



Department  
for Environment  
Food & Rural Affairs



Llywodraeth Cymru  
Welsh Government

# Results of the 2018 FSA Survey into Slaughter Methods in England and Wales

February 2019



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## Contents

Slaughter methods in England and Wales 2018 .....	5
Background notes .....	5
Key findings.....	6
Where animals were sourced from (Chapter 2) .....	6
How the animals were slaughtered (Chapter 3 and Annex D) .....	6
Where the meat was distributed to (Chapter 4) .....	7
Third party assurance schemes (Chapter 5).....	7
Non-UK Certificates of Competence (CoC) .....	7
1. The number of animals slaughtered during the survey period .....	8
2. Where the animals were sourced from .....	9
3. How animals were slaughtered.....	10
What proportion of animals were slaughtered using a non-stun method?.....	12
What proportion of animals were slaughtered using a religious slaughter method (including both stun and non-stun)? .....	13
4. Where the meat was distributed to .....	14
Were there differences in where the meat was distributed between stun and non-stun methods of slaughter?.....	17
For Halal slaughter, does the destination of the meat differ between stun and non-stun slaughter methods? .....	20
What proportion of animals slaughtered using a non-stun religious slaughter method were subsequently rejected as being unfit for religious consumption but were fit for wider consumption? .....	22
For sheep how does the method of slaughter vary between the destinations of the resulting meat?.....	23
For calves how does the method of slaughter vary between the destinations of the resulting meat?.....	24

For goats how does the method of slaughter vary between the destinations of the resulting meat?.....	25
5. Third party assurance schemes and certification bodies .....	26
How many slaughterhouses are members of third-party assurance schemes? .....	26
Which certification bodies are Halal and Shechita slaughterhouses certified with? .....	28
Annex A: Definitions .....	30
Annex B: Data issues.....	31
Annex C: The countries exported to mentioned in the survey.....	33
Annex D: Flowcharts detailing each method of slaughter, by species .....	1

# Slaughter methods in England and Wales 2018

This report is based on a survey the Food Standards Agency (FSA) carried out at all slaughterhouses operating in England and Wales during the period 29th January 2018 to 4th February 2018 inclusive, on behalf of Defra and the Welsh Government. The survey was completed by the Official Veterinarians (OVs) based at the slaughterhouses, using the information they were able to acquire from the Food Business Operator (FBO). There was a 100% return rate from all plants slaughtering the animals discussed in this report either in the form of a response or a nil return indicating that the plant was not in operation during the week of the survey. The numbers of animals killed that week can be found in Table 1.1 on page 6 of this report.

The survey focused on throughput, slaughter methods (including stun and non-stun slaughter) and some additional areas such as where the livestock is sourced from and where the meat is distributed to including exports. It included all farmed species and horses, but excluded game birds and deer.

Prior to this survey, the last full FSA survey of slaughterhouses was carried out in 2013. Defra and the Welsh Government will use this up-to-date information in a number of ways including formulating future policy.

“Stunning” is defined in the EU slaughter regulation<sup>1</sup> as a process which “causes loss of consciousness and sensibility without pain including any process resulting in instantaneous death”. There are different stunning methods listed in the EU slaughter regulation that are approved for use in slaughterhouses. Some stunning methods cause unconsciousness and death, others only cause unconsciousness and so are known as “simple stuns”. Simple stuns must always be followed by a killing method such as bleeding or pithing.

The EU slaughter regulation and our national regulations allow for Jews and Muslims to carry out slaughter without stunning, in accordance with religious rites, providing certain conditions are met.

## Background notes

In this report “standard” slaughter refers to all non-religious stun slaughter. Halal slaughter includes both stun and non-stun slaughter while Shechita slaughter is exclusively non-stun. A list of slaughter methods which are considered to be stun and which are considered to be non-stun for the purposes of this report can be found in Annex A.

Stun slaughter, which includes both standard slaughter and Halal stun slaughter, is referred to as “stunning prior to slaughter” in this report.

In this report, where exports are discussed, this refers to both direct exports and those sent to a UK based wholesale trader for export.

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<sup>1</sup> EC Regulation 1099/2009 on the protection of animals at time of killing

There are a number of issues with the survey which may affect the reliability of the analysis provided in this report, in particular issues with the questions relating to exports. All such issues are outlined in Annex B.

This survey is based on a single week which was selected with the intention of it being representative of the whole year, avoiding any religious festivals.

**NOTE:** All findings in this report refer to England and Wales combined. Please note that all non-stun slaughter reported occurred in England and no non-stun slaughter of any species was found to have taken place in Wales.

## Key findings

### Where animals were sourced from (Chapter 2)

- The majority of cattle (67%) were sourced from farms, with 13% being sourced from markets.
- Less than a third (31%) of calves were sourced directly from farms, with the majority (58%) being sourced from dealers.
- For the various species of poultry and for pigs, almost all animals were sourced from farms (98% or greater in all cases).
- 37% of sheep were sourced directly from farms, with almost half (47%) being sourced from markets.

### How the animals were slaughtered (Chapter 3 and Annex D)

- For all species the majority of animals were stunned prior to slaughter.
- 99% of cattle were stunned prior to slaughter, with 80% being stunned by captive bolt.
- 97% of calves were stunned prior to slaughter, with 89% being stunned by captive bolt.
- 75% of sheep were stunned prior to slaughter mainly by electrical head stunning. Sheep was the species with the largest proportion of animals slaughtered by a non-stun method (25%), with almost all of this being Halal. For all other species the proportion of slaughter which was non-stun was at most 10% (see Figure 3.2).
- 86% of pigs were stunned with high concentration CO<sub>2</sub> with almost all of the remaining 14% being stunned through electronarcosis.
- Broiler chicken was by far the most commonly slaughtered species. Out of the 18 million broiler chickens slaughtered, approximately 70% were gas stunned and 10% were slaughtered using non-stun methods, almost all of which were non-stun Halal including Halal water-bath not using the same parameters as standard water-bath slaughter (see Figure 3.2).
- Over 800,000 spent hens (hens no longer laying) were slaughtered and 92% of these were stunned with CO<sub>2</sub> or with other gas mixtures.

## **Where the meat was distributed to (Chapter 4)**

- 56% of beef was distributed within the UK either via wholesale traders, supermarkets or other UK destinations. 8% of beef was exported via a wholesale traders and 3% was exported directly. However, it is important to note that the destination of one third (33%) of beef produced was not provided. The majority of exported beef went to EU countries including France, the Netherlands and Belgium.
- Over half (53%) of calf meat was distributed within the UK either via wholesale traders, supermarkets or other UK destinations. Just under half (45%) of calf meat was exported, all of which was sent to the EU. The only EU countries mentioned by the three slaughterhouses exporting to the EU were Poland and the Netherlands.
- 66% of pork was distributed within the UK either via wholesale traders, supermarkets or other UK destinations. 18% of pork was exported, with 7% going to EU countries and 11% going to non-EU countries, predominantly the USA and Asia, including China and Hong Kong.
- 56% of sheep meat was distributed within the UK, either via wholesale traders, supermarkets or other UK destinations. A quarter (25%) of all sheep meat was exported (either directly or through a wholesale trader for export). The vast majority of sheep meat exports were Halal, and Halal sheep meat exports accounted for 20% of all sheep meat produced. Most of this was from sheep stunned prior to slaughter, and Halal stunned sheep meat exports accounted for 14% of all sheep meat produced (see Figure 4.6). Almost all sheep meat exports went to a number of countries within the EU (see Figure 4.1c), the most commonly mentioned of which were France, Germany, the Netherlands and Belgium – see Figure C1.
- 85% of broiler meat was distributed within the UK, either via wholesale traders, supermarkets or other UK destinations. In total 7% of broiler meat was exported, almost all to the EU (see Figure 4.1c). The proportion of non-stun broiler meat exported was negligible (see Figure 4.2b).

## **Third party assurance schemes (Chapter 5)**

- The majority of poultry slaughterhouses (68%) are members of at least one third party assurance scheme compared to less than half (48%) of red meat slaughterhouses.
- The most prominent third-party assurance schemes were Red Tractor and British Retail Consortium (BRC), with 32% and 20% of all slaughterhouses known to be members of these schemes respectively.

## **Non-UK Certificates of Competence (CoC)**

At the time of the survey there were 163 non-UK CoCs recorded, with 5 of these being in Wales.

# 1. The number of animals slaughtered during the survey period

The number of slaughterhouses operating and animals slaughtered can be found in Figure 1.1 below.

- A total of 19,718,680 animals were slaughtered across 248 operating plants (228 in England and 20 in Wales).
- The majority of the animals that were slaughtered (91%) were broiler chickens.

**Figure 1.1: Animals slaughtered and slaughterhouses operating in England and Wales, by species of animal: 29<sup>th</sup> January – 4<sup>th</sup> February 2018**

<b>Species</b>	<b>Number Slaughtered</b>	<b>Operating Plants</b>
Cattle	35,343	145
Calves	1,245	27
Sheep	244,305	153
Goats	402	48
Horses	67	1
Pigs	176,887	111
Broilers	18,012,455	50
Spent Hens	803,006	9
Turkeys	147,750	11
Other Poultry*	297,220	10
<b>All species</b>	<b>19,718,680</b>	<b>248</b>

\*Other Poultry includes ducks, guinea fowl, geese and quail. Quail is not classed as game as it is farmed for food and is processed in dedicated slaughterhouses.

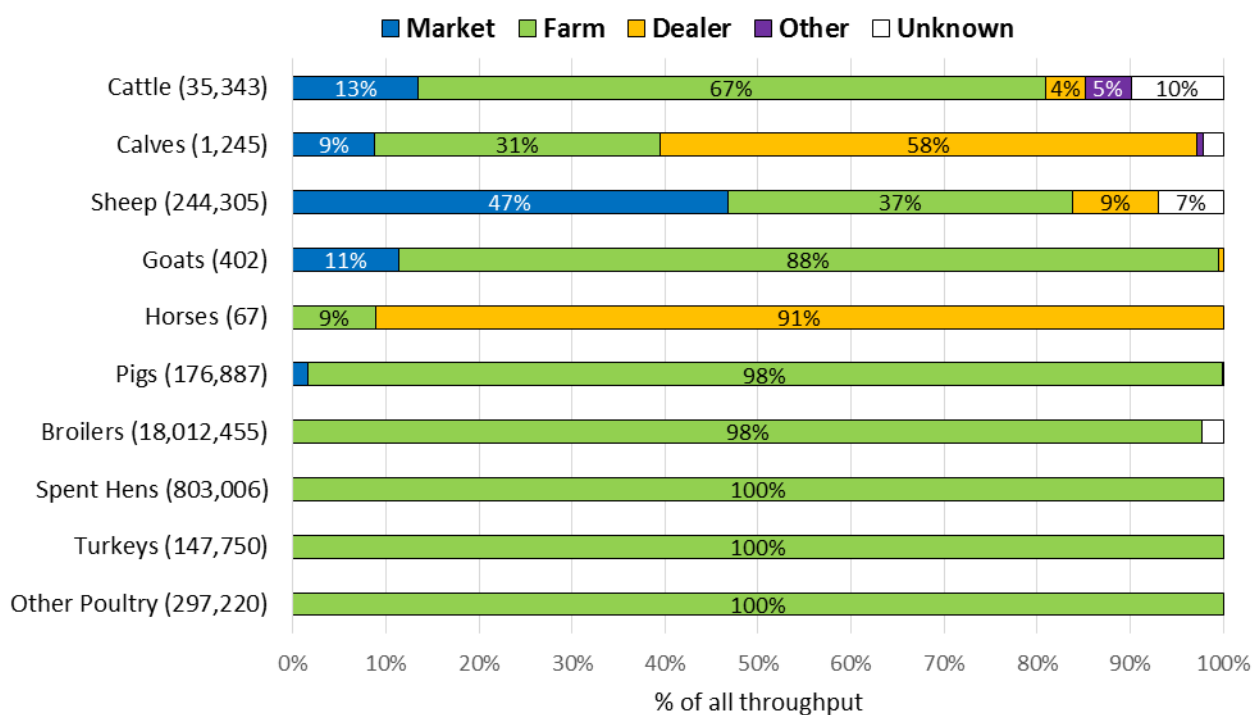


## 2. Where the animals were sourced from

Figure 2.1 shows the source of the animals slaughtered during the week of 29<sup>th</sup> January – 4<sup>th</sup> February 2018 inclusive. The “Unknown” category refers to where slaughterhouses have provided no or incomplete information about where animals were sourced from.

- Around two thirds (67%) of cattle were sourced directly from farms.
- The vast majority of goats (88%) and pigs (98%) were sourced directly from farms.
- Almost all poultry was sourced directly from farms, except 2% of broiler chickens for which the source was unknown.

