

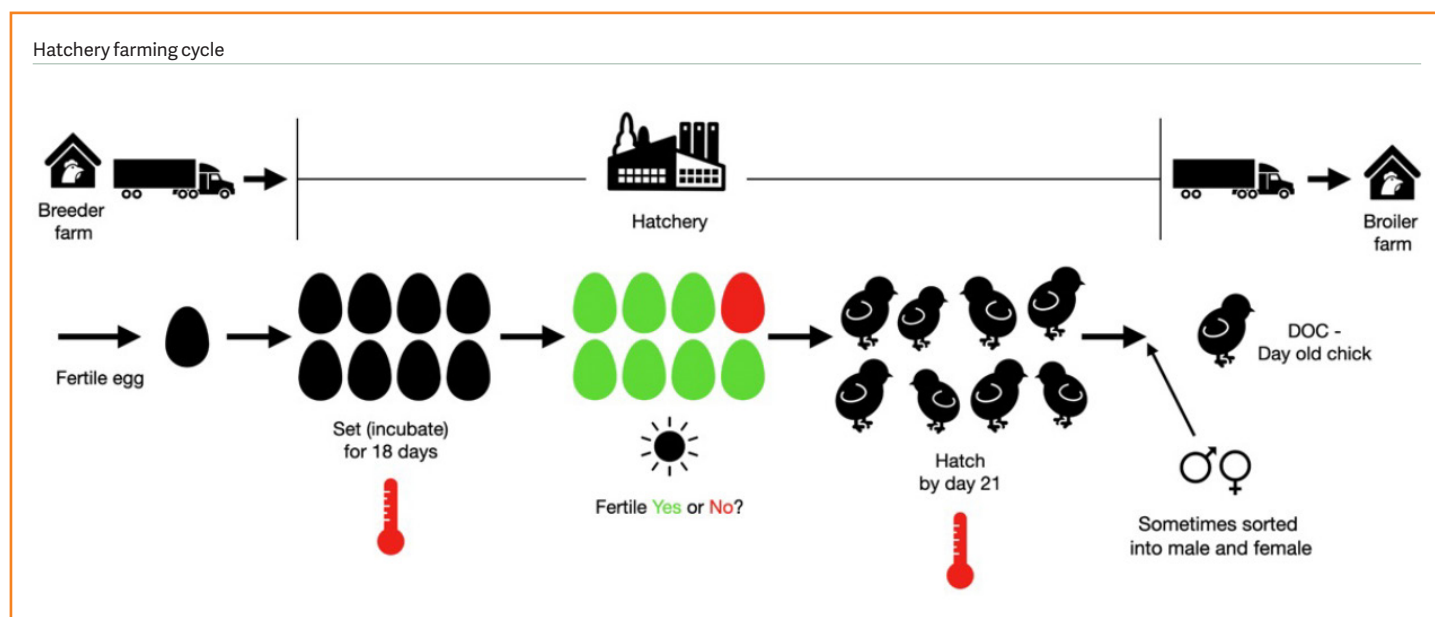
## 5.6 Hatcheries Toolkit

### Introduction

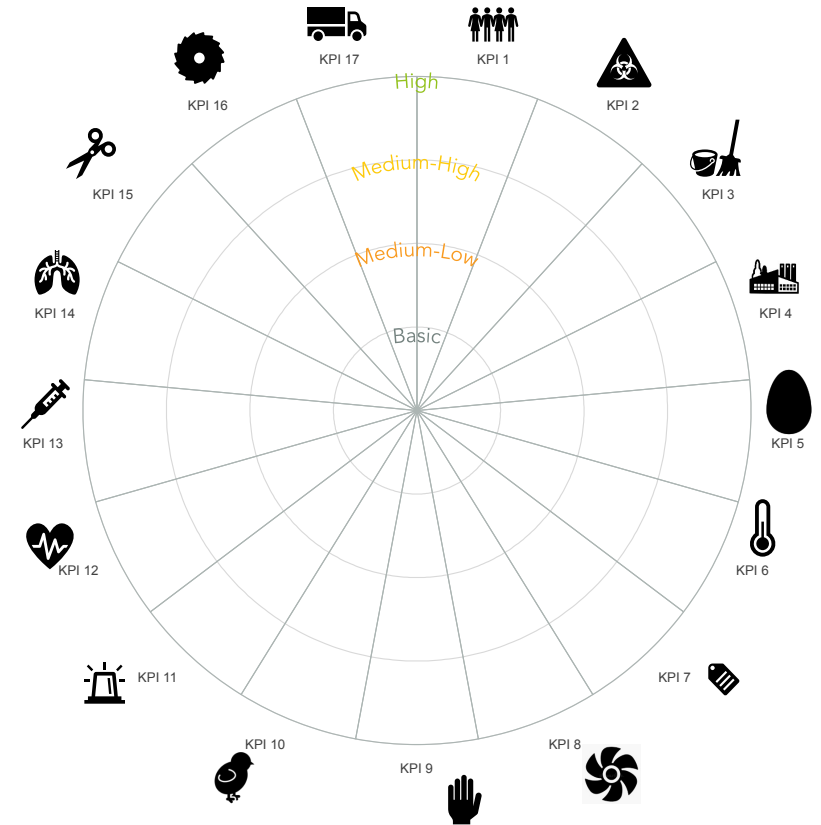
Chickens were first domesticated at least 8,000 years ago from several species of jungle fowl in southeast Asia, moving north into China and across central Asia, then into Europe. Today, the chicken is ubiquitous, being farmed in huge numbers on every continent. The FAO suggests there are 16 billion laying hens worldwide, and each year, at least 60 million meat-producing (broiler) chickens are reared. Chickens have been increasingly bred for either laying eggs or producing meat, resulting in distinctly different-looking birds. Chickens can live for up to ten years, but breeder chickens will usually be killed after about 70 weeks. Chickens will spend time preening (cleaning and grooming their feathers), and this is augmented where possible by bouts of dustbathing, on average once every two days. Wild or feral chickens will form into small social groups of up to 15 individuals, with a dominant male and several hens and subordinate males. Chickens are highly motivated to forage, spending large proportions of their day scratching about and foraging, even in the presence of abundant food.

