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Operating procedures of pig slaughtering

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Foreword

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This document was prepared by Technical Committee ISO/TC 34, *Food products*, Subcommittee SC 6, *Meat, poultry, fish, eggs and their products*. [ISO/DIS 23781](https://standards.iteh.ai/catalog/standards/sist/300396ea-2102-4999-897f-5531db31-d1e6-23781)

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Operating procedures of pig slaughtering

1 Scope

This standard specifies the terms and definitions, pre-slaughter requirements, operating procedures and requirements of slaughtering, storage and other requirements.

This standard applies to slaughtering operation of pigs.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

CAC/RCP 58 *Code of hygienic practice for meat*

Terrestrial Animal Health Code, World Organization for Animal Health, (OIE TAHC)

ISO/TS 34700:2016, *Animal welfare management — General requirements and guidance for organizations in the food supply chain*

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

pig body

It refers to the remaining body after the pig is stunned and bled.

3.2

Inspection

In the context of animal slaughter and processing, inspection refers to ante and post-mortem inspection procedures to manage risks to animal health, animal welfare and public health.

3.3

demi-carcass pork

It refers to the pork with or without skin produced by longitudinally sawing (splitting) the pig carcass along the middle line of the spine into two halves.

4 Pre-slaughter requirements

4.1 Whenever possible, slaughterhouses should conduct a gap analysis and develop an animal welfare plan for all the operating procedures of pig slaughtering according to the ISO/TS 34700:2016, which could facilitate the implementation of any public or private sector animal welfare standards that meet at least the OIE TAHC.

4.2 The pigs which are ready for slaughtering shall be devoid of any health challenge. Special attention should be taken when dealing with delays in unloading them.

4.3 Animal welfare during pre-slaughter operations shall meet the requirements of animal slaughtering in Chapter 7.1. Introduction to animal welfare and Chapter 7.5 Slaughter of animals of *Terrestrial Animal Health Code*.

4.4 The pigs which are ready for slaughtering shall be allowed to rest. Feed shall not be provided during this period. Pigs should be provided with feed in lairage if the duration between loading and expected time for slaughter exceeds 24 hours. Drinking water should be available in lairage area.

4.5 The ante-mortem inspection shall be conducted in accordance with CAC/RCP 58. The pigs that can be sent for slaughtering shall pass the inspection.

4.6 When passing through the slaughtering raceways, the pigs shall be driven in order, but never be forced.

4.7 The body surface of pigs shall be visibly clean of excessive feces, dirt, etc.

5 Operating procedures and requirements of slaughtering

5.1 Restraint

5.2 Restraint should facilitate the correct application of the stunning method or bleeding equipment. Stunning

5.2.1 Stunning methods

Electrical stunning, gas stunning or captive bolt stunning should be applied to stun the pigs.

- a) Electrical stunning. Manual or automatic electrical current to the head and/or heart shall be applied to stun the pigs.
- b) Gas stunning. The pigs shall be driven into a chamber, tunnel or pit filled with either carbon dioxide, inert gasses (such as argon or nitrogen) or a mixture of carbon dioxide and inert gasses for stunning.
- c) Captive bolt stunning. Place the muzzle at right angles to the front of the animal's head, and then press the firing pin.

5.2.2 Requirements for effective stunning

5.2.2.1 After stunning, the pigs shall be unconscious. The pigs shall not be repeatedly stunned or dead after stunning. Unconsciousness should be monitored at different stages: immediately after stunning, just before neck cutting, and during bleed-out.

5.2.2.2 In the case of ineffective stunning or recovery, animals should be re-stunned immediately using a backup system.

5.2.2.3 No pig should be processed while they are still conscious or have the potential to recover consciousness.

5.3 Bleeding

5.3.1 After stunning, the pigs shall be immediately bled. The duration from stunning to bleeding should not exceed 30s and less 15s when use head only electrical stunning.

5.3.2 Point the knife tip to about 0.5cm~1cm to the right of the center of the throat, and stab in the direction of the heart. Then make a cross cut and keep moving the knife to cut the carotid artery and jugular veins. The heart shall not be pierced, and the esophagus and trachea shall not be cut off. The

length of the cut should be about 5cm. The duration of bleeding shall be no less than 5 min. During the bleeding process, the pigs shall not choke on blood or have congestion.

5.3.3 The duration from bleeding to offal removal should not exceed 30 min. The duration from bleeding to pre-chilling should not exceed 45 min.

