RSPCA standards justification

Domestic/ common ducks

Contents

Introduction

This document provides the rationale underpinning the setting of certain, key standards within the RSPCA Welfare Standards for Domestic / Common ducks. As such, this document provides the justification behind the setting of such standards.

Not all standards are covered within this document, as either further explanation is not required, e.g. the justification is clear within the standard itself, or the standard is based on a legal requirement. However, those standards that go above legal minimum requirements and could be set at a range of levels are generally included.

Justifications are not exhaustive, but are typically representative of the evidence base (where this exists) for that issue.

In some cases, a summary of the full standard wording has been provided. Therefore, please refer to the RSPCA Welfare Standards for Domestic / Common Ducks for the full standard wording.

References to legal requirements relate to domestic legislation.

Food and Water

Food

- **Feeder space: There must be a minimum feed space allowance of 50cm per 100 birds.**

  This standard was introduced when the first version of the standards were developed in 1999. It was based on best practice and/or manufacturer's recommendations at the time, for providing sufficient space for the birds to feed, thus avoiding competition during feeding.

Drinking water

- **When ducks are provided with open water facilities that permit full body access, bell drinkers and/or nipple drinkers must also be provided to supply a separate source of drinking water. Bell drinkers are recommended.**

  Where bell drinkers are used, the water channel must be at least 7cm wide and 7cm deep and at least 50cm of drinking space must be provided per 100 birds.

  Where nipple drinkers are used, they must be designed and suitable for use by ducks, of the 360 degree design, have a high flow rate and there must be 1 drinker per 12 ducks where cups are used or per 15 ducks where cups are not used.

  These requirements for separate drinking water provision were added in the 2015 version of the standards, when the current standards requiring full body open water access were introduced.

  Providing additional drinkers when birds have full body access to open water ensures ducks have clean, fresh water to drink at all times. It is a legal requirement that birds have access to an adequate supply of fresh drinking water each day (Welfare of Farmed Animals (England) Regulations 2007). Water can become dirty even after short periods in open water facilities (Liste *et al.*, 2013). Providing separate, clean drinking water reduces concerns regarding poor water quality. In preference tests, when bell drinkers were provided alongside an open water source, ducks preferred drinking from bells when the pool water was dirty (Liste *et al.*, 2012).

  Bell drinkers are recommended as ducks have been shown to prefer open water to nipple drinkers (Cooper *et al.*, 2002). The recommended provisions for both were developed in consultation with industry to align with good practice at the time. More nipple drinkers are required when cups are used as the cups restrict bird access from certain angles.

Environment

Floor and litter

- **Litter quality and quantity:**
  The litter must;
  a) be of a suitable material and particle size
  b) be managed to maintain it in a dry, friable condition
  c) be of a sufficient depth for dilution of faeces
  d) be topped up daily, if necessary, to maintain dry conditions
  f) be managed hygienically

Suitable flooring (not litter) under water facilities within the main house must not occupy >25% of the total floor area of the house.

Litter that is wet or otherwise contaminated must not be introduced into duck housing and must be replaced immediately if within the house. (Wet litter can be covered with fresh, dry litter if this is sufficient to prevent the birds becoming wet from water seeping up through the litter).

Many of these requirements have been included within the standards since their launch in 1999. Legally, poultry must have access to litter in a well-maintained state or a well-drained area for resting.
Dry and friable litter provides ducks the opportunity to express natural foraging behaviours. There is some evidence that inadequate foraging opportunities may be associated with feather damage due to injurious feather pecking behaviour (Leipoldt, 1992). In addition, littered floors are thought to reduce the risk of foot pad dermatitis (lesions on the feet) compared to slatted floors (EFSA, 2023).

The condition and type of litter provided is also important in order to ensure duck health and welfare. Poor quality litter (e.g. wet, capped, contaminated) increases the likelihood of ducks becoming dirty and discourages foraging behaviour (EFSA, 2023). Wet litter, in conjunction with the resultant high ammonia levels, have also been associated with poorer walking ability and increased incidences of foot pad dermatitis (Jones & Dawkins, 2010). Litter quality can be difficult to maintain near water sources, and therefore accessible litter should not be provided in these areas (EFSA, 2023).

