</sup> )	0.8	1.5	2.3	3.0	3.8	4.6	5.3	6.1
Litter (m <sup>3</sup> )	0.4	0.8	1.1	1.5	1.9	2.3	2.7	3.0
Average bird weight (kg)	4.5	5	5.5	6	6.5	7	7.5	8
Wood shavings (m <sup>3</sup> )	6.8	7.6	8.3	9.1	9.9	10.6	11.4	12.1
Litter (m <sup>3</sup> )	3.4	3.8	4.2	4.6	4.9	5.3	5.7	6.1

Table 1a. Metric table of approximate volume of **carbon source** needed per **1000 birds**, based on the equation and litter substitution suggested in section 5.0.

Volumes of carbon source / 1000 birds, based on the calculation under section 5.0								
Average bird weight (lbs)	1	2	3	4	5	6	7	8
Wood shavings (yd <sup>3</sup> )	0.9	1.8	2.7	3.6	4.5	5.4	6.3	7.2
Litter (yd <sup>3</sup> )	0.5	0.9	1.4	1.8	2.3	2.7	3.2	3.6
Average bird weight (lbs)	9	10	11	12	13	14	15	16
Wood shavings (yd <sup>3</sup> )	8.1	9.0	9.9	10.9	11.8	12.7	13.6	14.5
Litter (yd <sup>3</sup> )	4.1	4.5	5.0	5.4	5.9	6.3	6.8	7.2

Table 1b. Imperial table of approximate volume of **carbon source** needed per **1,000 birds**, based on the equation and litter substitution suggested in section 5.0.

If poultry litter is used as part of the carbon source it has to be mixed in thoroughly with the wood shavings so that compacted litter is broken up.

Desired moisture content of the mixed material is 50-60% on a mass basis. The mix has appropriate moisture content if it is able to hold its shape after being squeezed by hand, and water does not drip out on squeezing.

It is advisable to limit the amount of wood shaving brought on to the farm to not exceed what is actually needed for the process as the Agricultural Waste Control Regulation does not allow for land application of excess wood shavings.

### **6.3 Out-of-Barn BHT**

The following procedure should be followed if no BHT has occurred in barn prior to bringing infected material out of the barn. Out-of-barn BHT should be carried out on a dry site, conforming to the conditions outlined in section 6.1 and with consideration of the preferences discussed in section 7.1. The following procedure should be implemented:

1. The material should be removed to a suitable location for the out-of-barn BHT. However, proper base pads have to be constructed before the material is brought out of the barn.
2. Calculate the size of the footprint required to accommodate the volume of material from the barn(s), including all wood shavings and litter that is to be incorporated as the carbon source. This information is to be used when choosing the site for the out-of-barn BHT as it will determine the size of the needed area. When calculating the footprint of the windrows, limit the windrow dimensions to 2 m (6.6 feet) in height with a lower base width of 4m (13.1 feet) and an upper width of 1.5 m (4.9 feet). The length of the windrows can then be adjusted to accommodate all the material rather than increasing the vertical and lateral dimensions.
3. The site selected to conduct the out-of-barn BHT should preferably have the same owner as the poultry operation and have sufficient land on the property for application of the composted material. The site must be on high ground, at least 15 m from a water course and at least 30 m away from any water source for domestic use. If possible, establish the out-of-barn BHT on an impermeable surface. The site should also be conveniently-located for construction of windrow(s), i.e., as close as possible to the barns and on land that is trafficable for heavy machinery.
4. If there is access to an impermeable surface, such as a concrete pad or an asphalt surface, then go directly to item 7.
5. If no impermeable surface is accessible, a temporary impermeable area has to be constructed on a high, dry area close to the barn, perhaps in a nearby field.
6. A plastic liner (minimum 0.152 mm (6 mil)) is to be placed on the field. The plastic liner should be sized to fit the footprint of each windrow, but does not have to cover the area in between windrows.
7. A 30 cm (11.8 inch) thick pad of chipped wood, such as hogfuel, is to be placed on the impermeable layer, i.e. the plastic sheet, the concrete pad or the asphalt surface.

