

# On-Farm Slaughter of Poultry for Disease Control

## SUMMARY

Birds kept for commercial purposes are usually transported to processing plants to be slaughtered for human consumption, but in certain situations whole flocks of poultry may have to be slaughtered on-farm. The main reason for this is to deal with outbreaks of infectious, notifiable diseases such as Newcastle Disease or Avian Influenza.

This Technical Note focuses on the slaughter or killing methods which can legally be used for the humane disposal of large poultry flocks on-farm. It aims to provide constructive, practical advice to maximise bird welfare.

**Anyone involved in the slaughter of poultry for disease control must be aware of the animal welfare implications when killing large numbers of birds on-farm. Individuals involved must be appropriately trained to prevent birds from suffering unnecessarily.**

## Legislation

When slaughtering birds on-farm for disease control purposes, there is a range of legislation of which you need to be aware. This is in place to safeguard bird welfare and to help prevent the further spread of disease. The relevant legislation is listed below:

### ***Animal Welfare Act 2006***

It is an offence to cause '**unnecessary suffering**' to any animal.

### ***The Welfare of Animals (Slaughter or Killing) Regulations 1995 (as amended) (WASK '95)***

It is an offence to cause '**any avoidable pain, excitement or suffering to any animal**'.

### ***The Agriculture (Miscellaneous Provisions) Act 1968***

It is an offence to cause any '**unnecessary pain or unnecessary distress**' to any animal.

### ***The Avian Influenza and Influenza of Avian Origin in Mammals (England) Order 2006***

States that birds confirmed with avian influenza '**are killed without delay on the premises where they are kept**'.

The ***Animal By-Products Regulations 2005*** lists the permitted carcase disposal methods. It is important that you check with your Local Authority for suitable carcase disposal methods before proceeding with any method of on-farm killing.





## Options available

WASK '95 stipulates the methods allowed in the UK for the slaughter or killing of poultry for the purpose of disease control. These methods are:

- 1) **Decapitation/dislocation of the neck**
- 2) **Percussive stunning**
- 3) **Killing by electrocution**
- 4) **Killing by exposure to lethal gas mixtures**
- 5) **Lethal injection**
- 6) **Ventilation shut-down**
- 7) **\*Free bullet**

**\* This method is impractical and, from a health and safety point of view, not advisable for the on-farm killing of large flocks of poultry.**

## Decapitation/dislocation of the neck

Decapitation involves severing the head from the neck. It is legal without prior stunning, but is not recommended on welfare grounds as brain activity may continue for up to 30 seconds and the bird is not rendered immediately unconscious. Decapitation, therefore, is not an acceptable method of killing without prior stunning.

Neck dislocation without prior stunning is a legal method of killing poultry. As such, it must induce immediate unconsciousness without causing pain or suffering. In practice this is very difficult to achieve as neck dislocation does not consistently concuss the brain and is unlikely to cause immediate insensibility.

This method should only be used in a disease control situation where better methods are not available and only by competent staff who are fully trained in the use of this method. Dislocation of the neck should not be attempted on birds over 7kg.

## Percussive stunning

The Cash Poultry Killer (CPK) is a mechanically operated instrument that has been specifically developed to kill poultry. This type of device applies a severe blow to the bird's skull to render it immediately unconscious. When applied correctly, the blow delivered by the CPK will kill the bird. This device has been designed specifically to kill poultry in emergency situations or for disease control.

Two types of CPK are currently available; an air-powered device which was initially developed for use on the production line in slaughterhouses and a cartridge-powered tool for on-farm use where an independent power source is essential.

It should be noted however, that although the cartridge-powered device is suitable for killing small numbers of birds on-farm, it would not be practical for killing large numbers as the cartridge has to be replaced each time the CPK is fired which limits the rate at which birds can be killed. The device may also overheat when used continuously over extended periods of time. In situations where large numbers of birds have to be culled on-farm the air-powered CPK would be a better alternative.



Cartridge-powered CPK



## Killing by electrocution

Equipment has been manufactured for the on-farm killing of poultry by electrocution, but this is not currently available in the UK. The system uses standard electrical waterbath equipment with the voltage increased to a level where it is ensured that all birds are killed immediately within the waterbath, therefore they do not need to be bled afterwards.



Mobile electrical waterbath stun/kill system

These mobile electrical waterbath systems were used in the 2003 outbreak of Avian Influenza in the Netherlands and were found to be capable of killing large numbers of birds, as long as the supply of birds was consistent. Other advantages are that these systems have relatively low running costs and are simple to clean and disinfect. However, birds do have to be handled and removed from the poultry sheds and then shackled live, which is not only a welfare issue but potentially a health and safety issue if birds are infected with a zoonotic disease. It also needs to be considered that the equipment is an expensive initial investment and mains electricity is required.