Lighting

- **Light schedule: In each 24 hour period no area must be lit at < 20 lux for at least a 9 hour continuous period. Outside the 9 hour light period, but not during the dark period, no area must be lit at < 6 lux. During the natural dark period, there must be a minimum period of 6 hours continuous darkness, except for birds up to 5 days of age where the minimum period of continuous darkness must be at least 1 hour from day 1 and increased by at least 1 hour per day.**

There have been standards relating to lighting schedules since the launch of the standards in 1999, with amendments being made in 2011.

In a preference test, Pekin ducks spent approximately equal amounts of time in 6, 20 and 200 lux compartments. They spent the least amount of time in a < 1 lux compartment. This preference did not change with age (Barber *et al.*, 2004). As a range of light environments over a 24 hour period may benefit duck welfare, the standards relating to lighting were developed to reflect this as far as practically possible.

The requirement for 6 hours of continuous darkness has been present since the standards were launched in 1999. The requirement for a continuous dark period was included to reflect natural conditions and allow ducks adequate time for rest.

- **Natural lightning must be provided at all times during the natural daylight period, from no later than 7 days of age and must penetrate all areas of the house. The light openings in the house must correspond to at least 3% of the total floor area of the house.**

  The requirement for natural light was introduced in the 2009 version of the standards.

  As for other poultry, introducing natural daylight into the house likely benefits duck welfare by, for example, increasing activity and enriching the environment. Natural daylight can provide a range of illuminance levels in different areas, which change throughout the day, and are spectrally different to artificial sources.

  Artificial lighting may impose some visual sensory deprivation on ducks, as fluorescent, incandescent and LED lamps emit minimal UV light, in contrast to sunlight. Ducks can perceive a broader range of light wavelengths than humans (360-694nm) including part of the UV spectrum (Barber *et al.*, 2006). Ducks reared in barns with supplemental UV light have been shown to have lower stress susceptibility and fear levels (House *et al.*, 2020).

- **Patches of light: Light openings must be of sufficient size to ensure that streams of light entering the house causing patches of bright light are avoided.**

  This standard was introduced alongside the requirement for natural light in the 2009 version of the standards. It was thought that bird activity may be greater in patches of bright light, which could negatively affect litter quality in those areas and lead to issues with destruction of ducks in the house.

- **On/off periods: Birds must be exposed to dawn and dusk periods. If used outside the natural daylight period, artificial lights must be switched on and off in a stepped/gradual manner over a period of at least 20 minutes.**

  The requirement to switch lights off in a gradual manner has been present since the standards were launched in 1999, with amendments introduced in 2009 alongside the requirement for natural light.

  The human eye adapts faster to the dark (~10 min) than the eye of the mallard duck (~25 min) (Wells *et al.*, 1975). As such, research suggests the implementation of a 25 minute transition period when changing to a low light intensity to allow the ducks' eyes to adapt (Rodenburg *et al.*, 2005; Sostak, 1999).

Space requirements and flock size

- **Stocking density: stocking density must not exceed, or be likely to exceed, 17kg/m^2.**

  Based on what was considered best practice at the time, the maximum stocking density of 17kg/m^2 (which equates to ~5 birds/m^2 at finishing weight) has been a requirement since the standards were first introduced in 1999, with the current wording introduced in 2009.

  Generally, high stocking densities negatively affect duck welfare as the limited availability of space restricts movement and the performance of natural behaviours, which in turn can lead to behavioural frustration. Social stress may also be increased if individual birds do not have sufficient space, leading to increased aggressive interactions. More feather damage has been observed in ducks kept at 8 birds/m^2 compared to lower stocking densities, potentially due to feather pecking (de Buisonjé, 2001).

