



Project: Technical assistance to improve implementation of food safety standards and disease crisis preparedness

The killing of poultry in case of HPAI

Lecturer: Mustafa Tufan

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Content

- General overview
- Killing of poultry
- Depopulation
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 - Depopulation report
 - Handling of the birds
- Stunning and killing of birds

How should use the SOP



This SOP will be used by **member staff** of the CDCC, LDCC and EG and all others involved in the implementation of killing measures in affected establishments.

Where? Whom?

1. 'central disease control centre' – CDCC
2. 'local disease control centre(s)' – LDCC
3. expert group/s – EG, - operational on request of the CDCC or LDCC.

Following the '**official**' **confirmation of HPAI outbreak** in an establishment, the LDCC shall immediately **start the planning of the depopulation** of the susceptible species. When planning and conducting the killing the following principles should be observed:

- **all animals** of susceptible species kept in the affected establishment shall be killed as soon as possible on the spot, within the establishment, in such a way as to avoid any risk of spreading a listed disease agent during and after killing;
- **stunning and killing** must be carried out by workers with an appropriate level of competence who are trained or have sufficient experience;

- it is important that **animal welfare** is observed and that rules are complied with at all stages in the process of depopulation
- depopulation should take place as soon as possible, with the **depopulation goal of 24-hours or less (if possible)**
- for the purpose of sound **planning and organizing of the depopulation**, **each premise is evaluated individually**, considering epidemiological information, housing and environmental conditions, currently available resources and personnel, and other relevant factors
- there should be **continuous monitoring** of the procedures by the veterinary specialist to ensure they are consistently effective regarding animal welfare, operator safety and biosecurity

The purposes of SOP



The purpose of SOP is to provide a guideline for:
the CDCC, LDCC and EG 'officials' on conducting the killing
of birds in case of an outbreak of HPAI.



The depopulation plan should be drafted **in accordance with Annex 1 part 1** and it shall contain, at least the following elements:

- the **ID number of farm** and susceptible animals, by type and age category;
- sketch/**map of the farm** where the killing of animals should be carried out;
- **list of appropriate equipment**, mechanization and means of transport to realize this activity;
- **list of material** and **human resources** needed for the realization of the activity;
- the **precise time** frame for realization;
- the most appropriate method for **euthanasia and depopulation**;
- number of teams and their composition;
- **PPE** and other consumables;
- the **cost** of activities;
- **manipulation** and movement of animals;
- **biosecurity** measures;
- the **health and safety of the killing staff**;
- and **other** issues depending on case by case basis

The **team leader/s** of the depopulation team responsible for depopulation should prepare a report **for each establishment** where **the animals** were killed. This report should contain:

- ✓ **status of the killed animal** (contact, positive result, suspicious);
- ✓ **number, type and category** of killed animals;
- ✓ **methods** used for stunning and killing;
- ✓ **remarks**;



Handling of the animals during the killing

The killing of the animals can start after the approval of the depopulation plan.

The team should mark out the culling area and designate it as “**High Risk**” or the “**RED**” zone.

Depopulation activities should be performed quickly and correctly in the following order:

- assessment and evaluation of the condition and the necessary time for performing the activity of the farm;
- examination of animals and review and completion of documentation for epidemiological investigation;
- the killing of animals at the farm;
- safe loading and channelling transport of the carcasses;
- safe removal of carcasses.

Handling of the animals during the killing



Regarding the location of the killing, the following should be taken into account:

- available **space**;
- **staff safety**;
- **animal safety** and **welfare**;
- accessibility and proximity to the location where the corpses will be **removed/loaded**;
- the **risk to public safety**;

Bird behaviour refers to the actions of a bird in response to environmental situations. Some bird behaviour is instinctive, whilst other behaviour is learned. Behaviour includes caring for itself, feeding and interaction with others (birds, humans, other animals).

Bird species don't just look unique, they have unique ways of acting, moving, sitting, and flying. When you learn these habits, you can recognize many birds the same way you notice a friend walking through a crowd of strangers.

