RSPCA Veterinary Health & Welfare Plan

Guidance notes for laying hens & pullets

These notes provide guidance for producers and their veterinary surgeons during the formulation of their written Veterinary Health & Welfare Plan (VHWP) for laying hens and pullets. All farms are different and, therefore, these notes are not intended to be prescriptive but to offer guidance regarding the main areas that should be considered. In places, some of the requirements of the RSPCA welfare standards for laying hens and pullets are highlighted. However, these are just relevant examples and the RSPCA welfare standards must be consulted in full for the detailed requirements.

The RSPCA is grateful to those who assisted in formulating these guidance notes - particularly Stephen Lister MRCVS for his valuable advice, and members of the RSPCA Laying Hen Standards Working Group.

The VHWP should be agreed between the veterinary surgeon and the producer and the stock-keeper. Its content may be covered during a routine visit, with perhaps one follow-up visit per year. During these visits the veterinary surgeon can take the opportunity to inspect each flock, discuss with the stockperson and farm manager any areas of concern to be addressed, and review the VHWP.

It would be preferable if the visits could be carried out by the same vet in order to give continuity and consistency of advice. The producer should be in active communication with his veterinary surgeon and the vet should have an up-to-date working knowledge of the farm, its management and the ongoing health status of all birds kept on the premises. This vet, who must be named in the VHWP, is responsible for overseeing the drawing up of the VHWP on the first visit as well as the annual review.

For producers new to poultry production, a visit by the veterinary surgeon should be made prior to or soon after the arrival of the birds to discuss all aspects of health monitoring. Wherever possible, the VHWP should be in place prior to the birds arriving on the premises.

Contents

Introduction

The Veterinary Health and Welfare Plan (VHWP) is a document which is developed by the farm personnel and their veterinary surgeon to encompass all areas of laying hen and/or pullet welfare. It attempts to identify and define areas of management and husbandry where agreed activities and protocols are aimed at best practice for the maintenance and improvement of the flock health status and welfare. It should set out objectives and aspirations, which are regularly reviewed and updated.

See RSPCA welfare standards – H 1.1

The initial VHWP visit should establish the performance of the unit, and agree and record reasonable targets, routine monitoring and the diseases known to be present. Subsequent visits should consider performance and disease relative to the VHWP. Performance or disease problems outside the expected levels should then be investigated and discussed. If necessary, the VHWP should be amended in order to reflect events and achievements. Ideally, the same vet should be responsible for dealing with the VHWP on any one farm. It is important that the visiting vet develops a full knowledge of the unit, and inspects each flock and all areas of the unit during the visit or – on large units – inspects a significant representative sample, to obtain a true feel of the performance of the unit.

The VHWP does not have to be complicated. However, it is important in terms of explaining the procedures and protocols for the prevention and control of problems and diseases that have been identified on any particular farm. It is also important that the document should be succinct and precise and transmit information that is useful to the owner, managers and stock-keepers on a farm. It should give precise and understandable information that can be easily referenced, and any third party reading it should easily be able to understand the current situation on the farm and the current actions that are taken to control and reduce any problems.

Visiting vets should be aware of the RSPCA welfare standards and should keep these in mind when advising their client. Many of the points suggested and raised in these guidance notes will be recorded as the vet inspects the unit. These notes could either be photocopied or typed in precise form and added to the VHWP as evidence of the matters discussed, and advice given, and also to indicate that important areas of concern have been noted.

The producer should discuss with his veterinary surgeon any minor or major non-compliances following RSPCA assessments, relating to bird health or welfare.

The producer should also provide a production report for the Official Veterinarian (OV) receiving hens at depletion as required under Meat Hygiene Service rules. The veterinary surgeon should also liaise with the OV at the processing plant receiving birds from the premises.

Maximising laying hen and/or pullet health and welfare is the overall aspiration of the VHWP.

Flock health including vaccination and treatment

a) Rearing history/requirements

There is a need for liaison with the rearer to establish the producer's requirements, including bird numbers, age at transfer, bodyweights and vaccination programme. These aspects are very important in relation to subsequent health and performance.

b) Flock inspection

See RSPCA welfare standards – M 3.1, M 3.2, M 3.3, M 1.6, H 2.1

Regular flock inspections are essential to help maintain optimal health and welfare. All flocks must be inspected at least three times a day with the first inspection soon after lights come on or early in the morning, again at midday and late afternoon/early evening. General signs of health and calmness should be looked for and any unusual behaviour investigated. Staff training in recognising signs of health and ill health is essential and should be organised in conjunction with the supervising veterinary surgeon. Any sick bird must be removed, culled and stored in designated bins prior to disposal. If sick or injured birds are culled, the number and reason for culling must be recorded.

Feed, water, ventilation and lighting systems should also be checked and any faults rectified in order to maintain them in working order, together with a general assessment of the house and range environment.