  Birds with insufficient space may also be at increased risk of contact dermatitis and lameness (EFSA, 2023), as restriction of movement limits exercise and increases bird contact with waste in the litter. Research has demonstrated greater activity levels in ducks at lower stocking densities (~5 birds/m^2), suggesting more ducks were able to walk normally than at higher stocking densities (Li *et al.*, 2018).Litter quality is also affected by stocking density as more excrement is added to the litter at higher stocking rates, making it increasingly difficult to manage. Maintaining dry litter is essential for good leg health (see floor and litter section above).

  Growth rate also negatively correlates with stocking density, indicating higher stocking densities may impose some resource restriction and/or heat stress on the birds (Makagon & Riber, 2022). Dietary

tryptophan, which has been shown to alleviate stress in farm animals, improved the growth of ducks kept at 11 birds/m^2, suggesting that they may be under stress (Liu *et al.*, 2015). Ducks kept at 11 birds/m^2 also showed poorer bone quality compared to lower stocking densities, potentially indicating an increased risk of bone damage (Zhang *et al.*, 2018).

- **Thinning: Thinning is not permitted in the standards.**

This standard was introduced in the 2011 version of the standards.

Thinning involves removing a proportion of the birds on one or more occasions from the building at planned times to ensure the maximum stocking density is not exceeded. As such, the maximum stocking density is achieved on more than one occasion prior to depopulation. The practice of thinning makes the most economical use of a building as it allows more birds to be reared per unit area

The meat chicken standards justification document includes a good explanation of the justification for prohibiting thinning - much of which is applicable to ducks. See 'Chicken standards justification' for details.

Environmental enrichment

There have been some requirements for ducks to have full body access to water since the standards were introduced in 1999. However, these have subsequently been expanded extensively and the current requirements were introduced in the 2015 version of the standards.

There is a strong scientific basis underpinning the importance of providing ducks with access to water for purposes other than drinking. The Council of Europe states that farmed ducks show a clear preference for open water, even without prior experience. A number of scientific studies have also demonstrated that ducks will use open water sources to perform a range of behaviours. These include wet preening, head dipping, wing rubbing and different types of shaking movements. These behaviours are not only important in the bathing sequence, but are also beneficial to the health of the birds. For example, bathing behaviours help ducks maintain good plumage condition, and clean eyes and nostrils. The RSPCA therefore considers it essential to provide ducks with suitable, easily accessible open water facilities, freely allowing the full performance of important water-related behaviours.

Further, the 2023 European Food Safety Authority's (EFSA) *Scientific Opinion on the welfare of ducks, geese and quail on farm* recommends that "*Open water facilities that allow at least head dipping, but preferably full body contact with the water surface, should be provided throughout the birds' life. These water facilities should be placed on well-drained areas and deterioration of water quality should be prevented by water exchange and cleaning of the facility or filtering of the water. Separate drinkers should be provided in addition to bathing water.*"

More information on the importance of open water provision for ducks can be found in the RSPCA Watertight report

- **All open water facilities must be designed and managed to ensure all ducks can freely and fully submerge their heads in the water, and take water up by the bill, when standing around the outside of the facility. Where ramps are used to help ducks access the open water facilities, there must be a level surface of at least 1m that extends between the edge of the resource and the top of the ramp.**

Many water-based behaviours are performed by ducks from around the outside of open-water facilities. Therefore, sufficient and appropriate space around the outside of the facility should be present to enable this.

- **From day old, the open water facilities provided must allow water to cover the head fully and be taken up by the bill so the duck can shake water over its body without difficulty and, in any case, have a water channel width of at least 4.5cm, and a water depth of at least 4.5cm.**

Providing ducks with some experience of open water at an early age is desirable, enabling them to perform water related behaviours such as preening. The dimensions specified by the standards represent the

minimum needed to enable ducklings to comfortably submerge their head in the water. More extensive water access may not be appropriate for young ducklings as their feathers are not fully oiled/waterproofed. As a result they are more at risk of thermal stress and/or drowning (Babington & Campbell 2022).