8. Place three plastic (PVC) pipes lengthwise on top of the hogfuel base pad to provide for aeration. For windrows that are shorter than 36.6 m (120 feet) a 7.6 cm (3 inch) pipe is sufficient. For longer windrows, up to 91.4 m (300 feet) the diameter of the pipe has to be increased to 12.7 cm (5 inch). The pipes should be perforated by 0.6 cm (1/4 inch) holes, normally one hole every 30.5 cm (12 inch). The total cross sectional area of the sum of the holes should not be greater than 2/3 of the pipe diameter. The pipes will allow for passive aeration but if high enough temperatures are not achieved, fans can be hooked up to the pipes for active aeration.
9. Dead birds, bulking agent and litter must be thoroughly mixed before being brought out to the pad. If at all possible, the mixing process should be done inside the barn or in a contained temporary enclosure as it is bound to create dust and aerosols. For example a vertical grinder can be used. The grinder should be loaded with the right proportion of materials (see section 6.2). A conveyer can be placed at the out-flow side of the beaters to transport the material directly up into a dump truck or a bucket in which the material is transported out to the prepared pads. Be extra cautious and take all possible actions to mitigate dust and aerosol formation during these actions.
10. The material from the barn can now be dumped on top of the hogfuel base pad. Leave some margin at the edges of the base pad free of compost mix to prevent overflow.
11. The material is then to be covered with an air-permeable, water-shedding liner, such as structural wrap material normally used for wind and rain protection of buildings. The liner should be draped over the entire pile with adequate reserve for tucking the liner in under the bottom plastic liner and the hogfuel. The “tuck in” should be secured occasionally with tires bound together with a rope that is hung over the pile. This will also secure the liner for strong winds. See figure 1.
12. To provide insulation, reduce emissions and suppress odours, a wood chip, sawdust or shavings blanket, approximately 30 cm (11.8 inch) thick, is to be placed over the air-permeable, water-shedding liner. See figure 1.
13. A representative from CFIA will monitor the temperature development in the windrow. When the minimum time-temperature requirements for the first stage of BHT, as stipulated in Appendix B have been achieved, CFIA will consider whether the avian influenza virus is inactivated (killed) and do one of the following:
  - a) Deem the BHT to be complete. If the BHT is so deemed, it is not necessary to carry out a second stage BHT process. Items 14. through 17. may be skipped; the treated material will no longer be considered

hazardous. The treated material should be further composted until it is fully degraded and fit for land application. The composting must be carried out in compliance with the Agricultural Waste Control Regulation, and the following additional requirements for composting must also be met:

- Composting must remain on-site and built on an impermeable surface.
- Composting pile(s) must not be built within 15 m of any watercourse and 30 m of any source of water used for domestic purposes.
- A 30 cm soil berm must be constructed between the pile(s) and any existing drainage ditches.
- Composting pile(s) should be covered with a properly secured waterproof material. (For example: 4 x 4 posts that roll under to avoid standing water, and tires attached by ropes over the pile(s)).
- A 30 cm thick layer of shavings should be applied as a biofilter on the composting pile(s) either over or under the waterproof material, as appropriate.
- A qualified professional<sup>1</sup> must determine the width of the pile(s), the size and number of pipe(s) for aeration, maintenance and temperature monitoring of the pile(s) (e.g., frequency, etc.).

or

- b) Deem BHT incomplete. CFIA will authorize the piles to be turned over. A minimum of one turn is required and the turn procedure must be monitored by CFIA. Follow items 14. through 17.

Note: Appendix B is a live document that is updated as science is progressing. Please ensure to check with CFIA for the latest version before making decisions.

14. The turn can be achieved with a front end loader tilting the material over to an adjacent base pad, or with an excavator riding on top of the windrow scooping up material and putting it back as it travels backwards.
15. After the windrows have been mixed the air-permeable, water-shedding liner should be replaced according to step 11 including an odour suppressing layer

---

<sup>1</sup> “**qualified professional**”, in relation to a duty or function under this protocol, means an individual who (a) is registered in British Columbia with a professional organization, is acting under that organization’s code of ethics, and is subject to disciplinary action by that organization, and (b) through suitable education, experience, accreditation and knowledge, may reasonably be relied on to provide advice within his or her area of expertise, which area of expertise is applicable to the duty or function.

of woody material, as described in step 12. The aeration pipes do not necessarily have to be in place after the turn, but if the mixing is done with care it is quite possible to leave them in.

16. A representative from CFIA will again monitor the temperature development in the windrow. When the minimum time-temperature requirements for the second stage BHT, as stipulated in Appendix B have been achieved, CFIA will consider the avian influenza virus to be inactivated and therefore deem the second stage of BHT to be completed.
17. After the completion of the second stage of BHT, the material should be further composted until it is fully degraded and fit for land application. The composting can be done in windrows as long as it is carried out in compliance with the Agricultural Waste Control Regulation.

