

## How does stunning benefit producers?

In addition to significant welfare improvements, correct stunning has been demonstrated to improve flesh quality. Besides the premium for animal welfare accreditation, stunning can benefit the industry by improving appearance (by reducing 'soft' flesh, bruising and scale loss) and shelf-life when compared to traditional harvesting systems. Mechanical/electrical stunning also improves the working conditions for staff and can reduce the chance of repetitive injuries.

## The Humane Slaughter Association's (HSA) view

While animals continue to be reared and slaughtered for food it is important that every effort is made to protect their well-being. The HSA seeks humane methods of slaughter. This means that all animals without exception should be properly stunned and rendered unconscious before being bled. The Association also believes that those handling and slaughtering fish must be fully trained and competent to take responsibility for the fish in their care.

## What does the HSA do?

The HSA is the only registered charity which specialises in the welfare of food animals throughout the marketing and slaughter processes. It is an independent, organisation beholden to neither government, trade nor emotional pressures and is thus able to play an unbiased role in promoting the humane treatment of food animals. It achieves its aim by lectures and practical demonstrations of stunning methods; by publishing educational material and funding research projects.

## How can you help?

The HSA depends upon voluntary subscriptions, donations and legacies for its income. Support is needed from both individuals and corporate groups so that the Association may continue to play an effective role in the welfare of food animals.

The annual subscription for individual members is £15, for societies and corporate groups £20 or £30 and for those in full-time education £5.

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## Humane Harvest?



## Should we be worried about the way fish are killed?

Every year millions of fish are farmed around the world for human consumption. Recent scientific evidence shows that fish react to perceived painful actions in a manner similar to mammals. Furthermore, under certain circumstances, fish exhibit responses much like the stress responses in other animals, suggesting they too can suffer. The time leading up to, and during, killing can be particularly stressful, as fish are handled and manipulated more than they may be used to. Some traditional killing methods cause suffering and are inhumane and unacceptable.

## Are fish protected by the law?

Under UK law, all animals, including fish, should be spared avoidable suffering and pain during slaughter. Fish should therefore be handled in a manner that minimises stress and should not be subjected to unnecessary pain during this time.

## How are fish killed?

The killing of fish (often referred to as 'harvesting') can be split into five stages: grading, fasting, crowding, transport and killing. Grading occurs on a number of occasions throughout the life of fish, to ensure they are kept in groups of similar size. Fasting for 72 hours serves to clear food and waste materials from the fish gut. Crowding of fish reduces the area available and enables them to be lifted out of the water more easily. The first three stages are carried out by farm staff at the growing site. The next stage, transport, is carried out by specialised staff. The final stage, killing, is either done by farm staff or a dedicated killing team. Killing teams will work at one dedicated site or travel around the farms. Traditional methods of killing fish include: removal from water; exposure to extreme cold; exposure to carbon dioxide or bleeding. These methods take several minutes for the fish to become insensible and can cause suffering. Recently developed methods involve stunning and killing the fish. This can either be two separate procedures of stunning and killing or one action that stuns and kills. Fish can be stunned/killed with either electricity, anaesthetics or a percussive blow to the head.

Harvesting of Farmed Fish

### **Can fish be killed humanely?**

Staff training, planning and utilising the fishes natural behaviour will all help optimise the welfare of fish during killing. Good husbandry and constant monitoring and control of the surrounding conditions (ie maintaining oxygen and carbon dioxide levels) during crowding and transport, will also reduce potential welfare problems during harvest.

Stunning fish prevents stress and pain at killing. Stunning is any process that rapidly causes insensibility to pain or, if slow acting, induces insensibility in a manner that does not cause the animal to suffer. Stunning may not kill the fish; it is therefore important that it remains insensible until death occurs. When a stunning method does not kill the animal, a separate killing process should be used, so that the animal dies before recovering consciousness.

### **Where are fish killed?**

Fish are farmed in either onshore or offshore cages or tanks; therefore harvesting locations vary considerably, but will either be at central killing stations on the mainland or on the farm where the fish have grown. Historically, fish were always harvested at the site where they were grown. However, following transport improvements and business mergers, some of the larger companies now have a dedicated harvest station to which all the fish are transported for slaughter.

### **Transport**

As mentioned above, some fish (mainly salmon) are transported to a central harvest site. This is done using large boats known as wellboats. Fish are pumped or brailled (lifted using a large net, which should be lined to reduce the distress experienced by the fish) from their cage onto the wellboat. Once on the boat, fish are kept in aerated tanks with strict controls on the water quality. Levels of oxygen and carbon dioxide are constantly monitored so the quality of the water does not become unacceptable to the fish. The wells also contain cameras to monitor the behaviour of the fish.

### **Crowding**

In order for fish to be lifted out of the water effectively they need to be brought together: this is known as crowding. As crowding brings fish very close together it can be an extremely stressful time, as they try to escape from each other. As this process can be so stressful and also physically damaging, the time in which fish are crowded should be limited and should never exceed two hours.

### **Humane stunning**

For a method of stunning to be humane it must render the fish unconscious without fear or pain and that condition must last until death occurs. This can be done by either percussive or electrical stunning. Humane stunning methods can also kill the animal if they are of sufficient magnitude to disrupt brain function until the fish dies (usually from lack of breathing). During the slaughter process the time the fish are held out of water can be minimised by applying the stun in water, in the case of electrical and chemical stunning. In the case of new percussive stunners by exploiting the fishes natural behaviour can be exploited by encouraging them to swim into the stunner. At present there are commercially-available electrical and percussive stunners for salmon and trout. Further research is underway for these and other species to improve animal welfare, productivity and quality with these and new stunners.

### **Percussive stunning**

Percussive stunning is achieved by applying a targeted blow to the skull of the fish on a specific area above the brain. If sufficient force is correctly applied, there is immediate disruption of normal brain function making the fish insensible for some time. A killing procedure, such as bleeding is usually required since percussive stunning can be reversible. Percussive stunning may be done by a hand-held club (priest) for small numbers of fish or by machine when large numbers are killed. This method is suited to large round fish such as large trout and salmon.

### **Electrical stunning**

In electrical stunning an electrical current is passed through the brain of the fish to disrupt normal brain function and make the fish immediately insensible to pain. This may be done by hand-held electrodes for small numbers, or by immersing the fish in an electrified water bath. It can be used for both small and large fish. When sufficient current is applied for an adequate duration, the stun is irreversible and therefore an extra killing step may not be required.

### **Anaesthetics**

Chemical stunning is achieved by administering a food-safe anaesthetic such as iso- Eugenol (a similar compound to clove oil) to the fish in sufficient amounts to make them insensible to pain. Chemical stunning has not been licensed and is not practised in the UK.