Breeder birds are the female and male of *Gallus gallus* (usually in a ratio of about 1:8 to 1:10, male:female) which are put together to mate and to produce fertile eggs. Males and females are reared on separate farms and brought together from about 20 weeks of age. In many systems, the male birds are provided with reduced feed quantity to prevent them from becoming overweight and lame, but this does induce chronic hunger in these birds. In most commercial systems, fertile eggs are incubated in a specialist system (the hatchery), and chicks hatching from these eggs are taken to the final production farm at one day old (day-old-chicks, DOC). Multiple generations of high genetic merit birds (great-grandparent, grandparent, parent) are necessary to produce the large numbers of chicks required (see figure below for the hatchery farming cycle).

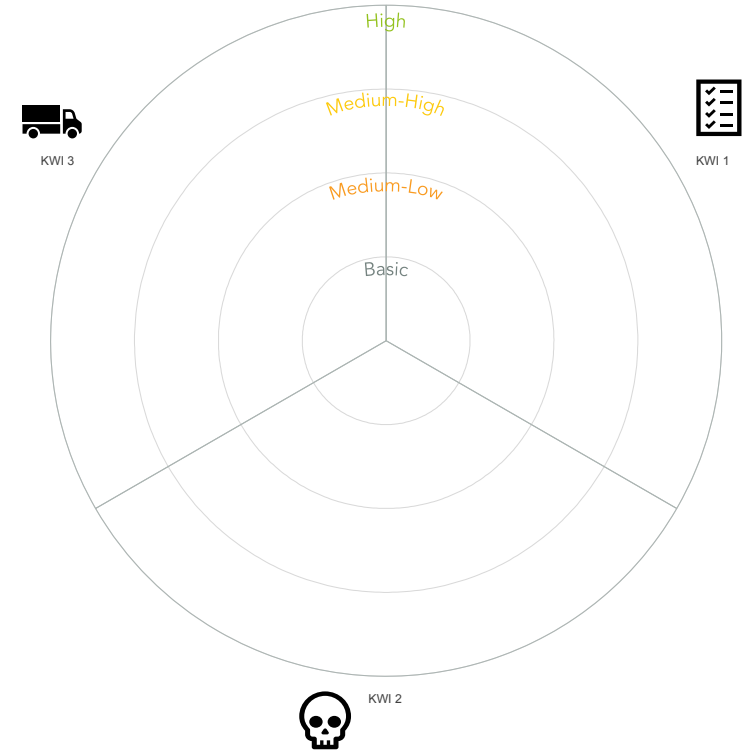
Welfare issues of breeder birds include: beak trimming; other mutilations (toe and comb cutting); feet, beak and feather conditions; damage to the feathers and skin of females from repetitive mating; high mortality and culling rates in male breeder birds; hunger in male breeder birds; handling, catching and transport to slaughter; and non-stun slaughter.