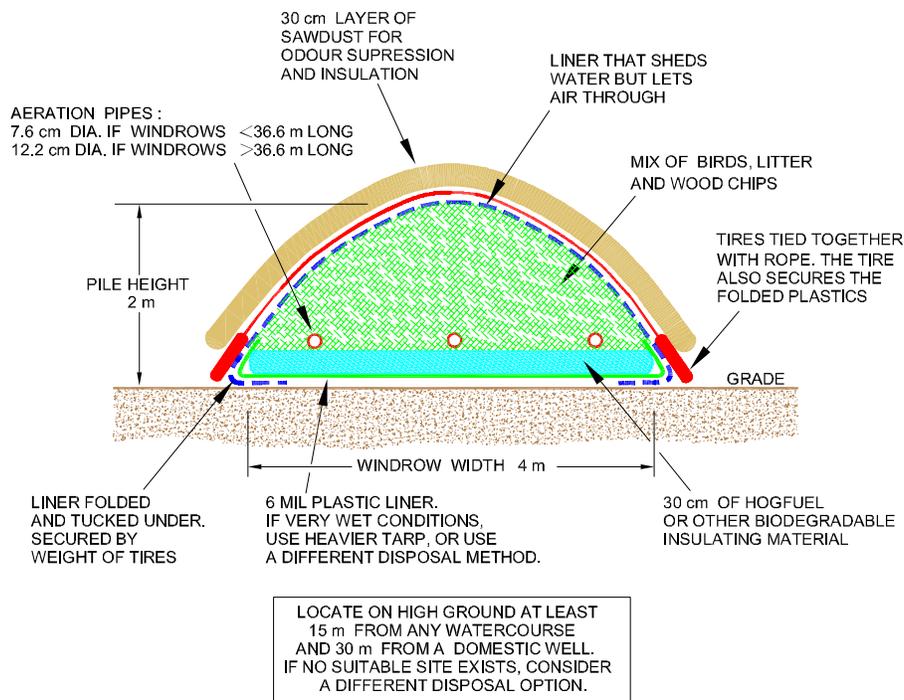


Figure 1. Descriptive cross sectional representation of a windrow for the out-of-barn stage of BHT. Conversions to imperial units can be found in the text of this section.

As an alternative to the windrow construction described in figure 1, an enclosed windrow base can be constructed using concrete highway dividers, or no-posts according to figure 2. The construction described in figure 2 is based on CFIA methodology from the 2004 avian influenza outbreak in the Fraser Valley, BC, and was at the time regarded as a functioning, workable methodology. However, in the interest of efficient composting, minimized cost and minimized time for virus inactivation the first alternative as described in the text in the numbered schedule of section 6.4 and figure 1 is recommended. Table 2 summarizes the pros and cons related to both alternatives. A problem with the method described in figure 2 that relates specifically to out-of-barn BHT is that the methodology does not readily allow for active aeration by connecting fans to the aeration pipes. Active aeration will likely be necessary in the case of out-of-barn BHT to ensure that proper temperatures for virus inactivation are achieved.

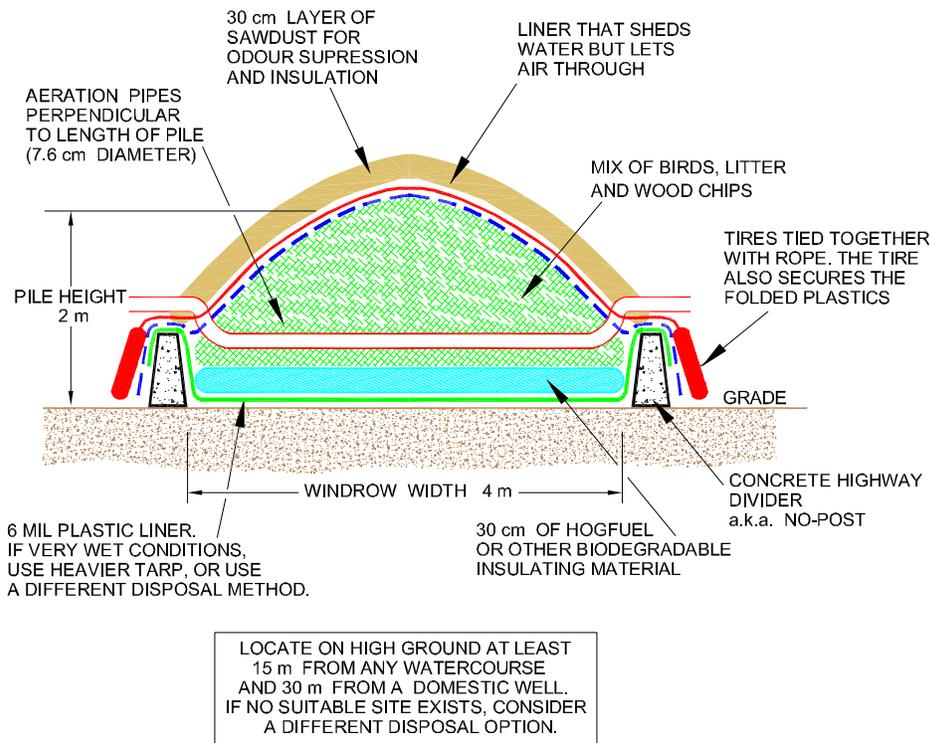


Figure 2. Descriptive cross sectional representation of an alternative windrow construction for the out-of-barn stage of BHT.

