

HKSCAN'S SPECIES-SPECIFIC OPERATING PRINCIPLES

BROILER PRODUCTION

HKScan's poultry production farms are located in Finland, Denmark and Estonia. All poultry production at HKScan is carried out as contract farming in close cooperation between HKScan and farmers, or as own production in Estonia.

We offer guidance, training and animal healthcare services to our contract producers. In Finland, our chicken product brand is Kariniemen®, in Denmark it is Rose® and in Estonia it is Tallegg®. The number of broilers slaughtered in HKScan's slaughterhouses in 2019 was 93 million.

PRACTICES IN ANIMAL HUSBANDRY

The breed used in conventional poultry production is Aviagen Ross 308 in all countries. The breed has its origins in Sweden.

Birds are reared indoors, in separate chicken houses where the floor is covered with fresh litter, most commonly peat. The housing conditions are carefully monitored and controlled at least twice a day, both based on sensory analysis and meters. Whole grain is generally added to feed for enrichment and welfare, as it is good for development of the gizzard. The maximum rearing density in Finland and Denmark is 42 kg/m² and in Estonia it is 39 kg/m². Rearing is operated with the principle, "all in, all out". Thinning¹ is not practiced in Finland or Estonia and the batch of birds is transported to slaughter as one group. In Denmark, thinning can be practiced occasionally. The used litter is removed, and the facilities are thoroughly washed, disinfected and dried carefully between every batch. Biosecurity is at a high level at production houses, which among other rearing practices, results in healthy animals and good animal welfare, preventing outside pathogens from entering production houses and markedly decreasing the need of antibiotic treatments.

PHYSICAL ALTERATION PRACTICES

While beak trimming is allowed and practiced commonly in many countries, it is not practiced at HKScan's production farms in any of the HKScan's operating countries.

In Finland, beak trimming has been forbidden by national law since 1986. In Estonia, national law allows it in certain conditions, but beak trimming is not practiced at all, by HKScan's own decision. Denmark's national law prohibits the beak trimming of broilers. However, under certain conditions, Danish parent birds may be trimmed shortly after hatching. As HKScan does not view beak trimming as a good practice, the company has started negotiations with the Danish supplier, aiming to find such housing conditions and practices that will allow the beak trimming of parent stock to be halted.

ANTIBIOTICS AND HORMONES

The use of antibiotics at farms is strictly controlled and supervised by authorized veterinarians. No hormones or other growth promoting treatments are used in broiler production. In Finland, broiler flocks have been so healthy that no

antibiotic treatments have been used since 2009. In Denmark and in Estonia, the use of antibiotics is carefully supervised and followed. In primary production, work is done so that medicines are needed as little as possible.

USE OF COCCIDIOSTATS AS FEED ADDITIVES

Coccidiosis is caused by a protozoa (Eimeria) found in poultry production worldwide. The microscopic parasites cause intestinal tract infection, that can lead to intestinal lesions, diarrhoea, poor weight gain, poor feed conversion and, in some cases, death. Attempts to eradicate coccidia have been unsuccessful. In the European Union, coccidiostats are registered as feed additives.

ANIMAL WELFARE NON-CONFORMITY

There were no illegal offences resulting in a fine or penalty within our broiler meat production operations in 2019. We follow our methods and practices and, in any case of any deviation, take corrective actions immediately.



¹More information about the thinning and welfare of broiler chickens can be found from RSPCA's recommendation: a major welfare improvement for chicken linked to safer meat for customers, RSPCA bans 'thinning', which has been linked to higher rates of campylobacter.

PORK MEAT PRODUCTION

HKScan's pork is mainly produced by contract farmers, and partly produced at HKScan's own production facilities in Estonia. HKScan's producer services include various development programs for the farming community of the Group.

The focus of the services is to optimize the productivity of the pork chain by providing area guidance (management, feed, genetics, building, veterinary services) and trainings. Another key focus is animal health and welfare - healthy and satisfied animals are also productive. Within the pork chain, farms specialize in either multiplying farms in which the next generation of sows are reared, sow farms where the piglets are reared, finishing farms, or even a combination of these.

In Finland, our pork meat product brand is HK®, in Sweden it is Scan® and in Estonia it is Rakvere®. The number of pigs slaughtered at HKScan's slaughterhouses in 2019 was more than 1.8 million.