KPI	Achievement
KPI 1: People, training - Links to P1, P11	<input type="radio"/>
KPI 2: Biosecurity - Links to P5, P11	<input type="radio"/>
KPI 3: Cleaning and disinfection - Links to P5, P11	<input type="radio"/>
KPI 4: Hatchery environment: physical - Links to P2, P4, P5, P6, P9	<input type="radio"/>
KPI 5: Egg handling, storage - Links to P5	<input type="radio"/>
KPI 6: Hatchery environment: temperature - Links to P4, P9	<input type="radio"/>
KPI 7: Traceability - Links to P10	<input type="radio"/>
KPI 8: Hatchery environment: ventilation - Links to P4, P9	<input type="radio"/>
KPI 9: Chick handling - Links to P2, P5, P4, P9, P11	<input type="radio"/>
KPI 10: Chick stocking density - Links to P4, P6	<input type="radio"/>
KPI 11: Hatchery emergency - Links to P7, P10, P11	<input type="radio"/>
KPI 12: Health, and health planning - Links to P5	<input type="radio"/>
KPI 13: Vaccines used in the hatchery - Links to P5, P11	<input type="radio"/>
KPI 14: Formalin, dust - Links to P4, P5	<input type="radio"/>
KPI 15: Mutilations - Links to P5, P6, P7	<input type="radio"/>
KPI 16: Euthanasia - Links to P5, P7	<input type="radio"/>
KPI 17: Transport - Links to P7	<input type="radio"/>
Basic level not achieved	
Basic (B)	
Medium-Low (ML)	
Medium-High (MH)	
High (H)	
<b>Overall KPI achievement</b>	



KWI		Achievement
	KWI 1: Hatchery cull records - Links to P5	<input type="radio"/>
	KWI 2: Hatchery mortality records - Links to P5	<input type="radio"/>
	KWI 3: Transport mortality - Links to P5, P10	<input type="radio"/>



Basic level not achieved	
Basic (B)	
Medium-Low (ML)	
Medium-High (MH)	
High (H)	

**Overall KWI achievement**

**Overall achievement**

**Overall achievement**



### KPI Hatchery 1

People, training - Links to P1, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	All people responsible for the care of eggs and chicks should have received appropriate training by other with appropriate experience, and they should be able to demonstrate sufficient knowledge of chick behaviour, general signs of diseases, and indicators of poor animal welfare.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	People handling animals are trained in handling techniques, emergency killing procedures and biosecurity.	<input type="radio"/>		<input type="radio"/>		
	Routine procedures should not cause injury, panic, lasting fear or avoidable pain or distress, and where painful procedures cannot be avoided, they should be carried out by competent and trained people.	<input type="radio"/>				
Medium-High (MH)	An animal welfare contact person or co-ordinator, responsible for animal welfare aspects within the hatchery or company, is identified.	<input type="radio"/>		<input type="radio"/>		
	The animal welfare contact person has received training in animal welfare aspects.	<input type="radio"/>				
High (H)	People in the company are supported to have higher-level training or achieve professional qualifications in hatchery management, animal care and animal welfare.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 2