Windrow construction as described in <u>figure 1.</u> (without concrete highway dividers)	Windrow construction as described in <u>figure 2.</u> (with concrete highway dividers)
Pros	Pros
Better aeration Less water logged base Contains seepage Excludes rain Lower cost Allows for active aeration Less time consuming Easier to mix	More lateral containment Ridged lateral support Contains seepage Excludes rain
Cons	Cons
Less lateral containment No lateral support	Worse aeration More water logged base Does not readily allow for active aeration Higher cost More time consuming More difficult to mix

Table 2. Pros and cons for the two windrow construction methodologies described in figure 1 and figure 2.

## 7.0 Site Selection, End Use and Ownership of Composted Material

### 7.1 Effect of the Site Selection on the End Use of the Composted Material

With regards to final use and land application, the order of preference in terms of site selection is the following:

1. It is preferred that the BHT-treated and subsequently composted material is applied to land belonging to, and connected to the infected premise. Land application has to be done in accordance with the Agricultural Waste Control Regulation.
2. The second best option is to apply the material to land disconnected from the infected premise and/or owned by another land owner. Again, this can be done under the framework of the Agricultural Waste Control Regulation.
3. The third and least preferred option that falls under the Agricultural Waste Control Regulation is to move the material to a different farm for the post-BHT composting. In this case, the material must be land applied on the farm where it is being composted.
4. A different regulation, the Organic Matter Recycling Regulation (OMRR) will come into effect if the material for some reason absolutely has to be composted on a different site that does not have enough landbase for appropriate land application. OMRR allows for third party land application of material that has been composted to class A standard. If class A can not be achieved or proved through proper monitoring and registration, a land application plan for a class

B compost has to be established and approved by the BC Ministry of Environment before third party land application. (See OMRR for details on class A and B compost.)

## 7.2 Ownership and Responsibilities

- As long as the premise is subject to CFIA control measures, CFIA is responsible for managing wastes as identified in section 1.2 and for ensuring that no leachate problems occur from out-of-barn windrows and other areas affected by BHT operations. If CFIA discovers potential leachate problems it should be immediately reported to the BC Ministry of Environment. Until the control measures are lifted CFIA is responsible to address any leachate problems with guidance from the BC Ministry of Environment. When the control measures are lifted the responsibility for identifying and addressing potential leachate problems falls on the owner of the site where the material is being composted.
- It is the responsibility of the owner/operator of the farm where the BHT-treated and composted material originated to ensure, ahead of time, that the intended end use of composted materials is approved. An alternative disposal protocol should be used if no approved end use of the BHT-treated and fully composted material can be identified, e.g., if the conditions 1 – 4 under section 7.1 **cannot** be met.
- If the BHT-treated material is being composted at a different farm than where it originated, the owner of the farm where the material is being composted bears the responsibility. This responsibility includes composting and land spreading in accordance with the Agricultural Waste Control Regulation and lawful disposal of plastics, ropes and tires used during the process.
- The Organic Matter Recycling Regulation (OMRR) applies if the BHT-treated material is being composted at a site which is not a farm, or on a farm which is not the farm where the material originated **and** that does not have enough land base for appropriate land application. In this case, the owner of the site where the material is being composted bears the responsibility to comply with OMRR regarding composting standards, environmental protection and land application.

## 8.0 Site Security

- Vector attraction reduction may be required on the site, specifically netting over the compost windrow covers and Ag-Bag pods may be required to reduce “attack” on bags by species such as crows.
- Site manager must monitor cover materials to ensure integrity of materials and security of the site.
- Fencing is recommended around the perimeter of the site to exclude large animals (dogs/coyotes) and maintain biosecurity of the site.

**Protocol #3**

**Protocol for On-Farm, Out-of-Barn Biological Heat Treatment of Material Potentially Infected with Avian Influenza**

**Edition: January 28, 2010**

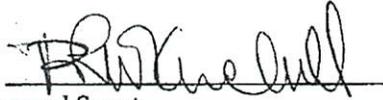
**9.0 Signatures**

This protocol has been signed by the following parties on MAR 09 2010:

Paul Littlewood  
Canadian Food Inspection Agency



Dr. Perry Kendall  
BC Ministry of Healthy Living and Sport



Lynn Bailey  
BC Ministry of Environment