**Figure 2.1: Percentage breakdown of the source, by species of animals**

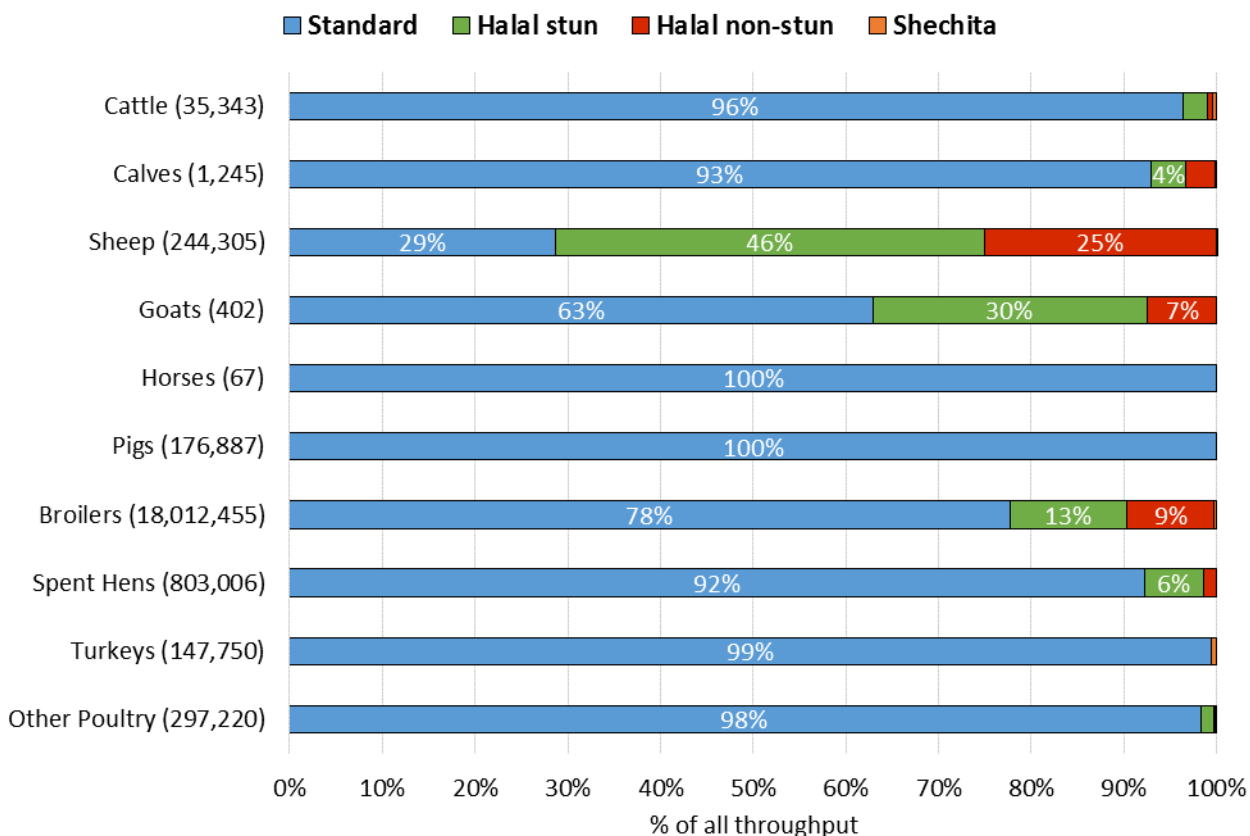


For all Poultry species, the breakdown by source only included two options: “Farm” and “Other”. So, it is plausible that, had the remaining options (“Market” and “Dealer”) been included in the survey, some or all of this 2% may have gone into these two options.

### 3. How animals were slaughtered

Figure 3.1 below summarises how each species was slaughtered. For a more detailed breakdown by specific methods of slaughter see Annex D.

**Figure 3.1: Percentage of animals slaughtered, by slaughter method**



**As a percentage of total animals slaughtered for the given species**

<b>Species</b>	<b>Total animals slaughtered</b>	<b>Standard</b>	<b>Halal Stun</b>	<b>Halal Non-Stun</b>	<b>Shechita</b>	<b>Stun slaughter</b>	<b>Non-stun slaughter</b>	<b>Religious slaughter</b>
		(1)	(2)	(3)	(4)	(1) + (2)	(3) + (4)	(2) + (3) + (4)
Cattle	35,343	96.3%	2.6%	0.6%	0.5%	98.9%	1.1%	3.7%
Calves	1,245	92.9%	3.9%	3.1%	0.2%	96.7%	3.3%	7.1%
Sheep	244,305	28.7%	46.2%	24.9%	0.1%	75.0%	25.0%	71.3%
Goats	402	62.9%	29.6%	7.5%	-	92.5%	7.5%	37.1%
Horses	67	100.0%	-	-	-	100.0%	-	-
Pigs	176,887	100.0%	-	-	-	100.0%	-	-
Broilers	18,012,455	77.8%	12.6%	9.4%	0.3%	90.3%	9.7%	22.2%
Spent Hens	803,006	92.2%	6.4%	1.4%	-	98.6%	1.4%	7.8%
Turkeys	147,750	99.5%	-	-	0.5%	99.5%	0.5%	0.5%
Other Poultry	297,220	98.2%	1.5%	0.0%	0.2%	99.8%	0.2%	1.8%

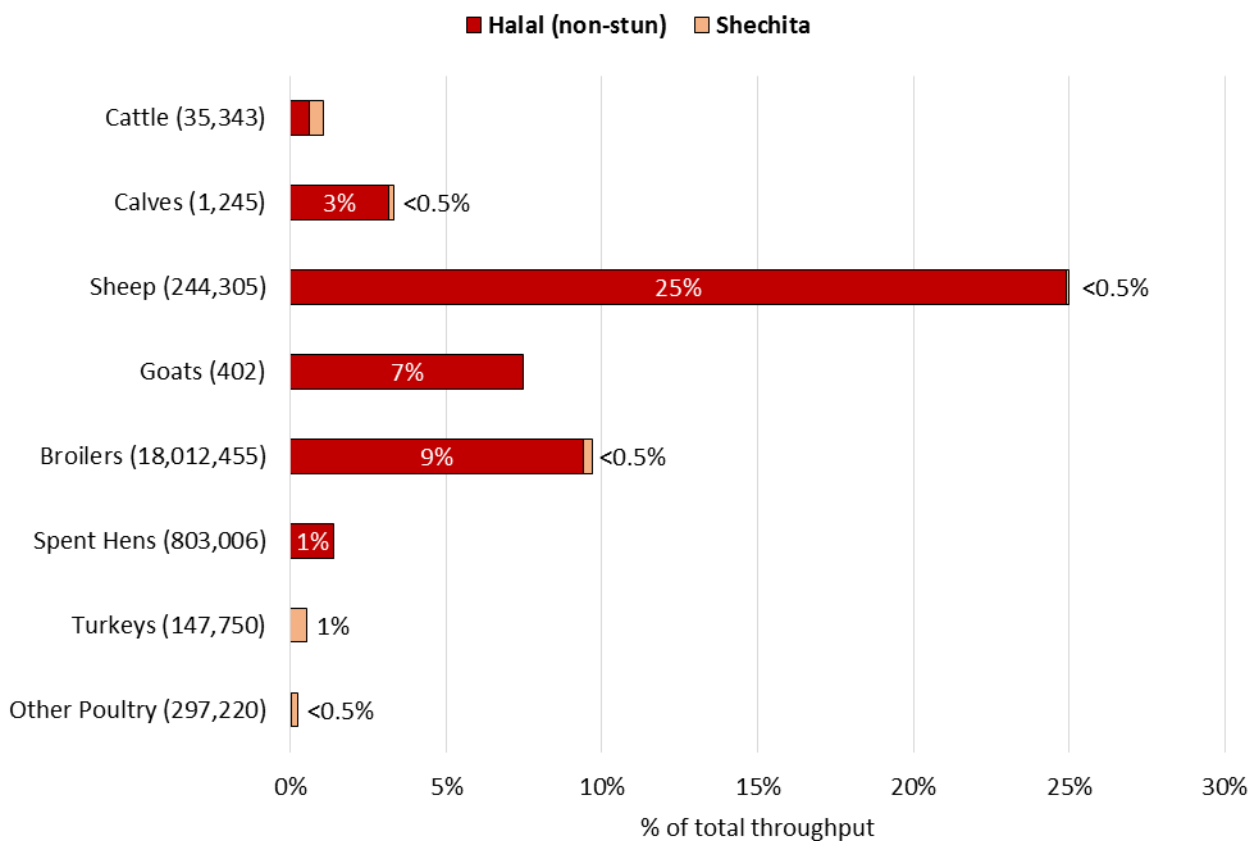
\* More than 0% but less than 0.05%      - = None

## What proportion of animals were slaughtered using a non-stun method?

The Shechita method of slaughter is exclusively non-stun while Halal slaughter is comprised of both stun and non-stun methods of slaughter. Horses and pigs are only slaughtered using stun methods.

- For all species the majority of animals were stunned prior to slaughter.
- Sheep had the largest proportion of animals slaughtered by a non-stun method (25%), with almost all of this being Halal and less than 0.5% was Shechita.
- 10% of broiler chickens were slaughtered using non-stun methods, whereas for all of the remaining poultry the proportion slaughtered by non-stun methods was around 1%.
- For broiler chickens and spent hens almost all non-stun slaughter was Halal. For all of the remaining poultry species almost all non-stun slaughter was Shechita.

**Figure 3.2: Percentage of animals slaughtered by a non-stun method**



## What proportion of animals were slaughtered using a religious slaughter method (including both stun and non-stun)?

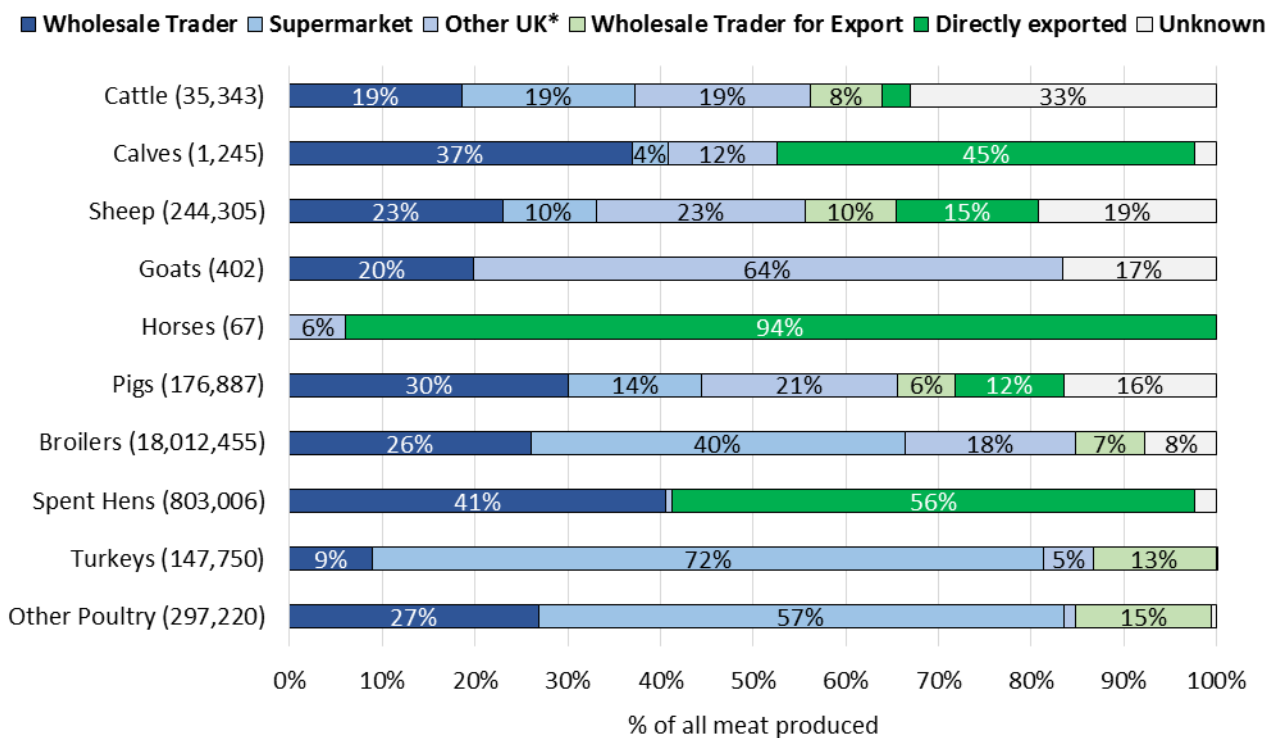
- For almost all species, the majority of animals were slaughtered by standard methods. The exception being sheep with 71% (173,871) slaughtered by a Halal method (both stun and non-stun).

## 4. Where the meat was distributed to

As mentioned on page 1, there were some issues with the questions regarding the destination of meat. These issues are outlined in Annex B, paragraphs 2 and 3. The “Unknown” category in each chart in this chapter refers to where slaughterhouses have provided no or incomplete information about the destination of their meat.

The destination of the meat resulting from the slaughter of each species is presented in Figure 4.1a.

**Figure 4.1a: Where meat was distributed to**



\*Other UK includes meat sent to Smithfield, other butchers, individual customers, restaurants and other UK destinations.

**Figure 4.1b: Where the meat distributed to, the full breakdown**

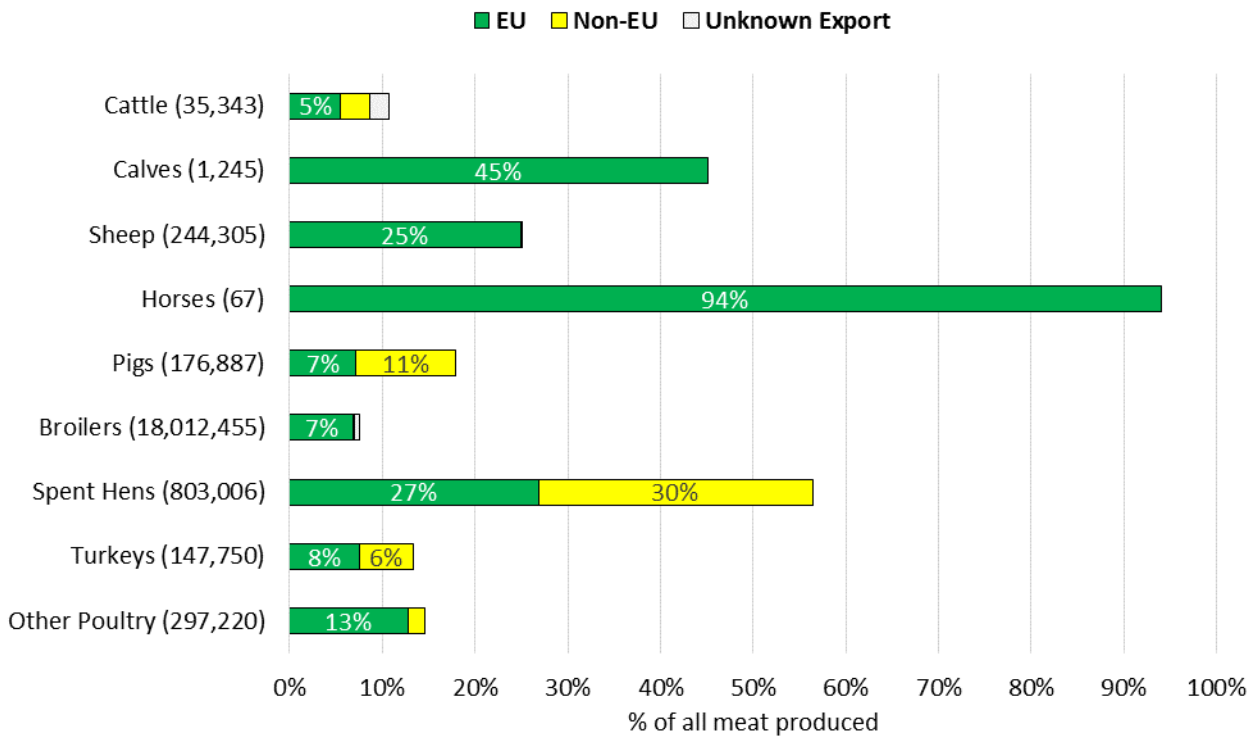
Species	Wholesale Trader	Supermarket	Butcher	Smithfield	Individual customers	Restaurants	Other UK destinations	Wholesale Trader for export	Directly exported	Unknown
Cattle (35,343)	19%	19%	5%	1%	3%	2%	8%	8%	3%	33%
Calves (1,245)	37%	4%	8%	2%	1%	1%	-	-	45%	2%
Sheep (244,305)	23%	10%	17%	4%	1%	*	-	10%	15%	19%
Goats (402)	20%	-	45%	-	18%	*	-	-	-	17%
Horses (67)	-	-	-	-	-	-	6%	-	94%	-
Pigs (176,887)	30%	14%	4%	*	10%	*	7%	6%	12%	16%
Broilers (18,012,455)	26%	40%	5%	1%	*	2%	10%	7%	*	8%
Spent Hens (803,006)	41%	-	1%	*	-	-	-	-	56%	2%
Turkeys (147,750)	9%	72%	1%	1%	*	4%	*	13%	-	*
Other Poultry (297,220)	27%	57%	1%	*	*	*	*	15%	-	1%