Most birds will exhibit aggressive behaviour when they feel threatened. Birds that are guarding a nest are more likely to respond aggressively towards an encroaching person or animal. The most frequent encounters involve birds such as northern mockingbirds or raptors that make their nests in and around human-populated areas.

Stunning and killing of birds



During the depopulation, the birds must be rendered unconscious before killing.

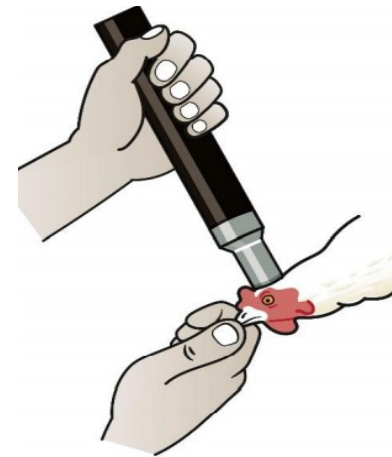
There are different ways of stunning poultry on-farm for the purpose of emergency.

The most common methods:

- 1. Penetrating captive bolt**
- 2. Manual cervical dislocation**
- 3. Percussive blow to the head**

Penetrating captive bolt - 1

- The bird is restrained by its body or it can be placed in a cone or shackle. With one hand you gently hold the bird's beak, while the other hand operates the captive bolt. The head of the bird should be held against a hard surface.
- The target of the stunner is the top of the bird's head, The stunner must be placed firmly against the bird's head, at the center, aiming straight down.
- Captive bolt euthanasia makes the bird unconscious by physically damaging the brain by "concussing" the skull. It is not necessary to penetrate the skull for this to be effective. Unconsciousness is achieved immediately when the positioning and power of the blow are correct



Fixation the head



Unacceptable

Acceptable

Good

Best

Penetrating captive bolt - 2

- Captive bolt devices must be maintained and oiled as per the manufacturer's instructions.
- Take care when handling and using captive bolt devices. They are safer than firearms, but without proper care and maintenance, captive bolt devices can injure operators or bystanders.
- Restraint can be accomplished by a single operator with simple tools or can be performed by two people.
- The captive bolt should be placed perpendicular to the skull, firmly against the head, between the ears and eyes, with the "chin" of the bird on an immobile surface unless otherwise instructed by the user's manual.



Catching and using captive bolt devices

Manual cervical dislocation - 1



- Neck dislocation (or stretching) separates the spine from the head. By using this method one person may kill no more than 70 birds per day.
- The bird must be restrained and positioned.
- One hand is used to lift and hold the bird by its legs and use the other hand to locate the fingers around the bird's neck from behind its skull.
- In one continuous movement pull both hands quickly and firmly in opposite directions and snap the head back sharply.
- This stunning method constitutes **acceptable** practice.



Manual cervical dislocation - 2

Use for chicks, pullets, chickens and turkeys of appropriate size that operators can easily dislocate. Large birds (i.e., breeders or growing turkeys) may be restrained by the wings if they are too large to be held by the legs during cervical dislocation.

Alternative grip: hold head by placing the thumb and index finger around the neck, at the base of the head. Some users feel that this alternative grip lets them put more traction on the neck. This is an acceptable grip, provided the head of the bird can be flexed towards its back sufficiently.



Cervical dislocation in chickens

Manual cervical dislocation - 3

- Apply increasing force to stretch the neck until you feel the skull separate from the spine.
- For chicks or pullets less than seven days of age, placing the bird's chin on a narrow, strong edge, and pressing firmly on the back of the neck where the skull joins the neck will cause the first vertebra to separate from the skull, damaging the brainstem and vertebra resulting in unconsciousness and death.