Biosecurity - Links to P5, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Hatchery building and machinery have surfaces that allow for effective cleaning.	<input type="radio"/>		<input type="radio"/>		
	To reduce disease transmission risk, a one-way flow of people and materials through the hatchery – from egg arrival to chick dispatch – is adopted.	<input type="radio"/>				
	Eggs are fumigated or sanitised before setting.	<input type="radio"/>				
	Egg collectors are not permitted to enter the hatchery.	<input type="radio"/>				
Medium-Low (ML)	A hatchery biosecurity and hygiene programme or plan (see Resource 7) is in place.	<input type="radio"/>		<input type="radio"/>		
	Access to the hatchery is limited and visitors adhere to strict biosecurity requirements specific to the hatchery being visited.	<input type="radio"/>				
	Equipment and people movement is segregated between ‘clean’ and ‘dirty’ areas.	<input type="radio"/>				
Medium-High (MH)	All staff and visitors shower on-site and are provided with a full complement of protective clothing.	<input type="radio"/>		<input type="radio"/>		
	Dirty eggs are not incubated.	<input type="radio"/>				
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 3

Cleaning and disinfection - Links to P5, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Vermin are controlled through appropriate and effective measures, and only approved pest control substances or chemicals permitted by law are used.	<input type="radio"/>		<input type="radio"/>		
	The construction rooms, hatcher and setter chambers, and equipment can be thoroughly cleaned and disinfected.	<input type="radio"/>				
Medium-Low (ML)	Written cleaning and disinfection protocols are implemented.	<input type="radio"/>		<input type="radio"/>		
	A list of permitted disinfectants and detergents used at the hatchery, and their safety data sheets, is available.	<input type="radio"/>				
	The areas around the buildings are kept clear of debris and non-essential equipment.	<input type="radio"/>				
Medium-High (MH)	The most humane effective baiting method is adopted, and pest control baits are only accessible to the targeted species.	<input type="radio"/>		<input type="radio"/>		
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



#### KPI Hatchery 4

Hatchery environment: physical - Links to P2, P4, P5, P6, P9		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Floors, surfaces, fittings, equipment and other facilities in and around the hatchery are designed, constructed, operated and maintained to minimise the risk of egg damage, or chick smothering, injury, trapping, falling, or disease, and are free from rough edges and sharp protrusions.	<input type="radio"/>		<input type="radio"/>		
	Housing is constructed to minimise fire risk, and firefighting equipment and smoke detectors are installed, with capacity to escape the building in an emergency.	<input type="radio"/>				
Medium-Low (ML)	Automatic equipment is inspected at least daily.	<input type="radio"/>				
	The temperature and humidity within hatcher is accurately monitored.	<input type="radio"/>		<input type="radio"/>		
	Eggs in setters are turned frequently.	<input type="radio"/>				
Medium-High (MH)	Back-up power which can power essential electrical systems in the hatchery is available.	<input type="radio"/>				
	Incubation equipment is alarmed for high and low temperatures, and power failure.	<input type="radio"/>		<input type="radio"/>		
	Alarms are responded to within 15 minutes.	<input type="radio"/>				
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



#### KPI Hatchery 5

Egg handling, storage - Links to P5		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Eggs (and subsequently, chicks) are identifiable by trolley and records are kept to maintain traceability.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Eggs are not stored for longer than 14 days.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	Eggs are not stored for longer than 7 days.	<input type="radio"/>		<input type="radio"/>		
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



#### KPI Hatchery 6

Hatchery environment: temperature - Links to P4, P9		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Heating and cooling systems are capable of producing enough heat or cooling to ensure eggs and chicks do not get too hot or too cold.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Heating and cooling systems essential for bird health and welfare are checked daily for proper operation.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	Automatic equipment for temperature control is fitted with alarms that warn immediately of equipment failure.	<input type="radio"/>		<input type="radio"/>		
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 7