- **From no later than 21 days of age, the open water facilities must allow full body access and measure at least 50cm x 100cm (internal measurements), for every 100 ducks provide a minimum of 833cm2 of useable open water facility area, and have a water depth of at least 10cm throughout the facility (except for areas where ramps are provided). Where the depth of the water is greater than 10cm there must still be an area where the water is 10cm deep and this area must extend out by at least 25cm along the entire length of one side of the facility where the birds can enter.**

  Evidence suggests that facilities allowing ducks to enter a water source (e.g. baths) are more beneficial than those allowing head-only/partial body access (e.g. troughs) (e.g. O'Driscoll & Broom, 2011; O'Driscoll & Broom 2012). Being able to fully enter the water offers greater opportunities to perform a wider range of bathing behaviours compared to facilities that allow head-only access. As the level of access to open water increases, ducks are cleaner and have improved walking ability. Ducks also show a greater preference for facilities allowing a greater level of body access.

  The specifications relating to bath size are the same as those used in the research trials that helped inform the development of these standards (see Watertight report), and were also used by one company at the time of these trials. Troughs (including wide ones) may hinder birds entering/exiting the facility easily, particularly when birds are more than 30 days of age. Further, other birds may find it difficult to access the water from outside the trough when other birds are in it.

  Open water facilities that reduce/prevent full body access, e.g. troughs, have no clear advantage over baths regarding water quality (Liste *et al.*, 2013). Baths hold more water than troughs which helps reduce external temperature effects: the bigger the pool the better the thermoregulatory functions. This is particularly important during the warmer months; as the temperature of the pools increases the time ducks spend in them reduces (Liste *et al.*, 2012). Larger water facilities also assist with management as there are fewer individual facilities to clean out.

  It appears that ducks prefer shallower (10cm) water to perform some behaviours. Given the choice between pools with different depths of water, ducks spent more time using water 10cm deep compared to 30cm deep, and spent a similar amount of time using water that was 10 or 20cm deep (Liste *et al.*, 2012). Different depths of water were used for different activities; dabbling in 10cm water vs floating and swimming in 20-30cm water. Ideally, a facility that varies in depth from 10-20(30)cm would be provided.

- **To minimise contamination of the litter with water, all water facilities (including bell and nipple drinkers) must be provided in dedicated areas out of the main house (e.g. verandas) and/or provided in dedicated areas that are physically separated from the birds main littered area and/or placed on raised, perforated (e.g. rubber slats or plastic grids) flooring, and situated so that any spilt water from the facility will not come into direct contact with litter that the birds have access to.**

  Providing any type of water facility directly on the straw/litter can contribute to poor litter quality. Even the provision of bell drinkers and nipple drinkers has all been associated with wet straw, which is poor for bird cleanliness and health (O'Driscoll & Broom, 2011). For example, the worst gait scores (walking ability scores) have been found in birds on wet litter (Jones & Dawkins, 2010). The provision of open water over a drainage area was not only shown to improve bird cleanliness and live-weight, but also resulted in fewer birds with dirty/blocked nostrils (O'Driscoll & Broom, 2011). The Council of Europe recommend '*water facilities be constructed over a well drained area*' and maintaining bedding in a '*dry and friable state*' to keep birds clean and enrich the environment ("Recommendation Concerning Domestic Ducks - European Committee on Legal Co-Operation - Www.coe.int" n.d.). The methods of managing specified within the standards are based on best practice and the research available at the time. (More detail can be found in the Watertight report.)

- **Open water facilities that allow birds full body access must be emptied and cleaned out at least every 16 hours and twice within each 24 hour period.**

  Open water facilities need to be cleaned out regularly to prevent the build up of any harmful contaminants, with sixteen hours believed to be the maximum amount of time that the water should be left within the facility. Whilst more frequent cleaning may be beneficial for water quality, it can be difficult to achieve practically

(Liste *et al.*, 2013). Birds spend more time sitting in water when it is clean compared to when it is dirty (Liste *et al.*, 2012).