## Killing by exposure to lethal gas mixtures

Under WASK '95, in a disease control situation birds can be killed by '*...exposure to carbon dioxide or a lethal combination of other gases or gas mixtures;*'

There are currently two gas killing methods which are likely to be used in the UK for killing birds in a disease control situation and these are either: in-house gas killing or gas killing in containers.

### In-house gas killing

Research, funded by the Department of Environment, Food and Rural Affairs (Defra) and the Scottish Executive (SEERAD), is currently being carried out to find the most appropriate methods and gas mixtures needed for gas killing of poultry in sheds.

This includes looking into the cost, availability and aversiveness of certain gas mixtures, as well as how to seal buildings and the best way to pump gas mixtures into sheds to ensure the birds are killed as quickly and humanely as possible. This information will hopefully be available in the near future so the industry and government are able to put the appropriate systems in place.

### Gas killing in containers

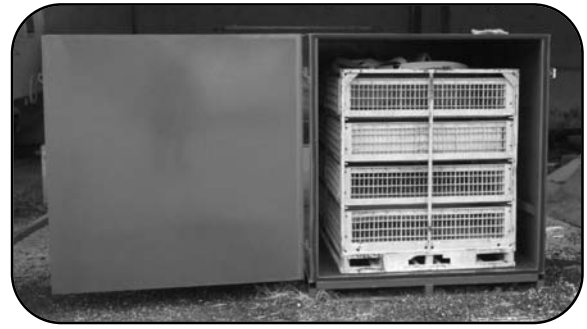
This particular gas killing system was researched by Bristol University and developed in conjunction with staff of the UK State Veterinary Service and Defra; with the Humane Slaughter Association (HSA) being involved in the final stages.

The Containerised Gassing Unit (CGU) is a portable system that kills birds through anoxia (lack of oxygen). Birds are placed inside a standard industry transport module and loaded into a solid rectangular gas-tight steel container with a hinged door with two inlets for gas and two outlets through which air is displaced. The CGU is then filled with the gas mixture which enters at the bottom and rises to the top, displacing air as it does so. It is essential that the oxygen level in the CGU is brought below 5% and is maintained at this level until all birds are dead.



The gas used with this system is a mixture of 80% by volume of argon and 20% by volume carbon dioxide. This mixture is commercially available throughout the world as it is used for welding.

When two CGUs are operated in tandem and operated to their full potential, this system is capable of killing 4–5000 birds per hour. It is important to ensure birds are caught by trained and competent staff and loaded into transport modules at normal stocking densities. All birds must be checked to ensure that they are dead and any that exit the CGU showing signs of life must be killed immediately using a back-up method.



Containerised Gassing Unit (CGU)

### Lethal injection

Under WASK '95 birds can be killed in a disease control situation by lethal injection of '(i) a drug with anaesthetic properties which causes rapid loss of consciousness followed by death; or (ii) any other compound if preceded by the induction of anaesthesia'.

This is obviously a humane method which can be used on all poultry species and when administered correctly will induce death smoothly. However, highly trained personnel under the supervision of a veterinary surgeon are required to administer the lethal injection which will limit the use of this option due to availability of staff. The process itself will also be relatively slow as the birds will need to be restrained before the drug is administered.

### Ventilation shutdown

In April 2006 WASK '95 was amended to allow a derogation for ventilation shutdown as a killing method for poultry in certain disease control situations where authorised by the Secretary of State. Ventilation shutdown is defined as '*...the cessation of natural or mechanical ventilation of air in a building in which birds are housed with or without any action taken to raise the air temperature in the building*'.

It is currently unknown whether birds would be killed through suffocation or heat stress or how long it would take the birds to die. This method raises considerable welfare concerns and the HSA looks to all concerned to take every step to avoid this situation ever arising.

### Further publications

<i>Poultry Welfare - Taking Responsibility</i> training DVD package	HSA 2006
<i>Practical Slaughter of Poultry - A Guide for the Small Producer</i> (2nd Edition)	HSA 2001
<i>Emergency Slaughter</i> video/dvd	HSA 2004

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The only charity committed exclusively to the welfare of animals in markets, during transport and to the point of slaughter



*Humane Slaughter Association*

Taking a rational, practical approach, making real, lasting improvements to the welfare of food animals.

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