Traceability - Links to P10		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Eggs (and subsequently, chicks) are identifiable by trolley and records are kept to maintain traceability.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	The hatchery records for each batch of eggs and chicks state:	<input type="radio"/>		<input type="radio"/>		
	Farm of origin	<input type="radio"/>				
	Date of lay	<input type="radio"/>				
	Date of collection	<input type="radio"/>				
	Vehicle identity	<input type="radio"/>				
	Hatchery ID	<input type="radio"/>				
	Setting date	<input type="radio"/>				
	Setter number	<input type="radio"/>				
	Transfer date	<input type="radio"/>				
	Chick numbers hatched	<input type="radio"/>				
Medium-High (MH)	Floor eggs and dirty nest eggs are labelled and stored separately.	<input type="radio"/>		<input type="radio"/>		
	The hatchery record, for each batch of eggs and chicks state:	<input type="radio"/>				
	Transport records	<input type="radio"/>				
High (H)	Placement farm	<input type="radio"/>		<input type="radio"/>		
	As previous requirement.	<input type="radio"/>				



### KPI Hatchery 8

Hatchery environment: ventilation - Links to P4, P9		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	The equipment for ventilation supports eggs and chicks, and manages air exchange, air quality and dust, and ensures chick comfort.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Automatic equipment for ventilation is fitted with alarms that warn immediately of equipment failure.	<input type="radio"/>		<input type="radio"/>		
	Ventilation systems essential for bird health and welfare are checked for proper operation daily.	<input type="radio"/>				
Medium-High (MH)	Ventilation systems are checked to ensure sufficient oxygen is available.	<input type="radio"/>		<input type="radio"/>		
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 9

Chick handling - Links to P2, P5, P4, P9, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Chicks are handled in a way that avoids injury and minimises stress (examples are where manual handling of chicks, sexing, grading, and movement around the hatchery in trays or crates does not cause injuries to the birds).	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Lighting in chick grading areas allows the chicks to be clearly seen by the handlers.	<input type="radio"/>		<input type="radio"/>		
	Holding/waiting rooms are lit with controlled or blue lighting.	<input type="radio"/>				
	The design of the machinery ensures chicks cannot fall from conveyors.	<input type="radio"/>				
	Conveyor belts do not cause injuries to the birds.	<input type="radio"/>				
Medium-High (MH)	In automated chick sorting equipment, chicks are protected from falling from the sides of the sorter, and from falling into eggshell debris.	<input type="radio"/>		<input type="radio"/>		
	Empty hatcher trays are checked for any remaining chicks or unhatched eggs before the tray is washed.	<input type="radio"/>				
High (H)	Where chicks are transferred between different levels, the angle of the conveyor belt or the drop does not cause birds to lose balance.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 10

Chick stocking density - Links to P4, P6		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Where stocking density (in hatch trays and in transport trays) for chicks is legislated, the legal specification is followed. If no local legislation applies, a minimum of 21cm <sup>2</sup> per chick is applied.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Stocking density in chick boxes is 25cm <sup>2</sup> per chick.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 11

Hatchery emergency - Links to P7, P10, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Written plans are in place to deal with emergencies such as fire, power failure, flooding, accidental injuries, freezing, failure of water and feed supply, or chemical or effluent spillage.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Contacts and emergency phone numbers, and contact numbers in cases where the emergency can affect human health, are available at each site.	<input type="radio"/>		<input type="radio"/>		
	If generators are used for backup power, they are tested under conditions of load at least 4 times a year.	<input type="radio"/>				
Medium-High (MH)	The emergency plan includes approved methods of humane killing and mass depopulation, with each method having an SOP containing instructions for implementation, equipment requirements, training, safety, biosecurity and environmental aspects.	<input type="radio"/>		<input type="radio"/>		
	The methods proposed are consistent with national law.	<input type="radio"/>				
High (H)	Plans have been developed in consultation with a specialist veterinarian and are updated annually, to cover circumstances such as animals infected with a potentially zoonotic or notifiable disease.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 12

Health, and health planning - Links to P5		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	A procedure is in place to deal with an outbreak of important transmissible disease, including geographically appropriate OIE-listed or notifiable diseases.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Infectious disease is prevented and controlled through good management, good animal care, biosecurity, vaccination and genetic selection.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	A H&W plan is in place for the hatchery (see Resource 6b).	<input type="radio"/>		<input type="radio"/>		
High (H)	The H&W plan is reviewed and updated annually, and authorised by a specialist veterinarian.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 13