GENETICS

The sow line genetics used in the HKScan's pork chain is mainly based on the Topigs Norsvin and Danavel sow lines. In Finland, the majority of the sows are hybrids. In Estonia, the sows are both hybrids or rotational crosses (sic-sac). In Sweden, both hybrids and rotational crossings are common. In Finland and Estonia, the Duroc is used as a sire line, and in Sweden, the Hampshire is used.

PRACTICES IN ANIMAL HUSBANDRY

The pigs are housed in well-insulated buildings that are designed and constructed for pigs, and adhere to strict regulations. These regulations differ by country, and as a result, there exist different housing systems within the HKScan pork chain.

On average, sows first give birth at one year of age. After a gestation period of 115 days, 14-16 piglets are born. On average, a sow has a birth interval of 155 days, which means that she gives birth 2.35 times per year. The piglets stay, on average, four weeks with their mother. After weaning, the piglets are housed in nursery sections, where they remain until they are around 30 kg. Most of the piglets reach this weight at the age of 10-11 weeks. At 30 kg, the piglets are transported to the finishing farms where they stay until they reach 115-120 kg. The finisher pigs reach slaughter weight within five and a half to six months.

The sows are housed according to local regulations, which are in line with EU standards. In Finland and Estonia, sows are housed in individual stalls from weaning until four weeks after insemination, and from one week before birth until weaning. After the sows are tested for pregnancy, they are moved to the gestation area, where they can move freely for the remainder of the gestation period. According to the Swedish legislation, the sows can move around freely during the insemination, gestation and farrowing phases.

In free-farrowing, the sows are able to move and act according to their natural behaviours. However, piglet mortality might rise, and piglets can suffer, for example, from gangrenes in ears and tails, as the sow can trap them. In contrast,



the farrowing pen is often cleaner in the traditional cage housing, where the sow cannot move as much. From an animal welfare point of view, there are pros and cons with both systems. HKScan will continue to further develop animal welfare and explore the possibility of free-farrowing in countries other than Sweden.

At HKScan's production farms, tail-biting is prevented by offering good living conditions and care, such as sufficient space, enrichment materials, high-quality feed and preventive health care.

The nursery and finisher pigs are fed by both dry and liquid feed. Piglets are fed by dry feed automats or by liquid feed in troughs. The majority of the finishers are fed liquid diets in long troughs. Diets consist of local grains and by-products from ethanol and dairy processing. During the nursery period, piglets often receive two to three different diets so that the nutritional needs of each particular phase can be fulfilled. Finishers also often get two to three different diets.

Together with its partners, HKScan continuously develops the feeding of animals. In recent years, focus has been on the use of local protein sources such as beans, meat quality enhancing feeding (rapeseed pork) and gut health supporting feed concepts for sows and piglets. Pig feed consists of local grains and protein plants, co-products from the food industry, and soy. The feed mixture is varied during the different production phases, aiming towards the best growth and welfare for animals.

PHYSICAL ALTERATION PRACTICES

Tail docking is prohibited in Finland and in Sweden. Tail docking is allowed in Estonia only if animal welfare is under threat by tail biting.

Entire boars produce an unpleasant boar taint within meat that consumers are not accustomed to. Entire males also fight more often than castrated pigs, which causes them to get wounds, pain and stress. For this reason, all male piglets are castrated surgically in Finland by the farmer during their first week of life. In Finland, producers of HKScan have been required to use pain medication prior to castration since November 2011. All male pigs are castrated in Estonia on the third day after birth, and pain medication is given.

In Sweden, all castrations of male boars have been forbidden without local anaesthesia since 2016. Other alternatives include vaccination against boar taint or raising boars to slaughter. Only farmers who have received appropriate training are allowed to perform castrations.

Teeth-grinding is not routinely performed in Finland. Teeth-grinding is only allowed if a piglets' sharp teeth cause a sow problems. The piglets cannot be older than seven days at the time of grinding and it is required by law that the farmers first assess and improve the conditions and management of the pigs. Teeth-grinding is not performed in Sweden and Estonia.

ANTIBIOTICS AND HORMONES

In all of the HKScan's pig production countries, the use of antibiotics in the pork chain is strictly supervised by author-

ized veterinarians and no antimicrobial treatments are used to promote pig growth. The use of antimicrobials is at a low level in comparison with the European and global practices.

Penicillins and Tylosin are the most used groups of antibiotics in both finisher pigs and weaned piglets. The use of third- and fourth-generation cephalosporins, fluoroquinolones and extended spectrum or long-acting macrolides are only allowed based on microbiological diagnosis, bacterial sensitivity testing and, never as a first-line treatment.