\* More than 0% but less than 0.5%      - = None

Looking at the proportion of meat exported and where it was exported to (see Figures 4.1c and C1):

- A quarter of sheep meat was exported almost all to the EU. A large number of EU countries were mentioned by the slaughter houses in question, the most commonly mentioned of which were France (11 slaughterhouses), Germany (8), the Netherlands (7) and Belgium (6).
- Just under half (45%) of calf meat is exported all of which was sent to the EU. The only EU countries mentioned by the three slaughterhouses exporting to the EU were Poland (2 slaughterhouses) and the Netherlands (1).
- 94% of horse meat is exported. The one plant which slaughtered horses exported its meat to both Belgium and France.
- 56% of all spent hen meat is exported. 27% of spent hen meat is exported to the EU and 30% is exported to non-EU destinations. The only EU destination mentioned was the Netherlands (1 slaughterhouse). The rest of the exported spent hen meat went to parts of Sub-Saharan Africa and to Hong Kong.

**Figure 4.1c: The percentage of the meat which was either exported directly or sent to a UK wholesale trader for export, broken down by EU and non-EU**



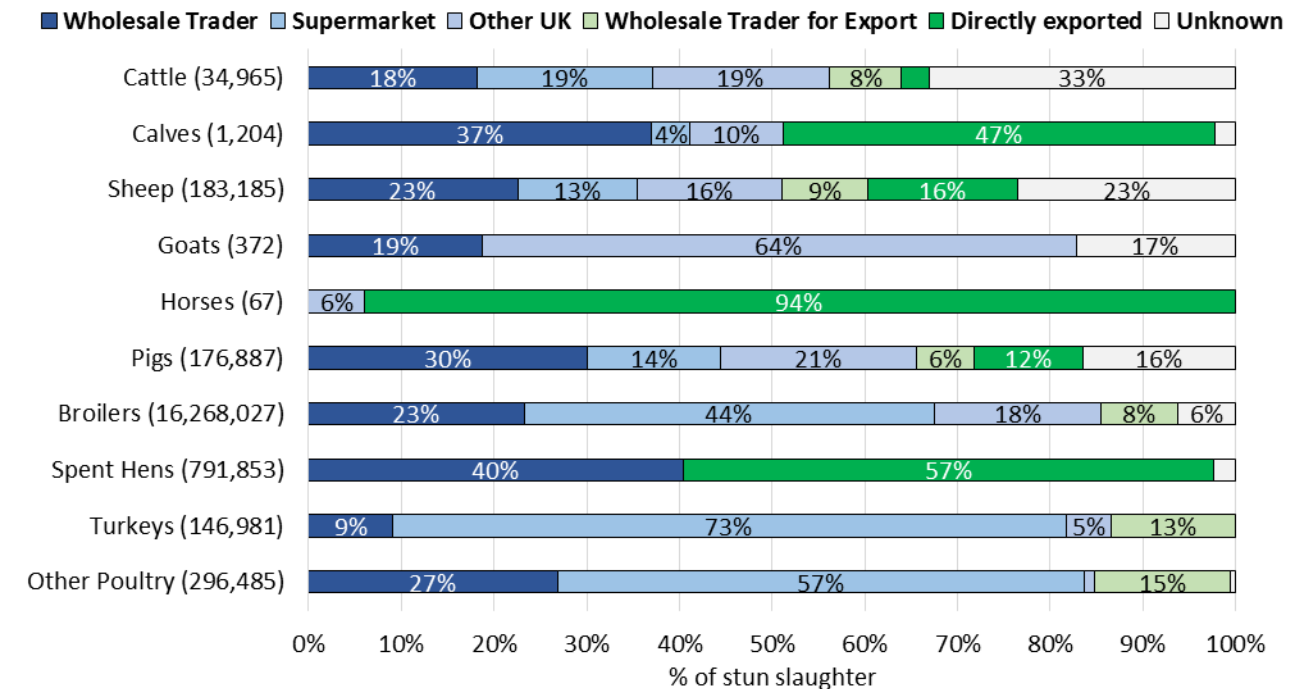
Unknown = Information not provided or incomplete (see Annex B paragraphs 1-2).



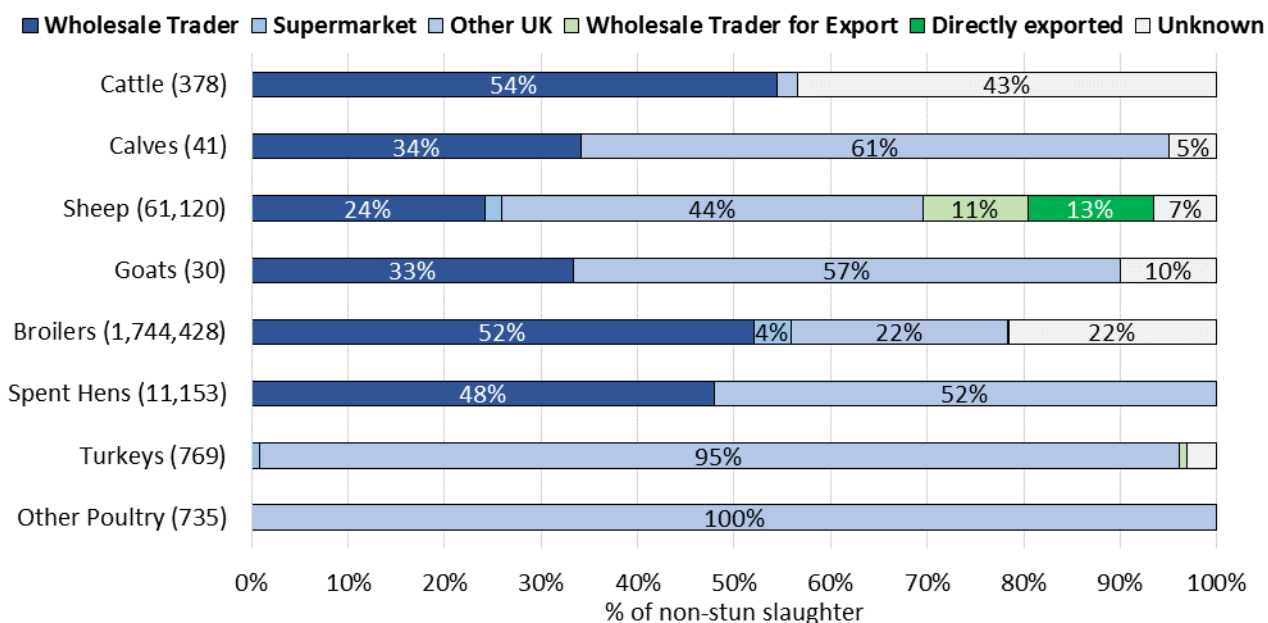
## Were there differences in where the meat was distributed between stun and non-stun methods of slaughter?

- Other than for sheep, for non-stun methods there were almost no cases of meat being exported (either directly or sent to wholesale traders for export), or only a negligible amount, while this is not the case for stun slaughter methods. In the case of sheep, 24% of non-stun meat was exported
- From both stun and non-stun slaughter of broiler chickens, the majority of meat was either sent to wholesale traders or supermarkets in the UK (68% and 56% for stun and non-stun respectively). However, the proportion sent to supermarkets from stun slaughter (44%) was greater than for non-stun slaughter (4%).

**Figure 4.2a: Where the meat was distributed to, stun slaughter**



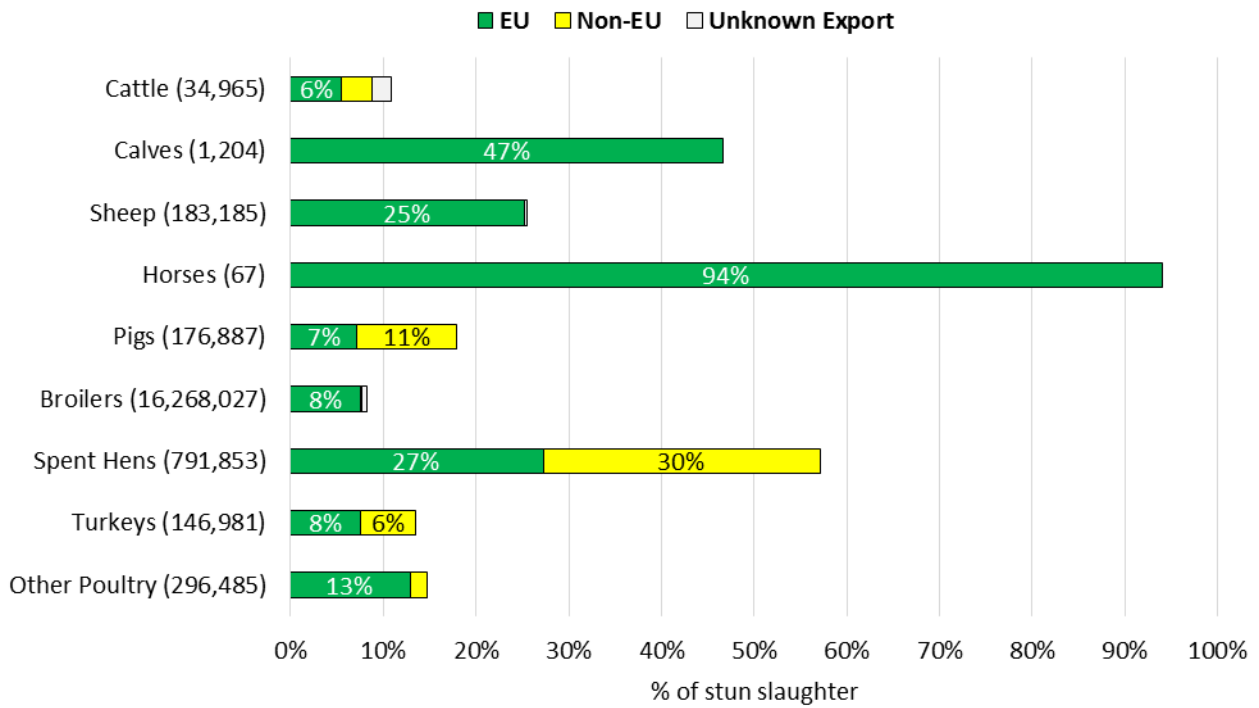
**Figure 4.2b: Where the meat was distributed to, non-stun slaughter**



Unknown = Information not provided or incomplete (see Annex B paragraphs 1-2).

- For almost all meat exported which came from stun slaughter methods, the proportion sent to the EU was greater than the proportion sent to non-EU destinations. The exceptions to this were pigs (7% to the EU, 11% non-EU) and spent hens (27% to the EU, 30% non-EU).
- In contrast to this, all exported meat from non-stun slaughter methods was sent to the EU.
- The survey did ask for the destination of the hind quarters for Shechita slaughtered animals. However, this question was not mandatory and very few slaughterhouses responded. Therefore it is unclear whether or not hind quarters are generally sent on for wider consumption.