Vaccines used in the hatchery - Links to P5, P11		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Any drugs or other agents used to treat the chicks or eggs shall be compliant with all local guidelines and applicable local legislation.	<input type="radio"/>		<input type="radio"/>		
	Hormones and antibiotics are not used as growth promoters.	<input type="radio"/>				
	Preventive (prophylactic) use of antimicrobials is not permitted.	<input type="radio"/>				
Medium-Low (ML)	Vaccines and other medicines are used responsibly to protect both human and animal health.	<input type="radio"/>		<input type="radio"/>		
	Vaccines and medicines are stored securely and in the recommended conditions (label instructions).	<input type="radio"/>				
	Medicine use is recorded (Resource 5).	<input type="radio"/>				
	The company has access to a veterinarian experienced in poultry care.	<input type="radio"/>				
Medium-High (MH)	Persons using medicines have relevant experience and training.	<input type="radio"/>		<input type="radio"/>		
	Equipment used in the administration of vaccines must be maintained and managed in a hygienic manner, in line with the manufacturer's recommendations and/or as directed by the veterinary surgeon.	<input type="radio"/>				
High (H)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 14

Formalin, dust - Links to P4, P5		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	The hatchery management are aware that formalin, used as a fumigant, is a noxious substance and can cause irritation to the bird's eyes and nasal passages.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	When using a noxious substance such as formalin, the uses of alternative, less noxious, sanitisers, has been considered or is under trial.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	If formalin is used, fumigation or sanitation is:	<input type="radio"/>		<input type="radio"/>		
	a) carried out only once in the hatcher per hatch cycle; and b) conducted when the majority of the birds are 'pipping' and not at peak emergence.	<input type="radio"/>				
High (H)	If dust or fluff levels are recognised to be causing negative impacts on chick health and welfare, steps are taken to reduce dust and feather fluff.	<input type="radio"/>		<input type="radio"/>		



### KPI Hatchery 15

Mutilations - Links to P5, P6, P7		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Any beak trimming is performed by, or in a system managed by, trained, competent stockpersons.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Where beak trimming is performed, infrared systems are used.	<input type="radio"/>		<input type="radio"/>		
	The named welfare contact person ensures and records that infrared equipment is set up appropriately, and that trained people are operating the machine.	<input type="radio"/>				
Medium-High (MH)	The effectiveness of the infrared system in producing accurate beak trimming is monitored every hour and recorded.	<input type="radio"/>		<input type="radio"/>		
High (H)	Beak trimming is not carried out and birds have excellent feather cover.	<input type="radio"/>		<input type="radio"/>		





### KPI Hatchery 16

Euthanasia - Links to P5, P7		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Chicks, and in-shell embryos, are euthanased by adopting local legally-approved methods.	<input type="radio"/>		<input type="radio"/>		
	Unviable, sick or distressed chicks are isolated and euthanased humanely without delay.	<input type="radio"/>				
	People responsible for euthanasia, and euthanasia decisions, have received appropriate training.	<input type="radio"/>				
Medium-Low (ML)	Any equipment used for euthanasia is maintained in good working order, and records documenting maintenance are kept.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	Euthanasia of sick, injured or unwanted chicks takes place at no more than 15-minute intervals.	<input type="radio"/>		<input type="radio"/>		
	A back-up method of euthanasia is in place in case of equipment failure.	<input type="radio"/>				
High (H)	All equipment used for euthanasia of chicks, or in-shell embryos, is inspected daily.	<input type="radio"/>		<input type="radio"/>		
	If a problem is identified, use of the equipment is stopped and corrective action taken.	<input type="radio"/>				
	A written policy for euthanasia of chicks and in-shell embryos (and the method used) is produced by working with a veterinarian and is based on recognised best international practice.	<input type="radio"/>				