The range

Access to the range

- **Pophole dimensions: Each pophole must be a minimum of 45cm high (enough to ensure that the tallest birds have sufficient clearance between their head and the top of the pophole) and 50cm wide. There must be a minimum of two popholes.**

These requirements were introduced in the 2011 version of the standards and were based on best practice across the poultry industry at the time. Observations suggest ducks tend to walk through popholes in single file, and hence a 50cm width was felt to be sufficient. The RSPCA strongly recommends that more popholes are provided than the minimum stated within the standard, to allow for variations in weather conditions. If enough popholes are installed, some can be closed in adverse weather to help maintain good conditions within the building, while still remaining compliant with the standards.

Range management

- **Grass cover: In paddocks where a good grass sward is maintained throughout the grass period, there must be a minimum of 2.5m^2 of range per bird. Where grass cover is poor, there must be a minimum of 4m^2 per bird.**

This standard has been included since the standards were first launched in 1999 and reflected industry best practice at the time. The minimum range area required by legislation is 2m^2 of range per duck. A larger range area will reduce the risk of poaching, which is also more likely when the grass cover is poor.

- **Shelter: Ducks must be provided with areas of shelter as a form of protection against adverse weather conditions, such as prevailing wind, rain and strong sunlight (these must be sufficient to minimise crowding). Overhead shelter must be provided at an area of at least 8m^2/1000 birds and at least 25% must be positioned within 20m of the house.**

There have been some requirements for shelter on the range since the standards were introduced in 1999. However, they have been revised over time, with the latest version introduced in 2015.

Studies examining the ranging behaviour of ducks are lacking. However, for poultry generally, providing shade and shelter, particularly close to the house, encourages birds to go outside and make greater use of the range.

Health

Health and welfare

- **There must not be any lame birds. Any bird that is lame, in uncontrollable pain, or not recovering from illness or injury, must be humanely killed without delay.**

Standards relating to lameness have been present since the standards were first developed in 1999, with the current wording being introduced in 2009.

Lameness can be a serious welfare problem in growing ducks, whether caused by infectious agents or growth abnormalities. In broiler chickens, research has demonstrated that lame birds (gait score 3 and above) can be in pain and discomfort and, as a result, their welfare is unduly compromised (Danbury et al. 2000; McGeown et al. 1999). It is reasonable to conclude that ducks are likely to find lameness similarly painful.

Mutilations

- **Bill trimming, claw trimming, wing clipping and any other forms of mutilation are not permitted.**

These procedures have been prohibited since the launch of the standards in 1999. Mutilations are contrary to the principles of the RSPCA welfare standards as they cause pain and discomfort to birds and may interfere with natural behaviours. Mutilations are not deemed necessary in order to manage behaviour in flocks and are therefore not permitted.

On-farm casualty killing

- **Permitted methods of casualty killing / slaughter: captive bolt, hand held electrical stunning immediately followed by neck cutting, neck dislocation. Neck dislocation must involve stretching the neck to sever the spinal cord and cause extensive damage to the major blood vessels. Equipment that crushes the neck (e.g. killing pliers) must not be used.**

This information was originally included as guidance in an information box when the standards were first launched in 1999. The list of permitted methods became a standard in the 2006 version, with the current wording introduced in 2015.

Although a widely used poultry killing method, research suggests that neck dislocation does not consistently concuss the brain and is unlikely to cause immediate unconsciousness. The use of a captive bolt, followed by neck cutting or neck dislocation, is encouraged as a more humane alternative method. Equipment that crushes the neck does not cause the same brain stem and blood vessel damage as neck stretching, so is neither quick nor humane. More information can be found in the Humane Slaughter Association guide: Practical Slaughter of Poultry.