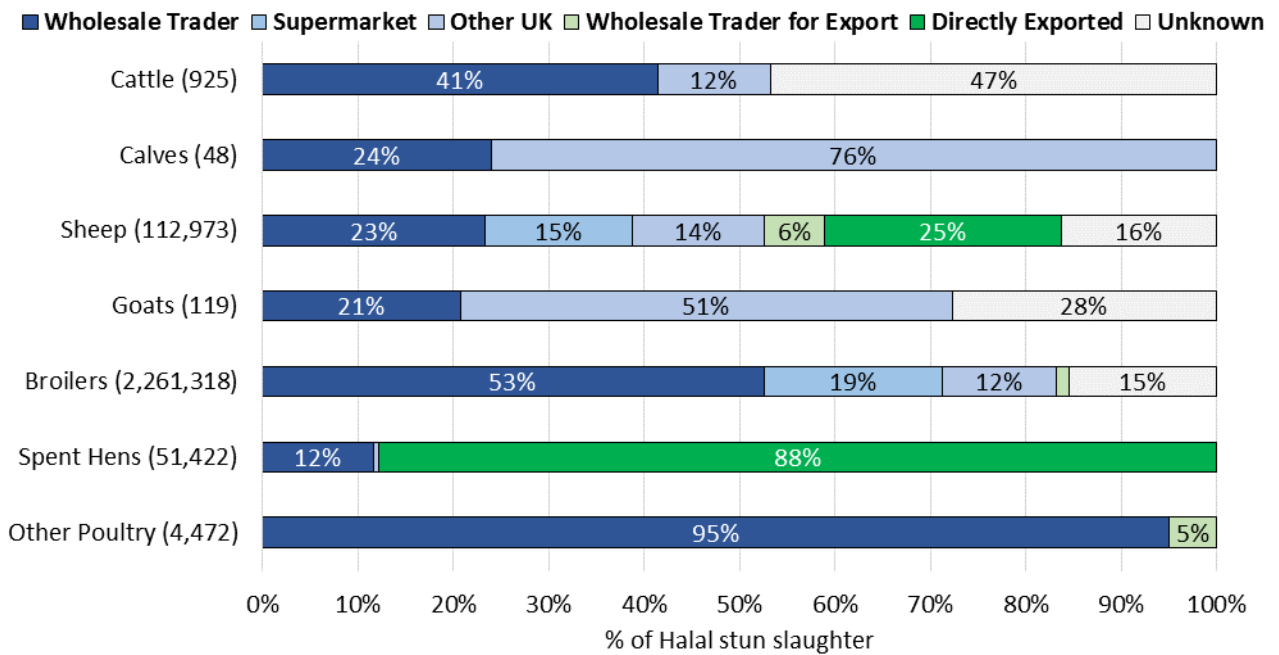
**Figure 4.3: The percentage of the meat from stun slaughter which was either exported directly or sent to a UK wholesale trader for export, broken down by EU and non-EU**



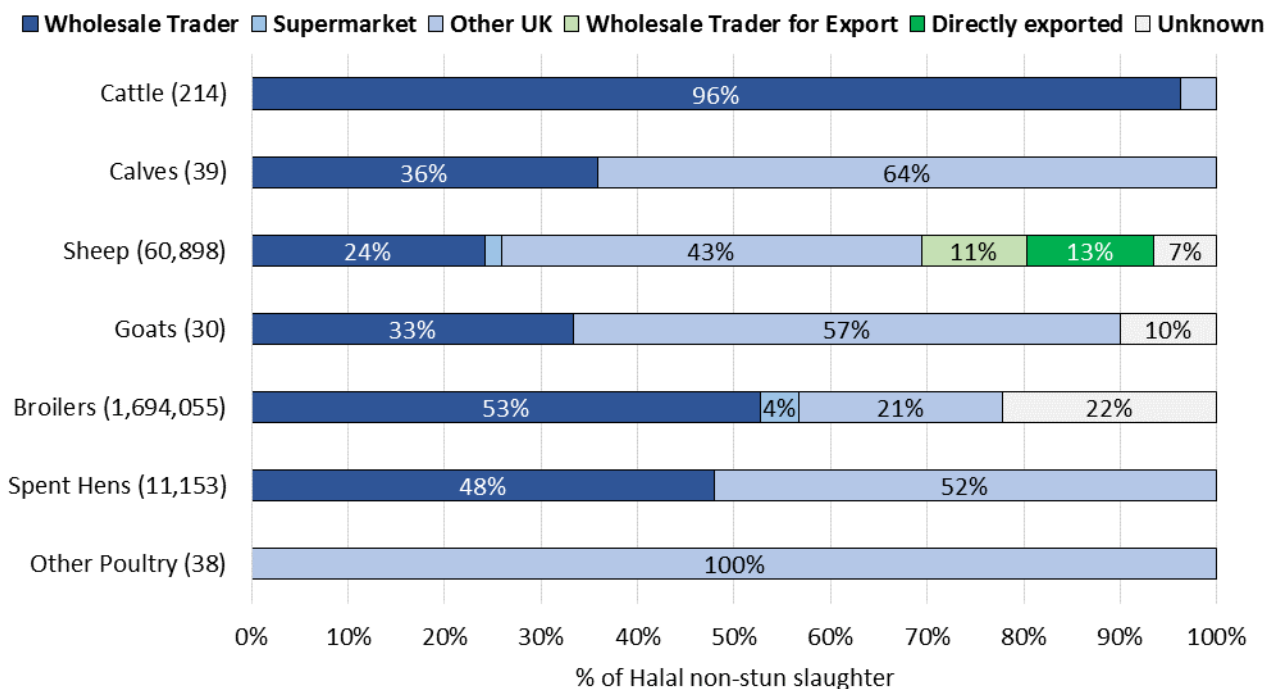
## For Halal slaughter, does the destination of the meat differ between stun and non-stun slaughter methods?

- Other than for sheep, for Halal non-stun methods there were almost no cases of meat being exported (either directly or sent to wholesale traders for export), or only a negligible amount, while this is not the case for Halal stun slaughter methods. In the case of sheep, 24% of Halal non-stun meat was exported.
- For spent hens in particular, the vast majority (88%) of meat from Halal stun slaughter is exported while none of the meat from non-stun Halal slaughter is exported.

**Figure 4.4a: Where the meat was distributed to, Halal stun**



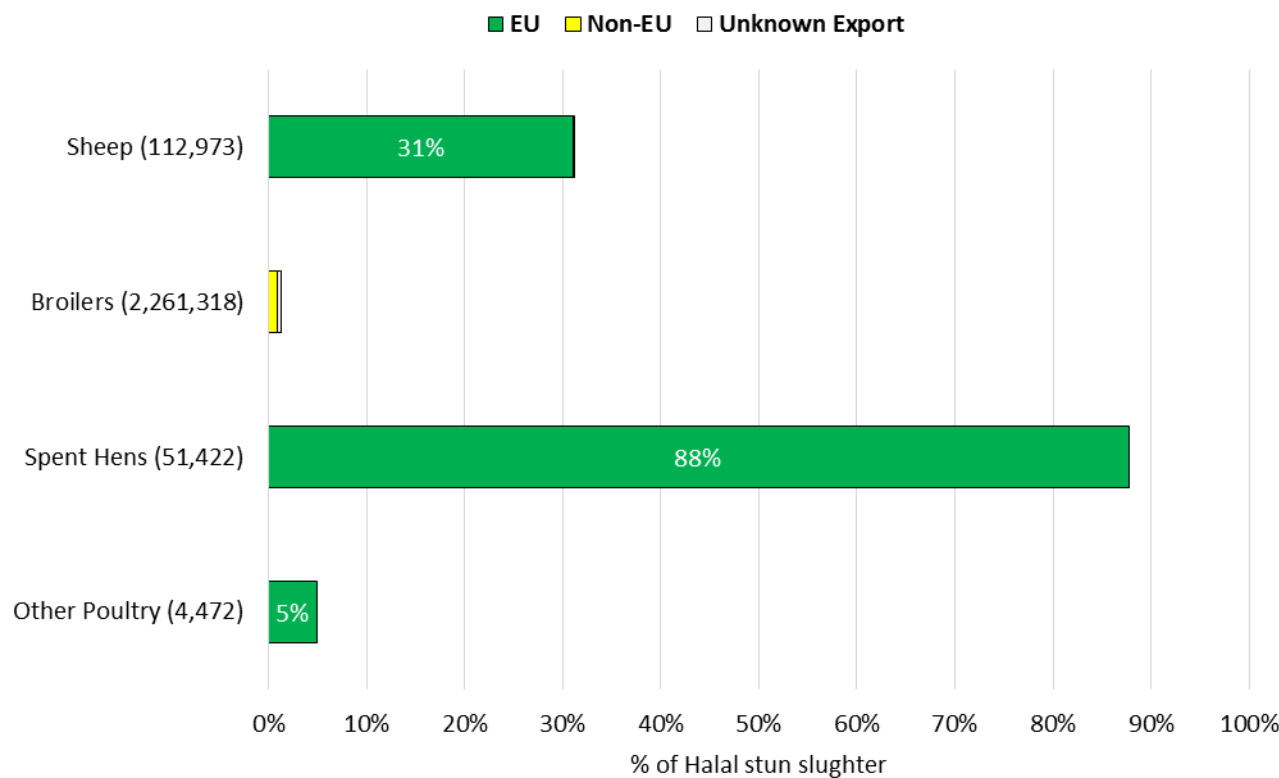
**Figure 4.4b: Where the meat was distributed to, Halal non-stun**



Unknown = Information not provided or incomplete (see Annex B paragraphs 1-2).

- Sheep is the only species for which meat from non-stun Halal slaughter was reported to be exported. Almost a quarter (24%) of non-stun Halal sheep meat is exported and almost all of it is sent to the EU. 31% of stun Halal sheep meat is exported with almost all of it being sent to the EU.
- For both stun and non-stun Halal slaughter of sheep the most commonly mentioned destinations were France, Germany, the Netherlands and Belgium.
- The only species for which meat from Halal stun slaughter was exported to non-EU countries were sheep (a negligible proportion) and broiler chickens (1% of meat produced).

**Figure 4.5: The percentage of the meat from Halal stun slaughter which was either exported directly or sent to a UK wholesale trader for export, broken down by EU and non-EU**



## What proportion of animals slaughtered using a non-stun religious slaughter method were subsequently rejected as being unfit for religious consumption but were fit for wider consumption?

- For all species, no non-stun Halal slaughtered carcasses were rejected as being unfit for non-stun Halal consumption, but fit for wider consumption.
- For species where there were more than 100 Shechita slaughtered animals, the proportion of Shechita slaughtered carcasses rejected as being unfit for Kosher consumption but fit for wider consumption were as follows: 15% of cattle (24 out of 164), 27% of sheep (60 out of 222), 3% of broiler chickens (1263 out of 50,373), 3% of turkeys (21 out of 769) and 1% of other poultry (7 out of 697).<sup>1</sup>

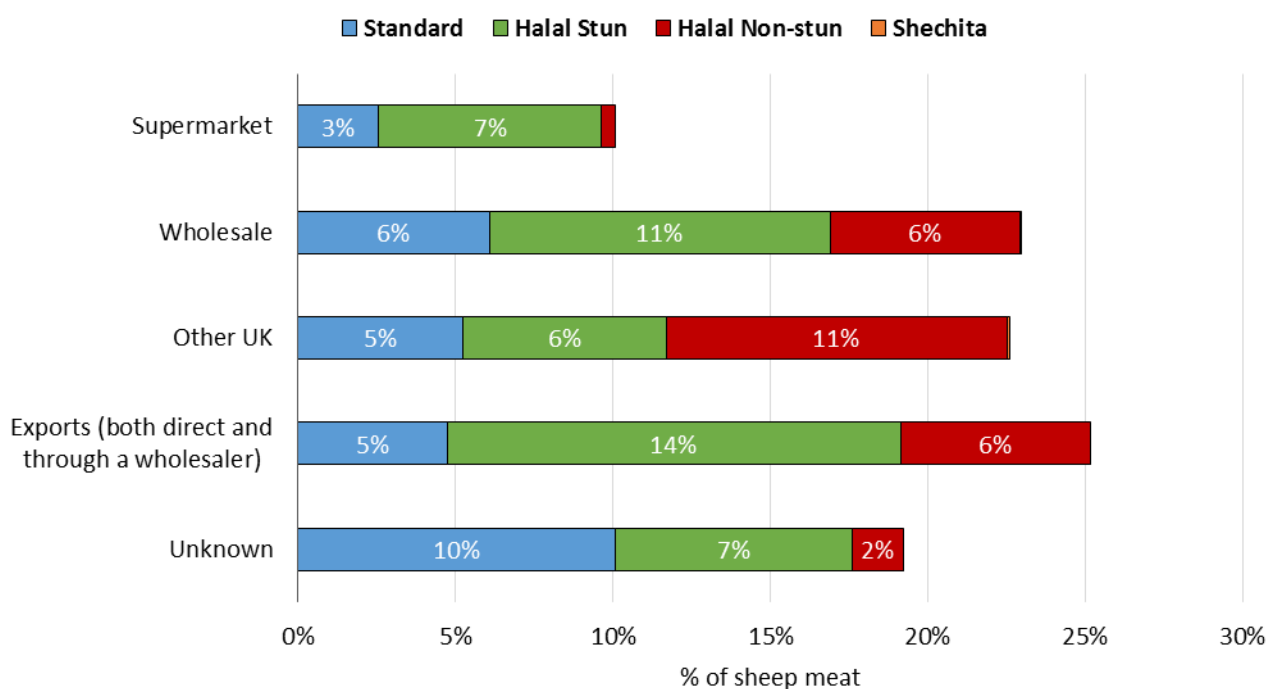
<sup>1</sup> The survey asked for the sum of the ante mortem and post mortem carcasses rejected for Kosher consumption but fit for wider consumption. Here it has been assumed that for Shechita methods animals are not rejected ante mortem for religious reasons, and therefore all the rejections reported were post mortem.

## For sheep how does the method of slaughter vary between the destinations of the resulting meat?

Sheep are looked at in more detail here as it is the animal with the largest proportion of non-stun slaughter.

- For supermarkets and wholesalers most of the sheep meat was from stun slaughter methods while around half of all sheep meat going to other UK destinations is non-stun slaughter.
- A quarter (25%) of all sheep meat was exported (either directly or through a wholesale trader for export) and 24% of this was meat from sheep slaughtered using non-stun methods (this accounted for 6% of all sheep meat exported).

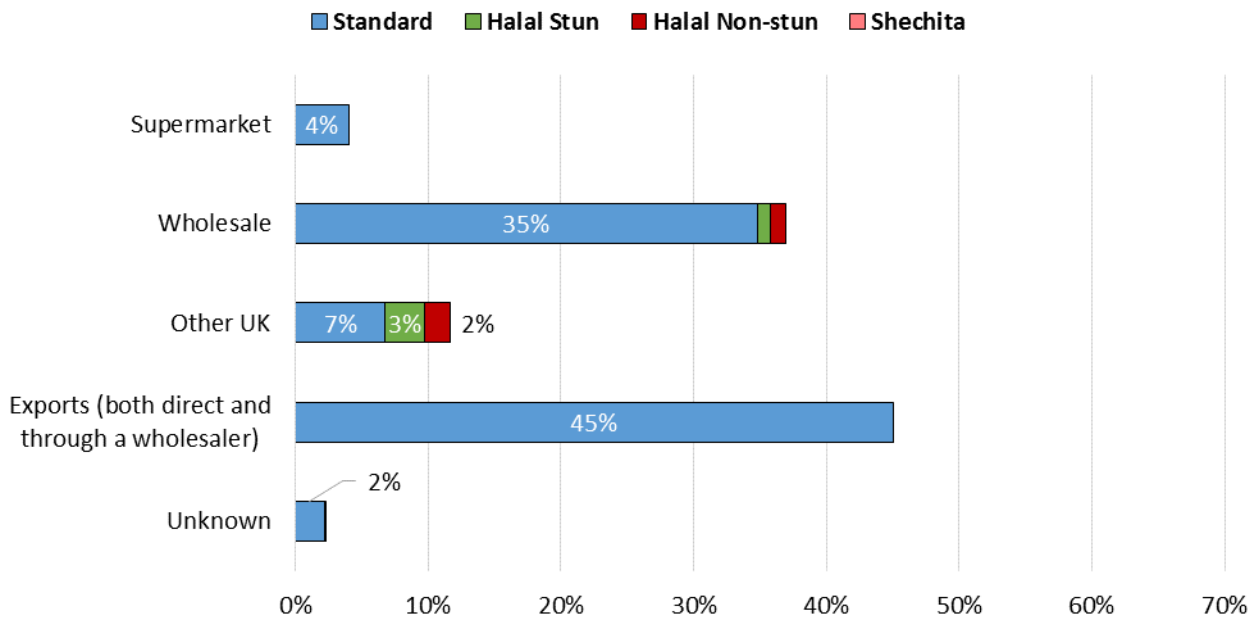
**Figure 4.6: Sheep meat, by slaughter method and destination**



## For calves how does the method of slaughter vary between the destinations of the resulting meat?

- All calf meat exports were from standard slaughter.
- The only destinations known to have received halal non-stun calf meat were wholesalers and butchers. The destination of all calf meat from Shechita slaughter was not provided.