*Cervical dislocation
in chicks*

Manual cervical dislocation - 4

- When performed correctly, the operator will be able to feel the disconnect of the neck directly behind the skull. Feeling this disconnection is important in ensuring that the procedure has been done correctly, and the bird will not recover.
- If performed incorrectly, there will be boney structures still attached to the skull. This means that the brainstem will not be damaged, and the time to unconsciousness is extended. This is usually the result of the “wind-milling” method and is unacceptable .
- Cervical dislocation requires damage to the brainstem to cause loss of consciousness. Death is caused by the interruption of blood supply to the brain. If the brainstem is not damaged, unconsciousness occurs after a period that is too long to be considered humane and results in death by suffocation.

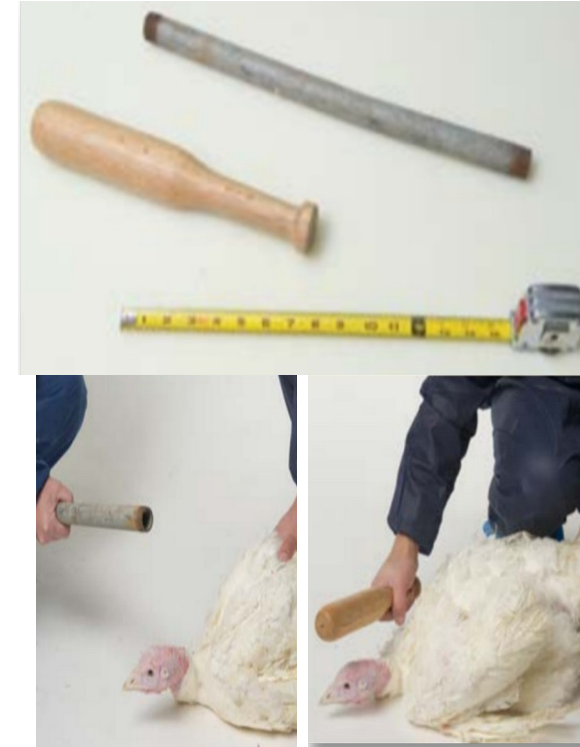


Example of correctly performed technique

Percussive blow to the head

The bird may be stunned by hitting it accurately at the back of the head with blunt force. When done appropriately, this causes severe damage to the brain.

- This method should not be used as a routine method. It should only be used when other methods are not available, for example in an emergency. You should kill with this method not more than 70 birds per day, and only birds weighing up to 5 kg.
- This method is done by lifting and holding the bird by its legs and resting its head on a hard surface, before hitting the bird's head. The blow should hit the back of the bird's head. You should hit the bird's head with a suitable object that is heavy enough, but easy to handle (club, piece of iron pipe).



*The technique of
percussive blow to the
head*

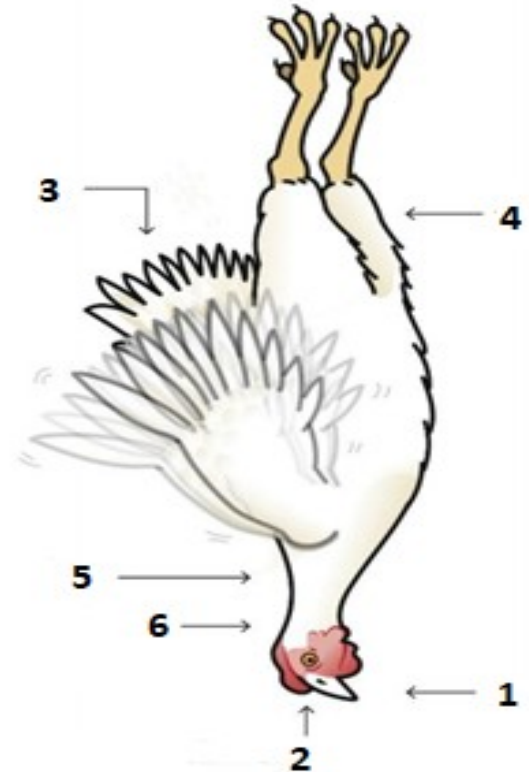


Verifying stunning



After using the captive bolt, blow to head, or dislocation methods, check for:

1. the bird shows no regular breathing – the best place to check for this is between the legs if the bird is shackled;
2. the bird's eyes do not blink when touched with the finger (eye signals are not always accurate);
3. the bird is flapping its wings uncontrollably;
4. the bird is flexing and extending its legs;
5. the bird has no neck tension. If a bird is stunned with dislocation,
6. there is a gap in the vertebrae of the neck.