The use of hormones for the purpose of growth stimulation is forbidden in all HKScan's operating countries. Hormones can be used if prescribed by a veterinarian for the induction of parturition, treatment of uterine inertia, stimulation of milk ejection, estrus synchronisation or the treatment of fertility problems.

ANIMAL WELFARE NON-CONFORMITY

There have been no illegal offences resulting in a fine or penalty within HKScan's pig production operations in 2019. We strictly follow our methods and practices and, in any case of any deviations, take corrective actions immediately.

BEEF PRODUCTION

At HKScan, beef production is carried out as contract farming, in close cooperation between HKScan and producers. We provide guidance, training and feeding concepts to our farming community, and, in some countries, animal healthcare services.

Our contracted beef cattle rearing farms are located in Finland and Sweden. In Finland, our beef product brand is HK[®] and in Sweden it is Scan[®]. In Estonia, all cattle slaughtered by HKScan are purchased from well-known suppliers, and products are sold under the brand Rakvere[®]. The number of cattle slaughtered at HKScan's slaughterhouses in 2019 was more than 200,000.

CATTLE BREEDS

In Finland, of the total of slaughtered cattle, 81.8 per cent is from dairy breeds and 18.2 per cent is from beef breeds. In Sweden, there is no availability for these kinds of statistics at the moment.

CATTLE BREEDS	DAIRY BREEDS, 81.5%
Finnish Ayshire	39.2
Holstein	38.6
Crossbreeds	20.3
Original Finnish cattle	1.2
Other	0.7

CATTLE BREEDS	BEEF BREEDS, 18.5%
Hereford	34.2
Aberdeen Angus	24.3
Charolais	17.1
Limousin	13.2
Simmental	8.6
Other	2.6

PRACTICES IN ANIMAL HUSBANDRY

HKScan's contract rearing farms in Finland and Sweden are committed to strict instructions regarding rearing, feeding, healthcare and biosecurity. Beef cattle are reared in cow-sheds and cold loose barns, as well as in pens and pastures. Beef breed cattle calves are born on suckler cow farms, where they graze with their mothers up to the age of approximately six months. After this, the calves are relocated to specialized rearing farms or remain at their birth farm. The finishing of beef breed cattle is always performed in cold loose barns with litter. Calves born on dairy farms are relocated to a calf-rearing or finishing farms between the age of two weeks and three months. The teenage calves from a calf rearing farm are relocated to the finishing farm at the age of six months.

The pen laying area for young calves under two months has a solid floor, which is soft and well littered. Fattening bulls and heifers are housed in warm barns or in cold loose barns on a solid or partly slatted floor, mostly in groups of 10-30 bulls. In cold loose barns, bedding and peat or straw is used as litter. At the Finnish Quality Farms, beef breed cattle bulls and heifers are always housed in cold loose barns with peat or straw littered ground. For Quality Farms, it is required that there is a soft laying area covered with a perforated rubber mat or litter.

There has been a lot of discussion about the lying comfort and welfare of bulls on solid floor housing. HKScan recommends that farmers increase the use of rubber mats as floor coatings. Covering floors with perforated rubber mats enhances the wellbeing of bulls, reducing leg problems. As a result, the use of rubber mats has increased quickly. All new housing building plans now include a laying area with soft bedding. According to Swedish legislation, a slatted floor with no rubber mats is only allowed for calves under four months in buildings taken into use before 2010. In all new housing buildings, the floor must be solid or bedded with mats.

PHYSICAL ALTERATION PRACTICES

Many physical alterations that are common to cattle production animals are not in use in Finland or Sweden. The only procedure allowed is the disbudding of calves in dairy cattle and at calf-rearing farms under certain conditions. Bull calves are normally not castrated, and tail docking is forbidden.

If young bulls are castrated, the operation is only allowed to be performed by an authorized veterinarian under proper anaesthesia. Castration might be done to bulls that are used as "teaser bulls" or which are kept on pasture with female animals. Tail docking is not necessary, and it has never been used as a preventive measure in Finland or in Sweden. If needed, such as in the case of an injury or inflammation, tails can be docked by a veterinarian, under anaesthesia and pain relief.