**Figure 4.7: Calf meat, by slaughter method and destination**

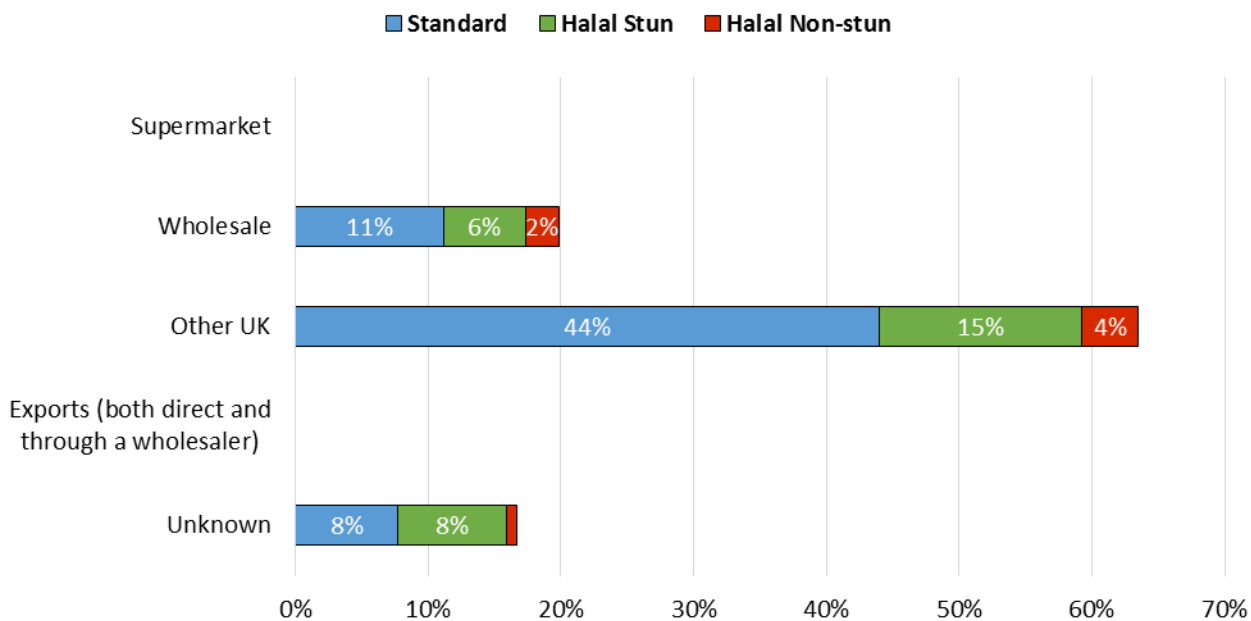


Unknown = Information not provided or incomplete (see Annex B paragraphs 1-2).



## For goats how does the method of slaughter vary between the destinations of the resulting meat?

Figure 4.8: Goat meat, by slaughter method and destination

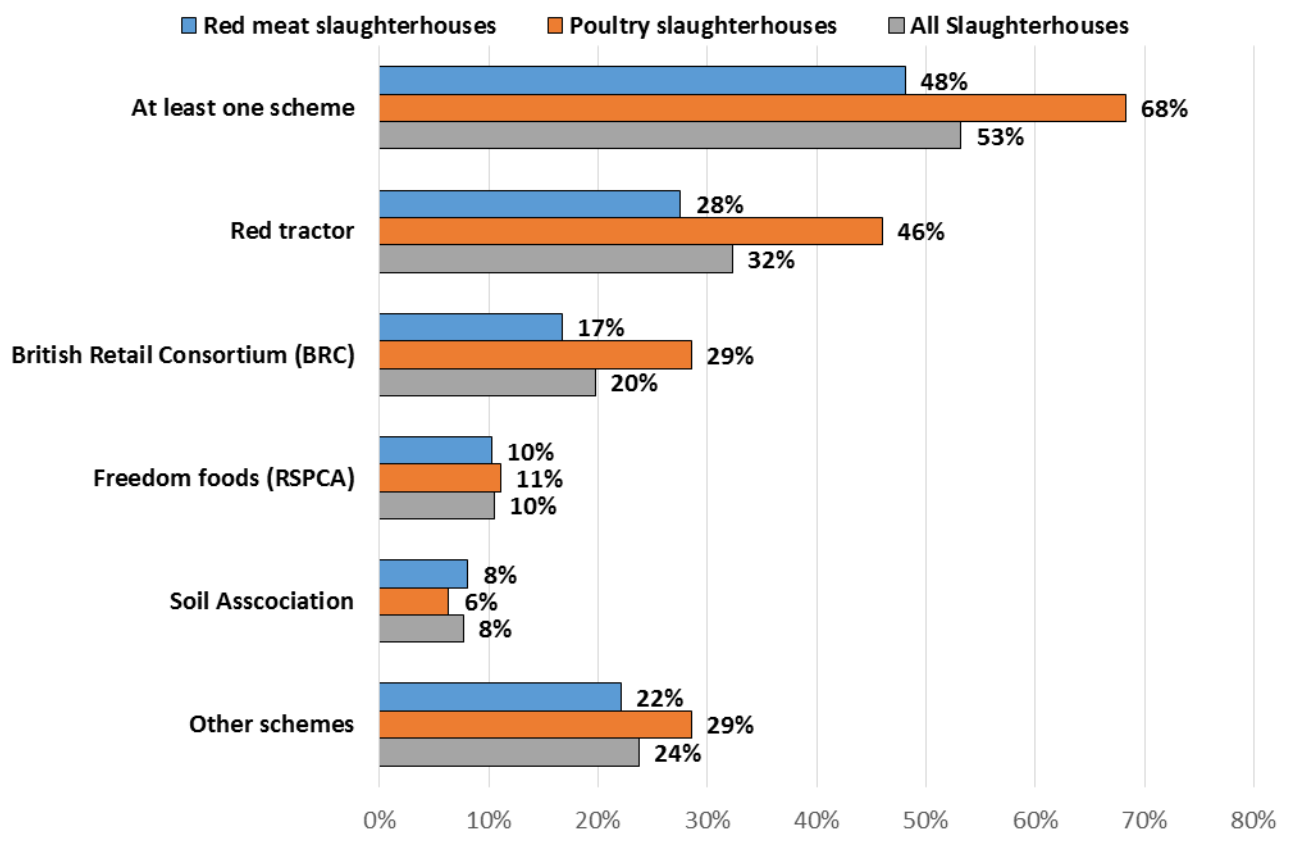


Unknown = Information not provided or incomplete (see Annex B paragraphs 1-2).

## 5. Third party assurance schemes and certification bodies

### How many slaughterhouses are members of third-party assurance schemes?

Figure 5.1: Numbers of slaughterhouses which are members of third-party assurance schemes



<b>Third-party assurance scheme</b>	<b>Red meat slaughterhouses<sup>1</sup></b>	<b>Poultry slaughterhouses</b>	<b>Total</b>
Red tractor	51	29	80
British Retail Consortium (BRC)	31	18	49
Freedom foods (RSPCA)	19	7	26
Soil Association	15	4	19
Other schemes <sup>2</sup>	41	18	59
Not revealed	8	8	16
<b>All slaughterhouse that <u>are</u> members of at least one scheme</b>	<b>89</b>	<b>43</b>	<b>132</b>
<b>All slaughterhouse that <u>are not</u> members of any schemes</b>	<b>96</b>	<b>20</b>	<b>116</b>

1. One red meat slaughterhouse also mentioned slaughtering poultry but was only included in the red meat slaughterhouse count in this table.
2. Other schemes included: British Quality Assured Pork (BQAP), Protected Geographical Indication (PGI) and various supermarket schemes.

- Around half (53%) of slaughterhouses declared that they are members of at least one third-party assurance scheme. The most common schemes are shown in Figure 5.1. Slaughterhouses can typically be members of several schemes which is why the percentages may exceed 100%.
- The majority of poultry slaughterhouses (68%) are members of at least one third-party assurance scheme compared to less than half (48%) of red meat slaughterhouses.
- The Red Tractor and British Retail Consortium (BRC) are the most prominent third-party assurance schemes, having 32% and 20% of slaughterhouses as members respectively.

## Which certification bodies are Halal and Shechita slaughterhouses certified with?

The certification bodies used by Halal and Shechita slaughterhouses are shown in Figures 5.2 – 5.4 below.

**Figure 5.2: Number of slaughterhouses by certification body, stun Halal slaughter**

Certification body	Number of slaughterhouses
Halal Food Authority	5
Halal Consultations	3
Other	7
Not revealed	21
None	2
<b>Total</b>	<b>38</b>

**Figure 5.3: Number of slaughterhouses by certification body, non-stun Halal slaughter**

Certification body	Number of slaughterhouses
Halal Monitoring Committee	14
Halal Consultations	1
Not revealed	12
None	1
<b>Total</b>	<b>28</b>

**Figure 5.4: Number of slaughterhouses by certification body, Shechita slaughter**

<b>Certification body</b>	<b>Number of slaughterhouses</b>
London Board for Shechita	2
Manchester Beth Din	2
Other	3
Not revealed	3
<b>Total*</b>	<b>8</b>

\*The numbers of slaughterhouses associated with each certification body does not add up to the total number of slaughterhouses, as some slaughterhouses are certified with more than one certification body.

## Annex A: Definitions

For the purposes of this report slaughter methods are classified as being stun or non-stun as specified in the table below:

**Figure A1: Stun and non-stun slaughter methods by species**

<b>Species</b>	<b>Stun</b>	<b>Non-stun</b>
<b>Cattle</b>	Free bullet, captive bolt, Jarvis box and Halal stun.	Halal post cut stun, Halal non-stun and Shechita method.
<b>Calves</b>	Free bullet, captive bolt, electronarcosis and Halal stun	Halal post cut stun, Halal non-stun and Shechita method.
<b>Sheep and Goats</b>	Free bullet, captive bolt, electronarcosis (head only), electronarcosis (head to body) and Halal stun.	Halal post cut stun, Halal non-stun and Shechita method.
<b>Pigs</b>	Free bullet, gas – high concentration CO <sub>2</sub> , other gas mixtures, electronarcosis (head only), electronarcosis (head to body) and captive bolt.	
<b>Horses</b>	Free bullet and captive bolt.	
<b>Broiler chickens, Spent Hens, Turkeys and “Other Poultry”</b>	High concentration CO <sub>2</sub> , CO <sub>2</sub> in two phases, other gas mixtures, electrical stunning (head only), water bath (annex 1 compliant) and Halal water bath (annex 1 compliant).	Halal non-stun, Halal water bath (non-annex 1 compliant), other non-annex 1 compliant methods and Shechita method.

## Annex B: Data issues

Checks have been applied across the various responses and any inconsistencies found were queried with the OVs to correct them. However, the accuracy of the results is reliant on the data provided by the FBO through the OVs. Some specific issues with the survey or wider issues which may have implications for the reliability of the analysis in this report are outlined below:

1. Many of the questions in the survey were not mandatory e.g. the destination of the meat after slaughter. Therefore, in some cases the information requested was not provided or incomplete. In cases where information about the destination of the meat was not provided, this meat was put into an “Unknown” category.
2. The survey asked for the percentages of meat sent to the various UK destinations (including “wholesale trader for export”), but did not include an explicit direct export category for completeness. As a result, the percentage of meat directly exported could not be directly taken from the data and had to be inferred:
  - Where the sum of the distribution to UK destinations was less than 100%, and a breakdown of exports by EU/Non-EU/Unknown was provided, the remainder of meat was assumed to be directly exported.
  - Where the sum of the distribution to UK destinations was less than 100%, and no breakdown of exports was provided, the meat unaccounted for was allocated to an “Unknown” category.
  - Where comments were provided by the OV, these were interpreted to make a judgement about where the unaccounted-for meat should be allocated.
3. As mentioned above, the percentage of meat being exported directly was not explicitly asked for and so had to be inferred, while the percentage sent to a UK based wholesale trader for export was explicitly listed as an option. The survey asks for a breakdown of exports into 3 categories (“EU”, “Non-EU” and “Unknown”). The intention was for this to be referring to all exports (both direct exports and those sent to a UK based wholesale trader for export).

The guidance provided alongside the survey did specify that if meat is being sent to a wholesale trader for export that export information should be completed if known. However, the guidance did not explicitly state that in cases where meat was being both directly exported and being sent to a wholesale trader for export, the export breakdown provided should be referring to the sum of the two. It is therefore possible that in some cases, the OVs may have misunderstood what was required and so the export breakdown may only be referring one component or the other.

4. For the questions where percentages were asked for it appears as though some figures were rounded while others were not. As a result, the figures may for example sum to more than 100%. To resolve this issue percentages for individual slaughterhouses were rounded to the nearest whole percentage point.