### KPI Hatchery 17

Transport - Links to P7		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Transport of chicks is carried out by trained people.	<input type="radio"/>		<input type="radio"/>		
	Chicks which are sick, weak, injured, or known to be diseased, are not transported. They are humanely euthanased on-site.	<input type="radio"/>				
Medium-Low (ML)	Transport vehicles protect the birds from adverse weather and high temperatures.	<input type="radio"/>		<input type="radio"/>		
	Stocking density in chick transport boxes is minimum 21cm <sup>2</sup> (maximum of 25cm <sup>2</sup> ) per chick.	<input type="radio"/>				
Medium-High (MH)	The height of the chick transport containers enables the chicks to maintain a normal posture when standing.	<input type="radio"/>		<input type="radio"/>		
	Drivers are familiar with welfare procedures to take in the event of an emergency during transport.	<input type="radio"/>				
	Chick deaths and injuries during transport are recorded and reported to the hatchery.	<input type="radio"/>				
High (H)	The transporter is fitted with equipment that:	<input type="radio"/>		<input type="radio"/>		
	a) ensures a controlled environment; and	<input type="radio"/>				
	b) maintains an appropriate internal temperature of the vehicle during transport.	<input type="radio"/>				



### KWI Hatchery 1

Hatchery cull records - Links to P5		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Only mortality (not cull) data collected. Mortality is defined as 'found dead', whereas cull is defined as 'actively, humanely killed for health or welfare reason'.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	Daily cull number is collected and recorded.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	Both cull data and mortality is analysed, and the cause of adverse trends is investigated and acted upon.	<input type="radio"/>		<input type="radio"/>		
High (H)	A written plan is in place to respond to sudden increases in culling.	<input type="radio"/>		<input type="radio"/>		
	The plan includes veterinary consultation and actions to address the problem where necessary.	<input type="radio"/>				



### KWI Hatchery 2

Hatchery mortality records - Links to P5		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Daily hatchery mortality data is recorded.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	Hatchery mortality data is analysed, and the cause of adverse trends is investigated and acted upon.	<input type="radio"/>		<input type="radio"/>		
High (H)	A procedure is in place to investigate unexplained mortality.	<input type="radio"/>		<input type="radio"/>		
	If morbidity and mortality levels increase, and other signs indicate that the hatchery has been affected by disease, a diagnostic investigation is conducted to identify the causative agent.	<input type="radio"/>		<input type="radio"/>		



### KWI Hatchery 3

Transport mortality - Links to P5, P10		Observed?	Comment on observation	Achieved level?	Progress	Evidence/comment
Basic (B)	Dead on arrival (DOA) at the destination farm is calculated and recorded.	<input type="radio"/>		<input type="radio"/>		
Medium-Low (ML)	The company has a written plan in place to respond to negative changes in DOA, in any 24-hour period.	<input type="radio"/>		<input type="radio"/>		
Medium-High (MH)	As previous requirement.	<input type="radio"/>		<input type="radio"/>		
High (H)	The company sets high targets, measures performance and reports on outcomes.	<input type="radio"/>		<input type="radio"/>		

## Notes: Hatcheries

Assurewel: [Laying hens](#)

AssureWel: [The AssureWel Approach to Improving Farm Animal Welfare: The Development and Use of Welfare Outcome Assessments in Farm Assurance](#)

BBAFW Investor Briefing (August 2015): [How are Investors Using the Business Benchmark on Farm Animal Welfare?](#)

BBAFW Investor Briefing (November 2017): [How Companies Are Using the Business Benchmark on Farm Animal Welfare](#)

BBAFW: [The Business Benchmark on Farm Animal Welfare Report 2019](#)

British Veterinary Association: [Farm Assurance Schemes Infographic](#)

Canadian National Farm Animal Care Council (2016): [Codes of Practice, Chickens, Turkeys and Breeders](#)

[Compassion in World Farming, Strategic Plan 2013–2017, For Kinder, Fairer Farming Worldwide](#)

COUNCIL DIRECTIVE (EC) 1099/2009 on the protection of animals at the time of killing

COUNCIL DIRECTIVE (EC) 1/2005 of 22 December 2004 on the protection of animals during transport and related operations and amending Directives EEC 64/432/EEC and 93/119/EC and Regulation (EC) 1255/97

