

## Technical Note No 25

# Slaughter and Killing of Minority Farmed Species

## Summary

The last twenty years or so have seen many big changes in British agriculture. The livestock sector in particular has had to change radically to adapt to new legislation, stricter production standards set by the customer and changes to the subsidy system. Some livestock farmers have diversified into the rearing of species not indigenous to the UK: these include the Asian water buffalo, North American bison, ostrich, camelids and species that lived here in ancient times, such as wild boar. As with domestic livestock, these animals are bred and reared for various reasons, the main ones being milk, meat and wool or fibre production.

When slaughtering or killing these animals, it is highly likely that the slaughterman and/or veterinary surgeon will be presented with a number of challenges not normally experienced with domesticated livestock.

**It is essential that careful planning and preparation takes place before any attempt is made to slaughter or kill these animals.**

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## **What are the minority farmed species in the UK?**

For the purposes of this leaflet, they are deer, ostrich, wild boar, water buffalo, bison and camelids (alpaca and llama). These all present meat hygiene and slaughter staff with new challenges due to physical and behavioural differences compared to traditional domestic livestock (cattle, sheep, goats, pigs and horses). As outlined here, currently available stunning/killing equipment can be effective but, in some cases (eg with use of captive-bolt on water buffalo), research is continuing into the best methods of application.

### **Legislation**

The legislation covering the welfare of these animals requires that they “shall be spared any avoidable pain, distress or suffering during their killing and related operations”. It is important to be aware that enforcement bodies have a varying views on the field slaughter of some species. Field slaughter is generally thought to be more ‘welfare-friendly’ for non-domesticated animals, but how this fits in with meat hygiene regulations is not always clear. Provision is made for the field slaughter of bison under the EC Food Hygiene Regulations H2.

**It is important to note there are both physical and behavioural differences between the minority species described in this leaflet and those species traditionally farmed in the UK.**

### **Physical differences**

The skulls of water buffalo and bison differ in shape compared to the domestic beef and dairy cattle found in the UK: the frontal bone is usually much thicker (up to six times in the case of bison), so tried and tested stunning and killing techniques, as used on cattle, may not be as effective on water buffalo and bison.

### **Behavioural differences**

Deer, ostrich, wild boar and bison are non-domesticated animals; their flight zones tend to be much bigger than those of domesticated animals and their reactions to human handlers may be both unpredictable and dangerous. Handling facilities for domesticated species may be inappropriate and inadequate, leading to a risk of injury to staff and injury to, or ineffective slaughter of, livestock.

### **Deer**

Deer are the most common of the minority farmed species: the first deer farms being set up in the 1970s. They are flighty animals with a strong herding instinct and will jump or climb if crowded too tightly. High, solid-sided races are therefore needed for the safe handling of deer. Slaughter can be carried out in the field or in the abattoir, provided the lairage and handling systems are suitable.

### **Ostrich**

Ostrich farms were first set up in the late 1980s. Ostriches are large, flighty birds that can accelerate up to 45mph. Handling ostriches can be difficult and attempts must not be made to rush them.

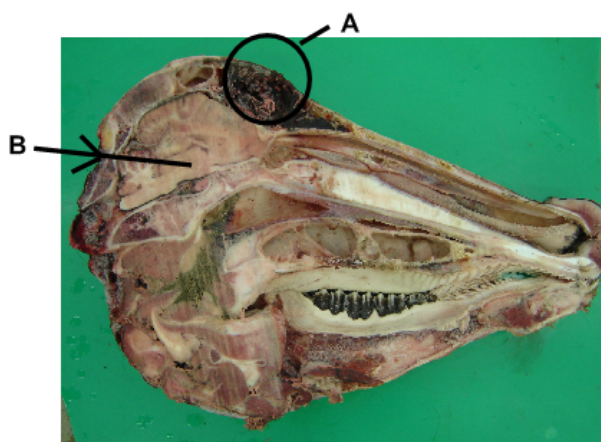
They are dangerous animals to handle as they kick forward and have been known to disembowel some unfortunate would-be handlers. Attempts to use physical stunning on-farm proved to be unsuccessful and most commercial ostriches are slaughtered in abattoirs using electrical head-only stunning, followed by exsanguination.

### **Wild boar**

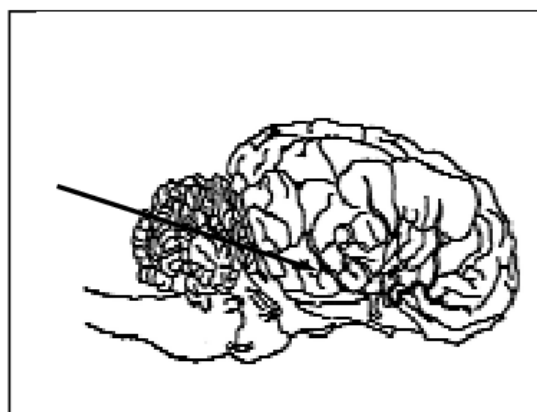
Wild boar have been farmed in the UK since the early 1990s at present there is no central register of all wild boar farms in the UK, therefore, the total number of wild boar in the UK is unknown. However, it has been reported that in 2010 there were over 1300 wild boar being held across 13 sites in Scotland. Wild boar are classed as dangerous wild animals and, as such, require a local authority licence to be kept. Their behaviour can be erratic and unpredictable and, if cornered, they may attack with some ferocity. Like deer, they will also jump and climb up walls if agitated or crowded. They may be field-slaughtered as with deer, or transported to an abattoir where they may be slaughtered by electrical stunning (group or individual) followed by exsanguination, or shot dead using a shotgun or rifle (the use of firearms carries serious health and safety implications).