5. While the breakdown by slaughter method was given according to the numbers of animals slaughtered, the breakdown by the destination of the resulting meat was given as proportions of the total tonnage. As a result, we are assuming that if, for example the same number of animals were slaughtered by two different methods then these two methods would be producing a similar amount of meat for consumption. Some reasons why this assumption may not hold in reality are:
- For the Shechita slaughter of cattle, calves, sheep and goats, the hind quarters are not used for Kosher consumption. For the question asking for the destination of the hind quarters no meaningful information was provided. Therefore it is unclear whether or not hind quarters are generally sent on for wider consumption.
  - Some methods of slaughter may tend to use smaller animals than others. Therefore, just because the same number of animals were slaughtered by two different methods, this does not necessarily mean that both methods are producing a similar amount of meat.

In addition to this if the same amount of meat from the same slaughter method was sent to two different destinations then this would equate to the same number of animals going to each destination. In reality this may not be the case as one destination may tend to get smaller animals than the other.

6. There are discrepancies in the numbers of animals slaughtered between this survey and the FSA's throughput charging database. However, these differences are small for almost all species, with differences of less than 1% between the two sources. The exceptions to this are goats and horses for which the numbers of animals slaughtered were small. The table below gives the number of animals slaughtered by species over the survey period according to both sources.

**Figure B1: A comparison of the reported number of animals slaughtered, between the FSA throughput charging database and the responses to the slaughter methods survey 2018**

Species	FSA throughput	Slaughter methods	
	charging database	survey 2018	% difference
Cattle	35,607	35,343	-0.75%
Calves	1,237	1,245	0.64%
Sheep	244,842	244,305	-0.22%
Goats	437	402	-8.71%
Horses	66	67	1.49%
Pigs	177,406	176,887	-0.29%
Poultry	19,051,392	19,112,681	0.32%
Turkeys	148,634	147,750	-0.60%



## Annex C: The countries exported to mentioned in the survey

Figure C1: Number of slaughterhouses mentioning each country as a destination for any of their meat

	Cattle	Calves	Sheep	Horses	Pigs	Broilers	Spent Hens	Turkeys	Other poultry
<b>UK Overseas Territories and Dependencies</b>									
British Virgin Islands						1			
Gibraltar						1		1	
<b>Europe</b>									
Austria			2						
Belgium	4		6	1	2				
Denmark	1				1				1
France	6		11	1	1	2			
Germany	2		8		1			1	1
Greece									1
Italy	3		4						
Netherlands	5	1	7		1	2	1		1
Poland	1	2			1				

Portugal			1			1			
Republic of Ireland	2		4		1				
Romania						1			
Spain	1		1			1			
Sweden	1		1			1		1	
Switzerland			1						
Ukraine						1			
Europe (country not specified)						1			
<b>North America</b>									
Canada	1								
USA					5				
<b>Caribbean</b>									
St. Lucia						1			
St. Vincent						1			
Trinidad and Tobago	1								

	Cattle	Calves	Sheep	Horses	Pigs	Broilers	Spent Hens	Turkeys	Other poultry
<b>Africa</b>									
Benin							1		
Congo							1		
Gabon	1						1		
Ghana	1								
Guinea	1								
Ivory Coast	1								
Liberia							1		
Libya									
Senegal	1								
South Africa	4				3	1			
Togo							2		
Africa (country not specified)								1	
<b>Asia</b>									
China					4	1			
Georgia									

Hong Kong	6				3	2	2	1	1
Japan					2				
Philippines	1				1	1			
Singapore	1				1				
South Korea					2				
Thailand	1								
UAE			1						
Vietnam						1			
<b>Oceania</b>									
Australia					1				
French Polynesia	1								
New Zealand					1				
<b>Total plants exporting</b>	<b>21</b>	<b>3</b>	<b>24</b>	<b>1</b>	<b>10</b>	<b>12</b>	<b>3</b>	<b>4</b>	<b>3</b>
<b>No. specifying countries</b>	<b>12</b>	<b>3</b>	<b>16</b>	<b>1</b>	<b>7</b>	<b>7</b>	<b>3</b>	<b>2</b>	<b>2</b>

**Figure C2: Number of slaughterhouses mentioning each country as a destination of their standard slaughter meat**

	Cattle	Calves	Sheep	Horses	Pigs	Broilers	Spent Hens	Turkeys	Other poultry
<b>UK Overseas Territories and Dependencies</b>									
British Virgin Islands						1			
Gibraltar									
<b>Europe</b>									
Austria									
Belgium	4		1	1	2				
Denmark	1				1				1
France	6		2	1	1	3			
Germany	2				1			1	1
Greece									1
Italy	3		1						
Netherlands	5	1	2		1	3			
Poland	1	2			1				
Portugal						1			
Republic of Ireland	2		2		1				
Romania						1			

Spain	1					2			
Sweden	1								
Switzerland									
Ukraine						1			
Europe (country not specified)						1			
<b>North America</b>									
Canada	1								
USA						5			

	Cattle	Calves	Sheep	Horses	Pigs	Broilers	Spent Hens	Turkeys	Other poultry
<b>Caribbean</b>									
St. Lucia						1			
St. Vincent						1			
Trinidad and Tobago	1								
<b>Africa</b>									
Benin							1		
Congo							1		
Gabon	1						1		
Ghana	1								
Guinea	1								
Ivory Coast	1								
Liberia							1		
Libya									
Senegal	1								
South Africa	4				3	1			
Togo							2		

Africa (country not specified)								1	
<b>Asia</b>									
China					4				
Georgia									
Hong Kong	6				3	1	2	1	1
Japan					2				
Philippines	1				1	2			
Singapore	1				1				
South Korea					2				
Thailand	1								
UAE									
Vietnam									
<b>Oceania</b>									
Australia					1				
French Polynesia	1								
New Zealand					1				
<b>Total plants exporting</b>	<b>21</b>	<b>3</b>	<b>11</b>	<b>1</b>	<b>10</b>	<b>7</b>	<b>2</b>	<b>3</b>	<b>2</b>
<b>No. specifying countries</b>	<b>12</b>	<b>3</b>	<b>4</b>	<b>1</b>	<b>7</b>	<b>4</b>	<b>2</b>	<b>1</b>	<b>1</b>



**Figure C3: Number of slaughterhouses mentioning each country as a destination of their Halal (stun and non-stun) slaughtered meat**

	Sheep	Broilers	Spent Hens	Other poultry
<b>UK Overseas Territories and Dependencies</b>				
British Virgin Islands				
Gibraltar				
<b>Europe</b>				
Austria	2			
Belgium	6			
Denmark				
France	10			
Germany	8			
Greece				
Italy	3			
Netherlands	6		1	1
Poland				
Portugal	1			
Republic of Ireland	2			
Romania				

Spain	1			
Sweden	1			
Switzerland	1			
Ukraine				
Europe (country not specified)				
<b>North America</b>				
Canada				
USA				
<b>Caribbean</b>				
St. Lucia				
St. Vincent				
Trinidad and Tobago				

	Sheep	Broilers	Spent Hens	Other poultry
<b>Africa</b>				
Benin				
Congo				
Gabon				
Ghana				
Guinea				
Ivory Coast				
Liberia				
Libya				
Senegal				
South Africa				
Togo				
Africa (country not specified)				
<b>Asia</b>				
China		1		
Georgia				

Hong Kong		1		
Japan				
Philippines				
Singapore				
South Korea				
Thailand				
UAE	1			
Vietnam		1		
<b>Oceania</b>				
Australia				
French Polynesia				
New Zealand				
<b>Total plants exporting</b>	<b>14</b>	<b>4</b>	<b>1</b>	<b>1</b>
<b>No. specifying countries</b>	<b>13</b>	<b>2</b>	<b>1</b>	<b>1</b>

**Figure C4: Number of slaughterhouses mentioning each country as a destination of their Shechita slaughtered meat**

	Broilers	Turkey
<b>UK Overseas Territories and Dependencies</b>		
British Virgin Islands		
Gibraltar	1	1
<b>Europe</b>		
Austria		
Belgium		
Denmark		
France		
Germany		
Greece		
Italy		
Netherlands		
Poland		
Portugal		

	Broilers	Turkey
<b>Africa</b>		
Benin		
Congo		
Gabon		
Ghana		
Guinea		
Ivory Coast		
Liberia		
Libya		
Senegal		
South Africa		
Togo		
Africa (country not specified)		
<b>Asia</b>		

Republic of Ireland		
Romania		
Spain		
Sweden	1	1
Switzerland		
Ukraine		
Europe - Country not specified		
<b>North America</b>		
Canada		
USA		
<b>Caribbean</b>		
St. Lucia		
St. Vincent		
Trinidad and Tobago		

China		
Georgia		
Hong Kong		
Japan		
Philippines		
Singapore		
South Korea		
Thailand		
UAE		
Vietnam		
<b>Oceania</b>		
Australia		
French Polynesia		
New Zealand		
<b>Total plants exporting</b>	<b>1</b>	<b>1</b>
<b>No. specifying countries</b>	<b>1</b>	<b>1</b>

**Figure C5: Number of slaughterhouses mentioning each country as a destination of their Halal slaughtered sheep meat, by stun and non-stun**

	Stun	Non-stun
<b>UK Overseas Territories and Dependencies</b>		
British Virgin Islands		
Gibraltar		
<b>Europe</b>		
Austria	2	
Belgium	3	3
Denmark		
France	5	6
Germany	4	4
Greece		
Italy	2	1
Netherlands	1	5
Poland		
Portugal	1	
Republic of Ireland	2	
Romania		

	Stun	Non-stun
<b>Africa</b>		
Benin		
Congo		
Gabon		
Ghana		
Guinea		
Ivory Coast		
Liberia		
Libya		
Senegal		
South Africa		
Togo		
Africa (country not specified)		
<b>Asia</b>		
China		
Georgia		

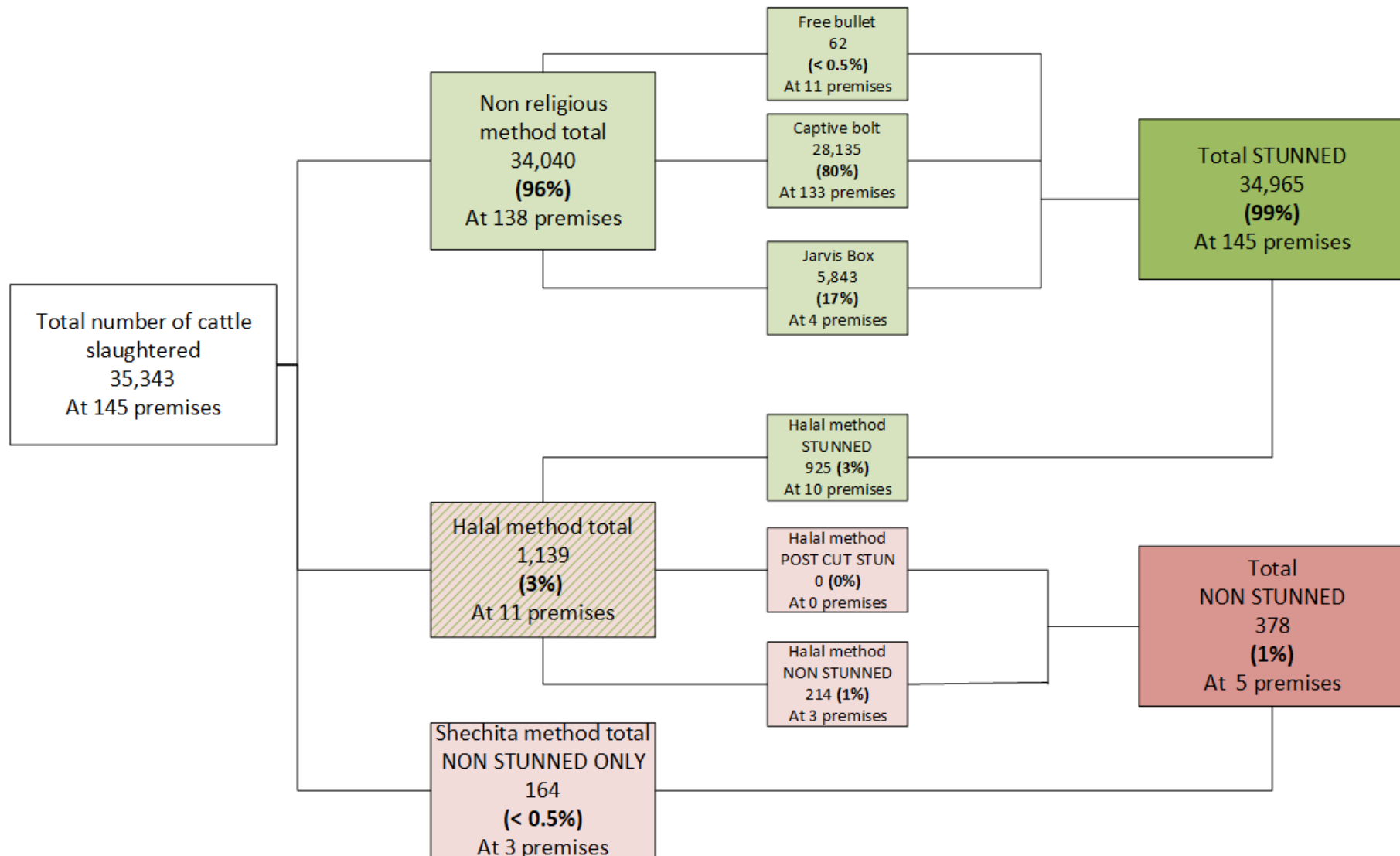
Spain	1	
Sweden	1	
Switzerland	1	
Ukraine		
Europe (country not specified)		
<b>North America</b>		
Canada		
USA		
<b>Caribbean</b>		
St. Lucia		
St. Vincent		
Trinidad and Tobago		

Hong Kong		
Japan		
Philippines		
Singapore		
South Korea		
Thailand		
UAE	1	
Vietnam		
<b>Oceania</b>		
Australia		
French Polynesia		
New Zealand		
<b>Total plants exporting</b>	<b>7</b>	<b>8</b>
<b>No. specifying countries</b>	<b>7</b>	<b>7</b>