Signs for verifying stunning



Part 1 – Form for depopulation plan

Depopulation plan for establishment

Depopulation plan for village/settlement

Part 2 – Form for depopulation report

Report for depopulation of establishment

Report for depopulation of village/settlement



- When properly applied, any of the methods are humane for the animal. There is no perfect method of euthanasia for poultry, and research continues improving methods of euthanasia.
- Every method has its strengths and weaknesses, and decisions for the best method must be made on a farm-by-farm basis.
- The following guidelines may help in evaluating the applicability of each method on an individual farm.



Green boxes indicate a lower risk of negative consequences in the areas indicated



Yellow boxes indicate a moderate risk of negative consequences.



Red boxes are a higher risk of negative outcomes.

Comparison of the effectiveness of methods - 2



Method of Euthanasia	Considerations	Biosecurity Risk	Risk to Human Safety	Public Perception	Effect on Worker
Manuel Cervical Dislocation	Effective only in smaller birds. Operator strength and technique determine effective weight limits for this technique.				
Mechanical Cervical Dislocation	The device must dislocate the neck vertebrae, not cause crushing of bones of the neck, and be comparable to manual cervical dislocation with respect to time to loss of consciousness.				
Non- Penetrating Captiva Bolt	Not practical for chicks or young poults. Elaborate equipment and maintenance protocols required				
Penetrating Captiva Bolt	Not practical for chicks or young poults. Elaborate equipment and maintenance protocols required				
CO₂	Elaborate equipment and maintenance protocols required. CO ₂ causes distress to birds if not applied properly. Necessary exposure time can be variable				
Decapitation	Properly maintained equipment is effective for all classes of poultry. There are concerns for biosecurity due to blood loss.				
Blunt Force Trauma	High level of control and repeatability of the procedure are crucial				



Reference materials

Local legal texts:

1. Legal text on Animal Health 41-2012 <http://veteriner.gov.ct.tr/Mevzuat>
2. -Instruction for the animal diseases control program
<http://veteriner.gov.ct.tr/Mevzuat>

EU legislation:

3. Council Regulation (EC) No 1099/2009 of 24 September 2009 on the protection of animals at the time of killing (Text with EEA relevance) OJ L 303, 18.11.2009, p. 1–30 (BG, ES, CS, DA, DE, ET, EL, EN, FR, IT, LV, LT, HU, MT, NL, PL, PT, RO, SK, SL, FI, SV)
Special edition in Croatian: Chapter 15 Volume 007 P. 223 – 252
<https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A32009R1099>
4. COMMISSION DELEGATED REGULATION (EU) 2020/687 of 17 December 2019 supplementing Regulation (EU) 2016/429 of the European Parliament and the Council, as regards rules for the prevention and control of certain listed diseases <https://eur-lex.europa.eu/>



Reference materials

EU legislation:

3. European Commission, Directorate-General for Health and Food Safety, *Preparation of best practices on the protection of animals at the time of killing: final report*, Publications Office, 2017, <https://data.europa.eu/doi/10.2875/15243>

Other resources:

1. FAO (2007). Wild Birds and Avian Influenza: an introduction to applied field research and disease sampling techniques. Edited by D. Whitworth, S.H. Newman, T. Mundkur and P. Harris. FAO Animal Production and Health Manual, No. 5. Rome. <http://www.fao.org/3/a1521e/a1521e.pdf>

Project e-mail: foodsafetyprojectTCc@gmail.com

THANK YOU FOR YOUR ATTENTION



École Nationale des Services Vétérinaires
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