### **Water buffalo**

Water buffalo were introduced into the UK in mid-1990s and are farmed primarily for milk production, with a secondary income from beef animals (surplus males). Water buffalo are domesticated and very docile as a rule, but they can be stubborn at times. They differ physically from domestic bovines, having a very thick frontal bone to the fore of the brain, which makes effective captive-bolt stunning (with instruments designed for use in cattle only) very difficult (see Figure 1A). Recent research carried out by the HSA and others, found that using a heavy-duty, trigger-activated, captive-bolt instrument in the poll position is consistently more effective. The shot should be directed rostrally (towards the nose), to direct the energy through the cerebellum towards the mid-brain. Place the muzzle of the stunner into the depression below the intercornueal protuberance and above the points of attachment of the Ligamenta nuchae (see Figures 1B & 2). However under current legislation this is not a permitted method. The alternative is to shoot them dead using a shotgun or rifle (the latter carries serious health and safety implications).



**Figure 1 Water Buffalo**



**Figure 2 Direction of shot**

### **North American bison**

North American bison were first farmed in the UK in the mid-1990s. These animals are not aggressive, but 'defensive'. They have a large flight-zone and when approached will form an outward-looking circle. They can be difficult to put through traditional cattle-handling systems and can get very agitated when confined in such. Like water buffalo, bison have a very thick frontal bone (up to six times that of a domestic bovine at any given age), therefore effective, captive-bolt stunning might be difficult to achieve (see Figure 3). Bison can be field-slaughtered by a marksman, then abattoir-dressed; alternatively they can be transported to the abattoir and shot dead in the trailer prior to dressing.



**Figure 3 Bison**

### **Camelids**

Camelids are farmed primarily for fibre production and the UK alpaca industry is predicted to grow rapidly over the next few years. After four or five years the quality of the fibre drops significantly and it is thought there may be significant numbers of cull animals in the future. Llamas and alpacas can be stunned effectively using captive-bolt instruments.

### **In conclusion**

There have been very few, if any, recent radical changes in slaughter and killing techniques. Existing methods and their application may have to be adapted and/or refined for these emerging minority farmed species and it will be some time before definitive guidance can be written on how slaughter may best be carried out according to the individual circumstances. Enforcement bodies may have to be prepared to show flexibility in order to give priority to welfare considerations in situations where animal welfare may come into conflict with the letter of the law. The following table summarises the options available when considering the humane slaughter or killing of minority farmed species.

## Options for the humane killing of minority farmed species in the UK

SPECIES	SLAUGHTER SITE	METHOD	DISTANCE
<i>Deer</i>	Field slaughter	.243/.275/.308 rifle (JSP round)	5–10 metres whilst feeding
	Abattoir	Captive-bolt stunning followed by bleeding	Full contact; animal in restraining crate
<i>Ostrich</i>	Field slaughter	Captive-bolt followed by pithing or bleeding Shotgun (birdshot)	Full contact Close quarters
	Abattoir	Head-only electrical stunning followed by bleeding	Full contact (at least four-man operation using specialist handling and restraining equipment)
<i>Wild Boar</i>	Field slaughter	.22/.357 carbine/rifle 12/16/20 bore shotgun (BB/SG)	5–10 metres whilst feeding 3–5 metres whilst feeding
	Abattoir	Head-only electrical stunning 12/16/20 bore shotgun (birdshot)	Individual animals and use leg protection 1–3 metres individually penned animals
<i>Water Buffalo</i>	Field slaughter	243/.275/.308 rifle (JSP round) 12 bore shotgun (birdshot)	10–30 metres whilst grazing Close quarters
	Abattoir	12 bore shotgun (birdshot) .32 humane killer/.38/.357 pistol Captive-bolt (minimum 4 grain cartridge)	Close quarters Close quarters Full contact (may not be fully effective in the frontal position)
<i>Bison</i>	Field slaughter	.243/.275/.308 rifle (JSP round)	10–30 metres whilst grazing
	Abattoir	.38/.357 carbine (semi-wadcutter)	1–2 metres whilst still in container (bison will lie down)

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## Further Reading

*The Welfare of Animals at the Time of Killing (England) Regulations*  
Defra 2015

*Council Regulation (EC) No 1099/2009 (Protection at the time of killing)*  
*OJ of the EU 2009*

*Regulation (EC) No 853/2004 - 'H2' (Hygiene legislation)*  
*OJ of the EU 2004*

*Council Regulation (EC) No 1/2005 (Transport of animals)*  
*OJ of the EU 2005*

*Dangerous Wild Animals Act 1976 (as amended)*

*Humane Killing of Livestock Using Firearms 2nd Edition*  
HSA 2005

*Captive-Bolt Stunning of Livestock 4th Edition*  
HSA 2006

Wild boar in Scotland: [www.sasa.gov.uk](http://www.sasa.gov.uk)

Full details of all legislation can be found on [www.legislation.gov.uk](http://www.legislation.gov.uk), [www.tso.co.uk](http://www.tso.co.uk) and <http://eur-lex.europa.eu/legal-content>