According to Finnish legislation, disbudding of calves or dehorning is only allowed for calves under four weeks if performed by a competent person. Disbudding of calves is common because horns are a safety risk for animals and humans. It is known that the operation is painful to the calves and, therefore, HKScan recommends that it should only be done by a veterinarian and only with the use of sedatives, local anaesthesia and painkillers. This is a mandatory requirement for HKScan's Quality Farms and calf-rearing units. According to Swedish legislation, the operation must be performed by a veterinarian with the use of sedatives, local anaesthesia and painkillers.



ANTIBIOTICS AND HORMONES

Antibiotics, anti-inflammatory drugs and hormones are only used for veterinary reasons. The use of antibiotics on farms is strictly supervised by authorized veterinarians and no antimicrobial treatments are used to promote the growth of cattle.

Use of prophylactic antimicrobials is forbidden at HKScan's fattening bull and calf-rearing contract farms. Use of fluoroquinolones and the use of third- and fourth-generation antibiotics is not allowed on Quality Farms and calf rearing units. The extended spectrum or long acting macrolides can only be used based on microbiological diagnosis or bacterial sensitivity testing, but never as the first line of treatment. The producers of HKScan are committed to following the guidelines of HKScan and national food safety authorities.

Legislation in Finland and Sweden does not allow the use of hormones for the purpose of growth stimulation. Hormones are used by veterinarian's prescription for cows, mostly for dairy cows, for example, as a treatment for fertility problems. Hormones are very seldom used for beef cows, and, if occasionally used, the purpose is to stimulate milk ejection or to treat a uterine inflammation.

ANIMAL WELFARE NON-CONFORMITY

There were no illegal offences resulting in a fine or penalty within our own beef cattle production operations in 2019. We strictly follow our methods and practices and, in case of any deviations, take corrective action immediately.

LAMB MEAT PRODUCTION

The majority of HKScan's lamb production is based on contract farming, as well as close cooperation between HKScan and family farmers. We provide guidance and training to our contract farms.



HKScan has sheep and lamb production in Sweden only, where lamb meat is sold under the Scan® brand. HKScan cooperates with approximately 2 500 lamb producers in Sweden, and there are more than 100 000 animals reared. The number of lambs slaughtered at HKScan's slaughterhouses in 2019 was more than 100,000.

LAMB BREEDS

Our lamb breeds in Sweden are most commonly either landraces from Sweden or Finland or meat breeds imported from other countries. Landraces include Gotland sheep, fine-wool sheep and rya sheep, while meat breeds include Texel, Leicester, Oxford, Suffolk and Dorset Horn. It is also common to cross different breeds in order to combine their good qualities. All breeds are used to produce lamb meat. Gotland sheep, after the characteristic curly fur, is the largest of the breed.

PRACTICES IN ANIMAL HUSBANDRY

Housing buildings are not heated and have open space. This ensures that the lambs stay in groups and get enough light and fresh air. Older stables, previously used for dairy production and pig production, are often used. It is not very common to have newly-built stables for lamb production.

The lambs live in groups, have straw beds and can move freely. A slatted floor is not allowed for sheep and lambs in Sweden. The practices concerning feeding space, moving area and the ability to get fresh water are defined by law.

The age of lambs at slaughter varies between three months and 12 months. Lambs born during the winter stay indoors with more concentrated feeding. As a result, they grow faster

than lambs born in the spring and are ready for slaughter only after three to four months. Lambs born in the spring always graze outside, as required by laws and regulations. Grass-fed lambs grow more slowly and are ready for slaughter after five to 12 months. Sheep and lambs perform an important task in grazing and keeping the landscape open. In addition, grass used for feed or grazing is important for the CO₂ binding process. The average weight of a carcass is 18.5-19.5 kg.

PHYSICAL ALTERATION PRACTICES

Ram lambs are normally not castrated in Sweden, unlike in other prominent lamb and sheep production countries in the world. Tail docking is not allowed in Sweden, either.

ANTIBIOTICS AND HORMONES

The use of antibiotics at farms is strictly supervised by authorized veterinarians and no antimicrobial treatments are used to promote the growth of lambs. In Sweden, the level of using antimicrobials for food producing animals is one of the lowest in Europe. The use is restricted by national legislation. The prophylactic or metaphylactic use of antimicrobials is forbidden. Swedish legislation forbids the use of hormones for the purpose of growth stimulation. Hormones are only used if prescribed by a veterinarian for ewes, mostly for heating synchronisation.

ANIMAL WELFARE NON-CONFORMITY

There were no illegal offences resulting in a fine or penalty within our lamb production operations in 2019. We follow our methods and practices and, in any case of any deviation, take corrective actions immediately.