5.4 Scalding and dehairing

5.4.1 Either steam or hot water shall be applied for scalding. The scalding temperature and time shall be adjusted according to the size and breed of the pigs and season. The scalding methods are as follows:

- a) Steam scalding. The temperature in the steam scalding tunnel should be adjusted to 59°C ~62°C and the time should be adjusted to 6min~8min.
- b) Hot water scalding. The water temperature of scalding tank should be adjusted to 58°C~63°C, and the time should be adjusted to 3min~6min. There shall be a device for overflowing and replenishing clean water. The water in the scalding tank shall be changed per day based on the hygiene status. During the scalding process, the pig body shall not sink to the bottom, over scalding and under scalding shall be avoided.

5.4.2 Dehairing equipment shall be applied for dehairing. The pig body may have minimal hair, but should not have mechanical damage and peeled skin after dehairing.

5.5 Hanging

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5.5.1 Both hind legs of the pigs shall be lifted and a pierce shall be made distal to the hock without cutting off the ligament which connects the hock and shin bones. The length of the cut can be 5cm~6cm.

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5.5.2 After both hind legs were hooked, the pig body shall be lifted and transported to carcass processing line.

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5.6 Pre-drying

The remaining hair attached to the body surface which are otherwise plucked during the dehairing process and water on the pig body should be removed manually with brush or by using pre-drying equipment.

5.7 Singeing

Either blow torch or singeing equipment shall be applied to remove the remaining hair on the surface of pig body.

5.8 Cleaning and polishing

The remaining hair and ash shall be removed manually or by using polishing equipment, and the pig body shall be cleaned using water.

5.9 Bunging

The knife shall pierce the surrounding area of the anus and make a circular cut around it. The end of the rectum shall be bagged and vertically placed into the pelvis. Bunging can also be done by aiming and inserting the bunging equipment tip into the anus. Then activate the switch to cut off the rectum from the pig body with its circular blades. The surrounding area of the anus shall have as little meat as possible. The end of the rectum shall be separated from the sphincter. The rectum shall not be cut during this process.

5.10 Eviscerating

5.10.1 Opening the thoracic cavity and abdominal cavity. This process shall be done by making a cut from the bleeding area along the middle line of the chest to split the sternum. Then the middle line of the belly should be cut to open the abdominal cavity. During this process, the male reproductive organs shall be removed and the offal shall not be pierced.

5.10.2 Removing the rectum and bladder. This process shall be done by grabbing the rectum and cutting off the mesentery and ligament. Then the bladder and female reproductive organs should be removed without piercing the rectum.

5.10.3 Removing the intestines and stomach. This process shall be done by grabbing the mesentery and the greater curvature of the stomach, then cut off the mesenteric tissue, intestines and stomach at the location which is close to the kidneys. The ligament and esophagus shall be cut off too. The removed offal shall be put into a container for inspection. During this process, the intestines and stomach shall not be pierced.

5.10.4 Removing the heart, liver and lungs. This process shall be done by grabbing the liver and cutting the diaphragm on both sides. Then the ligament which connects the thoracic cavity and the neck should be cut off and the esophagus, trachea, heart, liver and lungs should be removed. The removed offal shall be put into a container for inspection. During this process, the offal shall not be damaged and the thyroid gland shall be removed.

5.10.5 Washing the thoracic cavity and abdominal cavity. The thoracic cavity and abdominal cavity should be washed immediately after removing the offal. Any blood clots, attached hair and other contaminant should be cleaned.

5.10.6 Removing tail. Tail may be removed at any point of the evisceration or during the cutting process.

5.11 Splitting

The carcass shall be split into two parts along the middle line of the spine. The leaf fat and kidneys shall be removed from the demi-carcass pork after the splitting process. Any blood stain and attached hair shall be removed.

5.12 Head and feet removal

5.12.1 Head removal

The head shall be removed by using head cutter or knife to separate the skull from the cervical vertebra at the foramen magnum. The head may be removed before splitting.

5.12.2 Feet removal

The fore feet shall be removed at the wrist joint and the hind feet shall be removed through the hock joint. The cross section of cut shall be neat. The feet may be removed during the slaughter or cutting process.

5.13 Trimming

The carcass should be trimmed of all visible contamination and defects.. The adrenal glands and remaining thyroid gland shall be removed.

5.13.1 The heart, liver, lungs, spleen, stomach, intestine, pancreas and other offal shall be separated and sorted according to the demand.