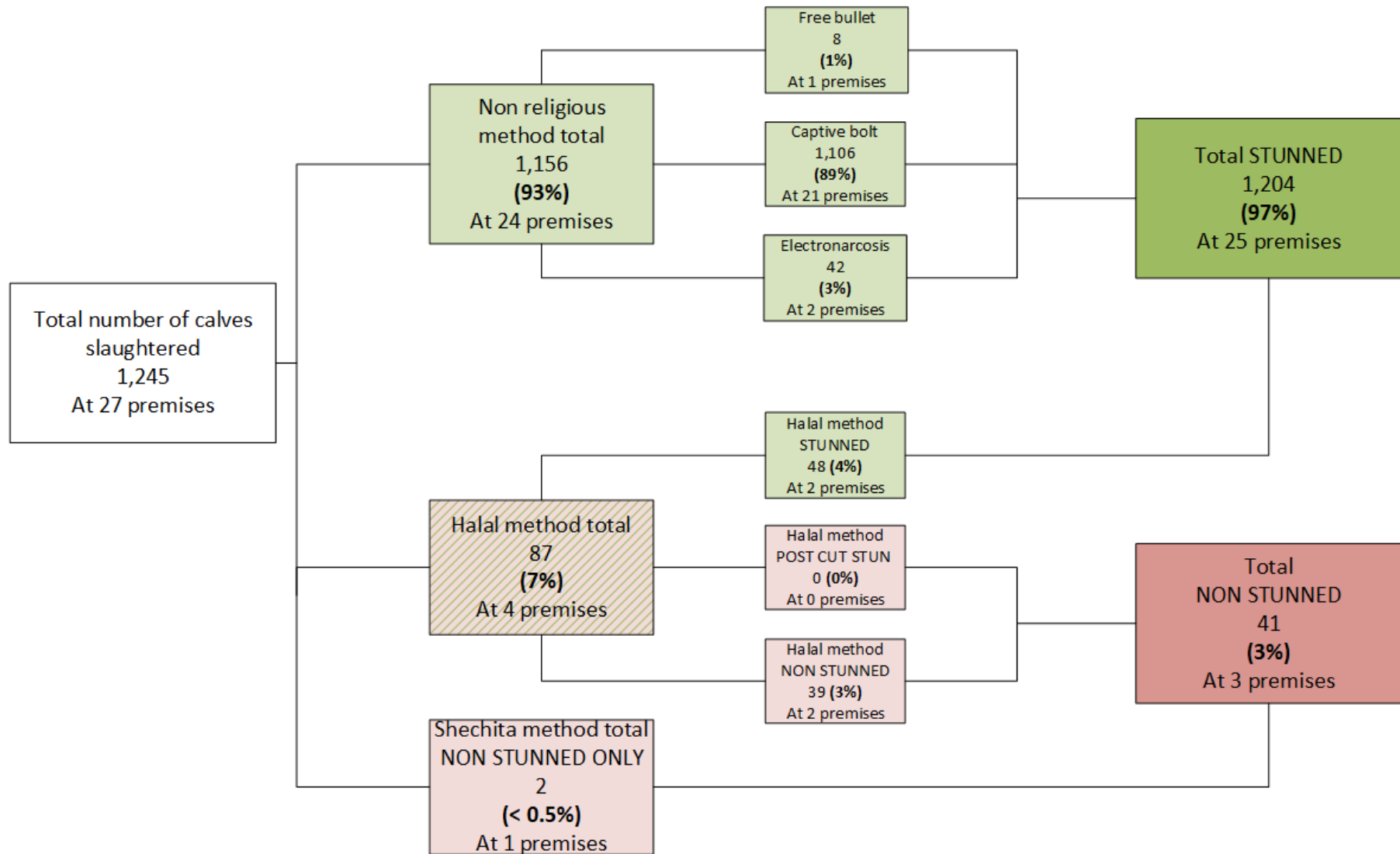


# Annex D: Flowcharts detailing each method of slaughter, by species

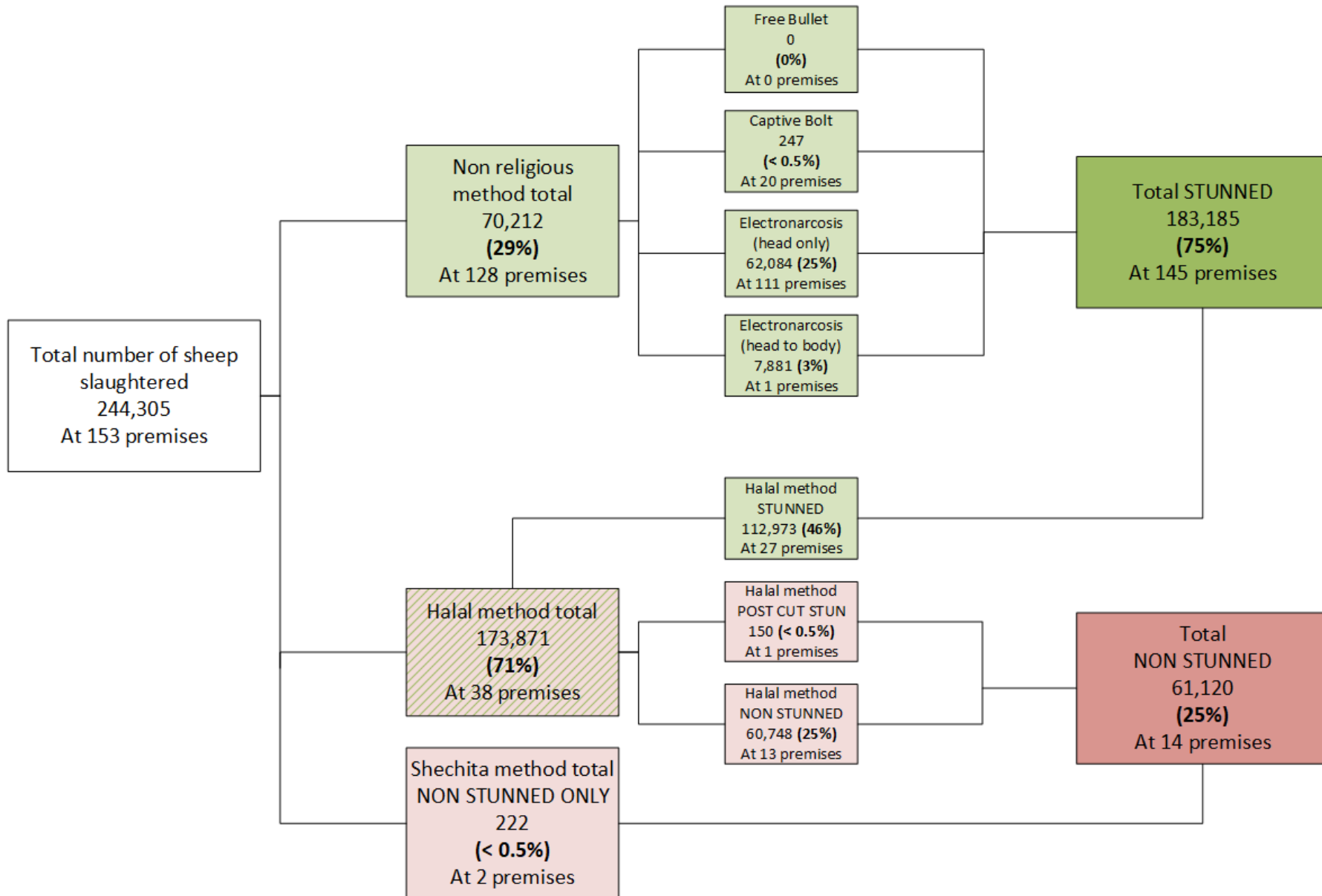
Figure D1: Slaughter methods for Cattle



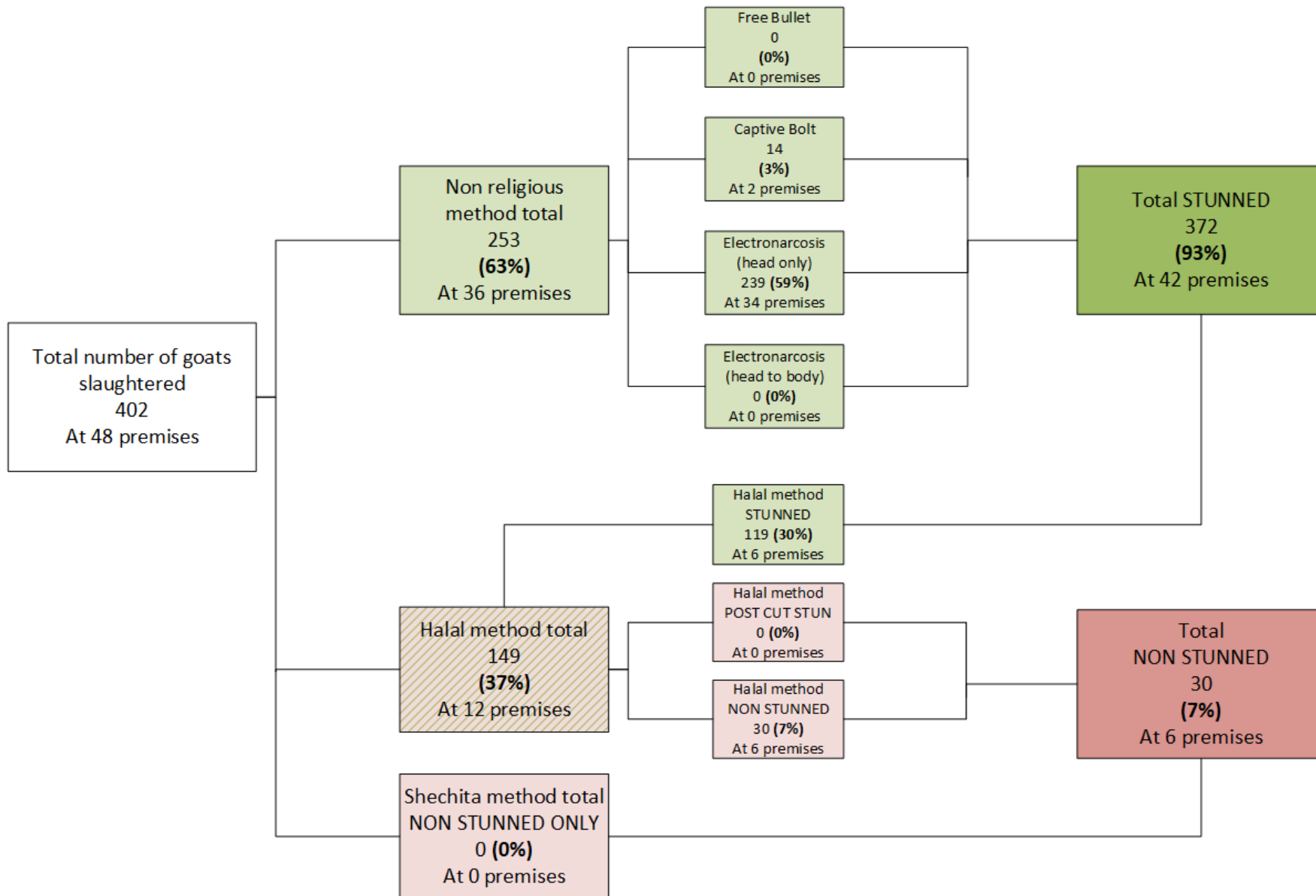
**Figure D2: Slaughter methods for Calves**



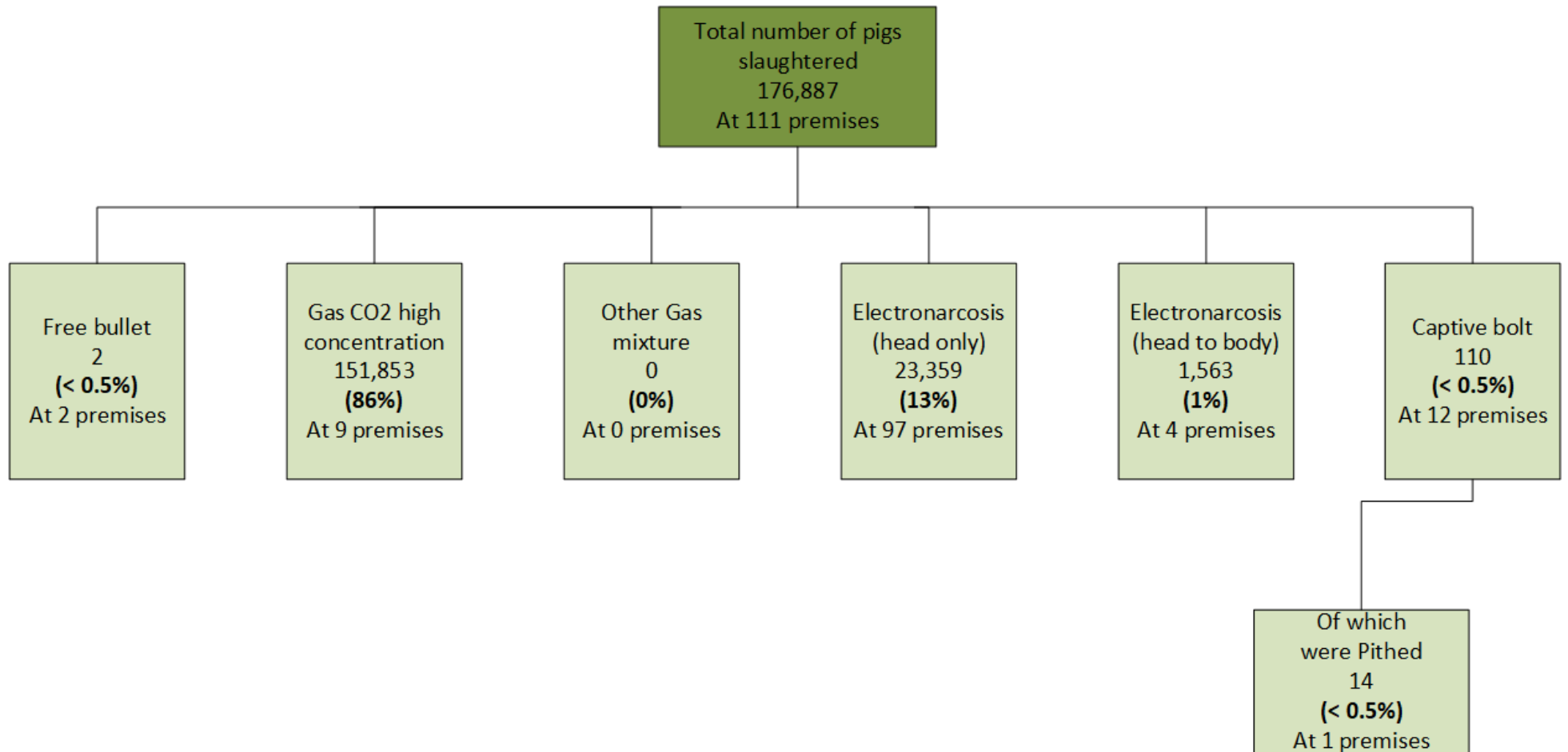
**Figure D3: Slaughter methods for Sheep**