Transport

Catching

- **No bird must be deprived of food for more than 10 hours prior to killing.**

  When the standards were first launched in 1999, the maximum food withdrawal time prior to slaughter was 12 hours. This was reduced to 10 hours in the 2009 version of the standards, in order to bring the duck standards in line with the requirements of the meat chicken and turkey standards at the time. This also reflected the recommendations of the European Food Safety Authority at the time (EFSA, 2004).

  The 2022 European Food Safety Authority *Scientific Opinion on the welfare of domestic birds and rabbits transported in containers* considers it very likely that poultry feed withdrawal periods longer than 12 h lead to prolonged hunger and intestinal cell breakdown, and are therefore detrimental to health and welfare. However, even feed withdrawal periods of 6 h are likely to lead to prolonged hunger due to crop feed stores and liver glycogen reserves being exhausted (EFSA, 2022).

- **Handling: When carrying ducks the weight of the bird must be supported. Ducks must not be carried hanging head downwards, or by the legs, wing(s), neck, head or tail. Birds >4kg must be carried and placed into containers individually.**

  Many of the standards relating to handling were present in the original 1999 version of the standards, although there has been a number of revisions up to and including the 2015 version.

  There is a lack of research relating to duck catching and handling techniques and, therefore, the standards reflect industry best practice and commercial knowledge. Poor catching, including handling by the legs, can easily lead to ducks becoming lame, and hence they must not be carried by the legs.

Transport

- **Transport time: All birds must be slaughtered within 6 hours of loading the first bird. The time from when the birds leave the farm to arriving at the processing plant must be no longer than 4 hours.**

  When the first set of standards were introduced in 1999, the time from the start of loading to the end of unloading was set at a maximum of 8 hours. This was reduced to 6 hours in the 2006 version and to the current maximum of 4 hours in 2009.

  The European Food Safety Authority previously suggested that 4 hours (similar to turkeys) is likely to be an appropriate maximum transport time for ducks. The same report also recommended that chickens should not be held in transport containers for more than 6 hours,which is considered to also be reasonable for ducks (EFSA, 2004). A more recent 2022 report also recommends journey duration be kept to 4 hours, at which point there is an increased risk of thermal stress (EFSA, 2022). In general, transport is stressful for poultry due to confinement, sensory overload and the risk of thermal stress. Hence, transport times should be minimised as far as possible.

Slaughter / killing

Health monitoring

- **The level of pododermatitis and dirty feathers must be recorded for each flock.**

Health monitoring requirements were first introduced in the 2009 version of the standards.
Keeping records of pododermatitis (lesions to the foot pad) and dirty feathers for each flock is important as it enables producers to take appropriate action to reduce their incidence and severity in future flocks. Pododermatitis is caused by contact with litter which is both wet and contains a high level of ammonia from faeces. Such lesions can cause pain and can act as a gateway for bacterial infection.

Lairage

- **Lairage time: All birds must be killed as soon as possible on arrival at the processing plant and in any case within 2 hours.**

Introduced in the 2009 version of the standards, this requirement reduces the amount of time birds spend in lairage which helps prevent unnecessary stress, such as that caused by poor bird-level ventilation and behavioural restriction. In meat chickens increased lairage time is associated with increased mortality (Nijdam *et al.*, 2004; Oba et al., 2009; *Chauvin et al.*, 2011).

Shackling

- **Shackling: inverted shackling of conscious ducks will be phased out as soon as a commercially viable and more humane alternative method of killing is available. In the meantime, ducks must not be suspended for more than 50s before they are stunned.**

The original standard related to shackling time in 1999 had a maximum time of 1 minute, although plants were given until December 2000 to comply. This was reduced to 50s in the 2011 version of the standards with a phase in date of December 2012.

Shackling a bird that is conscious can cause discomfort and pain and it is therefore important to reduce the shackling period to a minimum. However, for an effective stun, a short period of shackling is necessary in order to allow sufficient time for birds to relax and stop wing flapping.

Gas killing for ducks had not been well researched or trialled when these standards were last extensively revised. There were concerns that as ducks (as diving birds) can hold their breath, gas methods may not quickly induce a loss of consciousness without causing undue distress.

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