COUNCIL DIRECTIVE 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes

COUNCIL DIRECTIVE 1999/74/EC of 19 July 1999 laying down minimum standards for the protection of laying hens

[COUNCIL DIRECTIVE 98/58/EC of 20 July 1998 concerning the protection of animals kept for farming purposes](#)

CSIRO Publishing (2001): [Model Code of Practice for the Welfare of Animals: Livestock at Slaughtering Establishments](#)

DEFRA (2018): [Code of Practice for the Welfare of Laying hens and Pullets](#)

European Bank for Reconstruction and Development: [Sub-sectoral Environmental and Social Guideline: Poultry Farming](#)

EFSA (2012): [Scientific report updating the EFSA opinions on the welfare of broilers and broiler breeders](#)

FAO: [Water Quality for Livestock and Poultry](#)

[FAWC advice on animal sentience \(10 June 2019\)](#)

[FAWC: Evidence and the welfare of farmed animals - part 2: evidence based decision making \(19 July 2018\)](#)

[FAWC advice on space and headroom allowances for transport of farm animals \(17 September 2013\)](#)

[FAWC report on farm animal welfare: health and disease \(29 November 2012\)](#)

[FAWC opinion on contingency planning for farm animal welfare in disasters and emergencies \(15 March 2012\)](#)

[FAWC advice on sustainable intensification of livestock agriculture \(3 February 2012\)](#)

[FAWC report on education about farm animal welfare \(15 December 2011\)](#)

[FAWC report on economics and farm animal welfare \(7 December 2011\)](#)

[FAWC opinion on osteoporosis and bone fractures in laying hens \(14 December 2010\)](#)

Gov UK: [The Welfare of Farmed Animals \(England\) Regulations 2007](#)

Gov UK: [Animal Welfare Act 2006](#)

IFC (2014): Good Practice Note: Improving Animal Welfare in Livestock Operations (2014)

Edgar, J.L.; Mullan, S.M.; Pritchard, J.C.; McFarlane, U.J.C.; and Main, D.C.J.: [Towards a 'Good Life' for Farm Animals: Development of a Resource Tier Framework to Achieve Positive Welfare for Laying Hens](#)

OIE: [Terrestrial Animal Health Code \(2019\)](#)

OIE Terrestrial Animal Health Code (2019): [Chapter 7.5, Slaughter of Animals](#)

OIE: [The OIE Strategy on Antimicrobial Resistance and the Prudent Use of Antimicrobials \(2016\)](#)

[Red Tractor Chicken Standards: Broiler and Poussin Standards Version 4.2 \(updated 2019\)](#)

[Red Tractor Chicken Standards: Indoor Enhanced Welfare Version 1 \(2020\)](#)

[Red Tractor Chicken Standards: Hatchery Version 4.1 \(updated 2019\)](#)

[Red Tractor Chicken Standards: Breeder Layers Version 4.1 \(Updated 2019\)](#)

[Red Tractor Chicken Standards: Breeder Replacements Version 4.1 \(Updated 2019\)](#)

RSPCA (2017): [Welfare standards for laying hens](#)

RSPCA (2017): [Welfare standards for hatcheries \(chicks, poults and ducklings\)](#)

[RSPCA \(2018\): Welfare standards for pullets \(laying hens\)](#)

[RSPCA \(2017\): Welfare standards for meat chickens](#)

Share Action: [What we do](#)

SPCA Certified (2017): [Standards for the raising and handling of broiler chickens](#)

SPCA Certified (2017): [Standards for the raising and handling of egg-laying hens](#)

Vet Sustain (2019): [The Veterinary Sustainability Goals](#)

Welfare Quality Network: [Assessment Protocols](#)

WHO: [Water Safety and Drinking Water Quality Guidelines](#)

World Bank Group: [General Environmental, Health and Safety \(EHS\) Guidelines, \(April 2007\)](#)

[World Vet Antimicrobial Stewardship: McDonald's Corporation – Vision for Antimicrobial Stewardship in Food Animals \(March 2015\)](#)