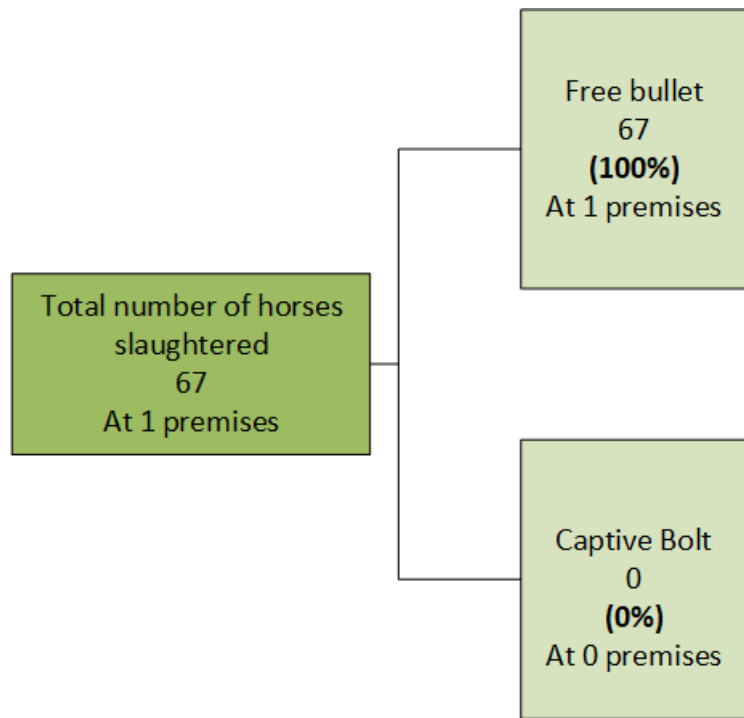
**Figure D4: Slaughter methods for Goats**



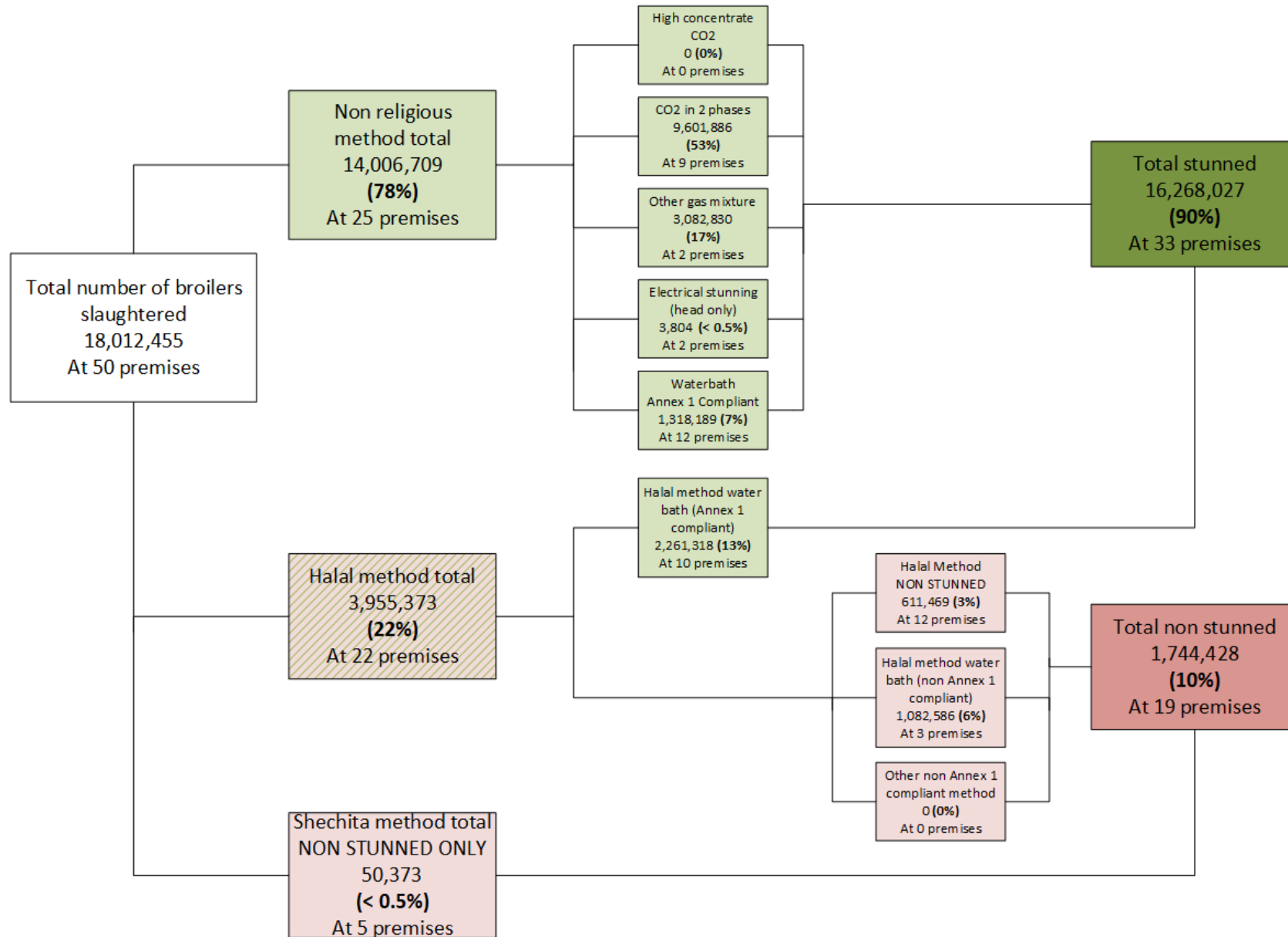
**Figure D5: Slaughter methods for Pigs**



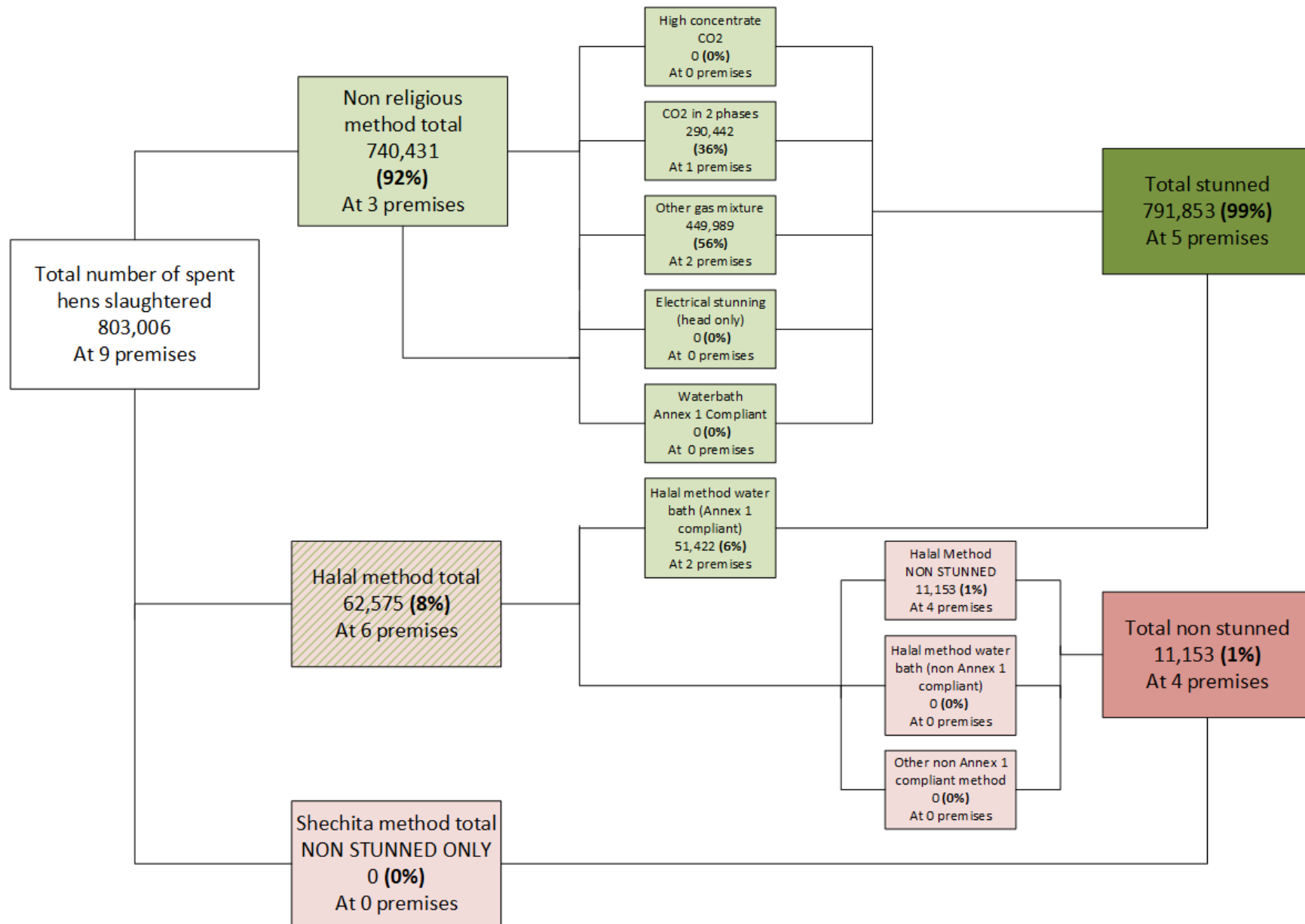
**Figure D6: Slaughter methods for Horses**



**Figure D7: Slaughter methods for Broiler Chickens**

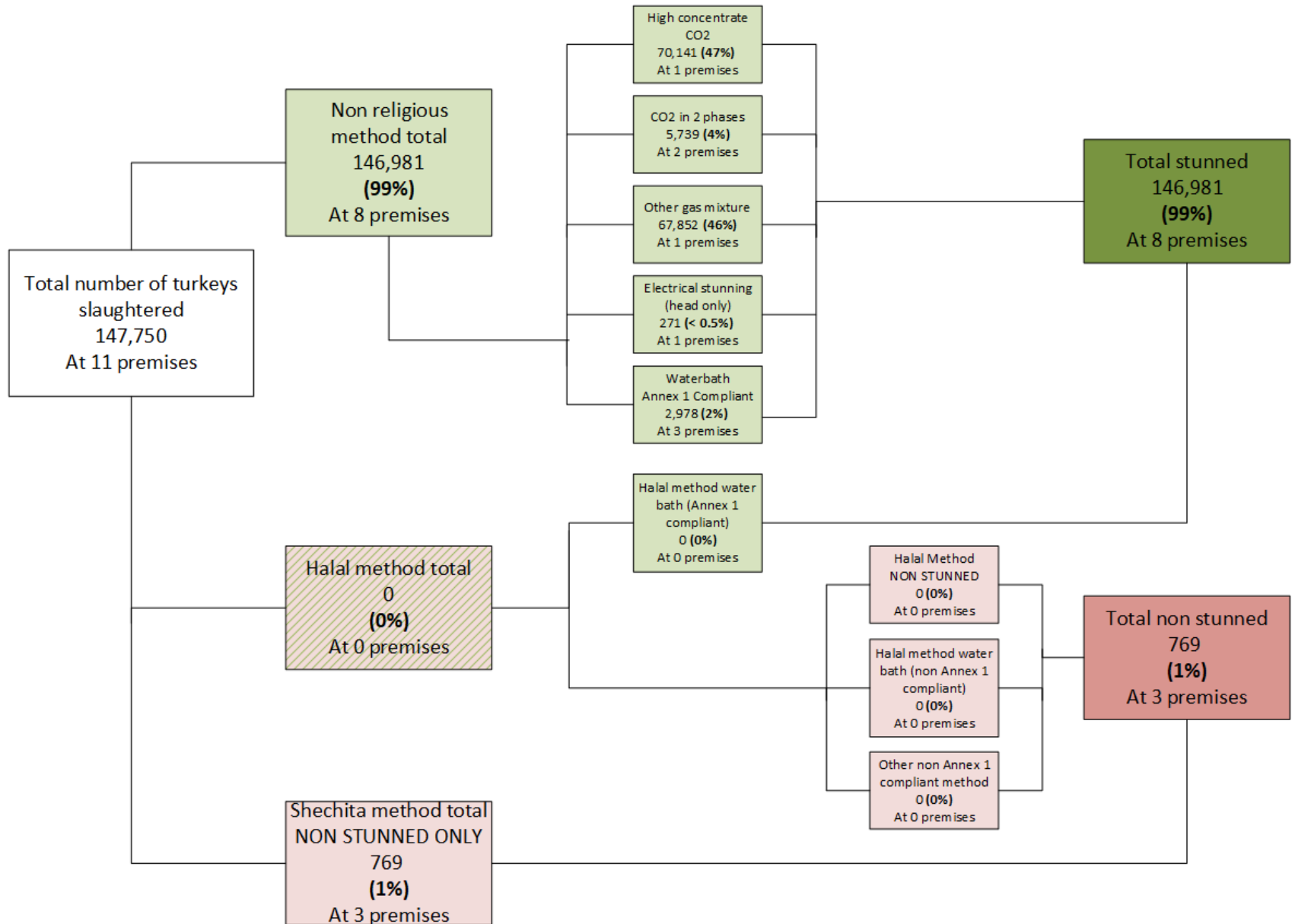


**Figure D8: Slaughter methods for Spent Hens**





**Figure D9: Slaughter methods for Turkeys**



**Figure D10: Slaughter methods for “Other Poultry”**