See RSPCA welfare standards – M 4.1, M 4.2, M 4.3

Nest boxes should be inspected at least daily for mortalities.

c) Sick birds

See RSPCA welfare standards – H 2.2, H 2.4, H 2.5, H 2.7

Signs of general flock ill-health detected by the stockperson should be discussed with the veterinary surgeon without delay. Specific attention should be paid to signs of respiratory ailments and feather cover. Sick birds must be removed immediately from the main flock and an assessment of their condition made. The decision and choice of treatment may require submission of samples or birds for examination based on veterinary advice. The veterinary surgeon should direct the stockperson on any appropriate actions or medication, including dosage regime and duration of treatment. All such treatments should be recorded. The stockperson should advise the veterinary surgeon of the outcome of such treatments. If recovery is not anticipated, the bird must be dispatched quickly and humanely.

d) Casualty killing/slaughter

See RSPCA welfare standards – H 2.2, H 2.3, H 2.4, H 2.5

Should birds need to be culled, as a result of ill heath or injury, this should be undertaken by someone trained and competent to perform the task. A slaughter license is not required in such cases. Injured or sick birds that do not respond to treatment should be culled as soon as possible by the most humane method available.

Neck dislocation must ensure immediate severance of the spinal cord and major blood vessels. It is not recommend for the routine slaughter of birds and should only be used in an emergency or for the culling of very small numbers of birds where alternative methods are not available. This is due to the difficulty in inducing immediate unconsciousness where neck dislocation may not consistently concuss the brain. Neck crushing must never be used.

Alternative methods are hand held electrical stunning, followed immediately by neck cutting or percussive stunning. Only specialised equipment designed for percussive stunning (e.g. the Cash Poultry Killer (CPK)) must be used. This method must ensure an effective blow to the skull sufficient to cause immediate concussion and should only be used by trained stockmen.

Hand-held, low-voltage electrical stunners may also be used on farm. When using this method, care should be taken to ensure that the electrodes are correctly placed, on each side of the bird's head, spanning the brain.

e) Health targets and monitoring

See RSPCA welfare standards – H 1.1, H 1.3

An agreed approach should be set out for an ongoing health assessment by the stockperson, which should include the following:

- detailed recording of mortality (including culls) together with any known causes
- significant clinical disease or ill health
- tolerance limits for significant diseases/conditions
- culling and other performance data (e.g. egg production and egg quality, food intake, weight gain, feather cover and respiratory problems)
- bodyweight at point of lay, including evenness, with regular monitoring up to peak production.

When tolerance limits are exceeded, an action plan should include some or all of the following:

- submission of birds for post mortem examination
- appropriate samples from the flock for diagnosis (e.g. blood samples, faeces, environmental samples)
- site visits where significant disease problems exist.

A representative number of pullets (100 minimum), from different areas within the house, should be weighed each week until at least 30 weeks of age. Weights and percentage evenness should be compared with breed targets or expected performance. Figures should be recorded and graphed against breed target. If significant discrepancies are identified their cause must be investigated without delay. Regular weighing throughout production can help in overall flock health assessment.

f) Egg peritonitis

See RSPCA welfare standard – H 1.8

This is probably the most common infectious cause of mortality in laying hens, frequently occurring as the end point of any stress on the bird and its reproductive tract. Peritonitis refers to inflammation of the body cavity where yolk material from the ovary irritates the abdominal organs. This material can become infected with bacteria, predominantly E. coli, leading to toxaemia and death. The causes of this condition are many and varied including physical stress, viral disease, parasitic disease or environmental shortcomings. It is rarely due to a single disease entity. Reduction of all such stresses helps reduce incidence. In acute outbreaks, antibiotic treatment may be necessary to reduce mortality. (NB note any necessary withdrawal periods for eggs with any medications used). Outbreaks of egg peritonitis and their outcome should be recorded in the VHWP.

g) Gumboro disease

See RSPCA welfare standard – H 1.9

Gumboro disease is a highly infectious viral infection that can cause up to 70 per cent mortality in commercial layers in rear. Effective control is achieved by a combination of the use of live vaccines via the drinking water, coupled with good biosecurity and effective disinfection at turn around.

h) Internal parasites

See RSPCA welfare standard – E 3.1, R 1.7, R 1.8

Internal parasites such as coccidia and nematode worms (roundworm and hairworm) can cause significant morbidity, loss of condition and even death if poorly controlled.

(i) Coccidiosis

This parasitic infection of the intestines can lead to gut damage and, in severe infestations, death of birds. More commonly, poor control of sub-clinical infection reduces feed conversion, or leaves pullets with chronic irreversible gut damage. Such flocks may be uneven or underweight at grading, and may not perform to their full potential in lay. Currently, effective control is achieved with drug treatments in feed that suppress oocyst output. These may involve the use of ionophores or chemicals on a step-down programme to ensure a good build up of immunity in pullets. To avoid problems with drug resistance and continuous drug treatment, and help ensure even and target weight pullets, a live attenuated oral vaccine (Paracox: Intervet/Schering-Plough Animal Health) is available. This vaccine can be administered via the drinking water or feed as a single dose between day old and nine days of age. All treatment/vaccination strategies should be supported with effective biosecurity. The use of a disinfectant with proven efficacy against coccidial oocysts will reduce challenge pressure. Maintenance of good friable litter will reduce oocyst build up.

(ii) Worms

Worm infections cause damage to the birds' guts. This may result in a variety of problems including:

- loss of shell colour and strength, yolk colour and egg size
- poor body weight gain leading to unevenness or sick birds
- increased cannibalism through vent pecking due to straining
- death, in very heavy infestations.

There are three main worms that can cause problems in free-range birds:
Roundworms (Ascaridia galli) – these are the biggest and most common. They are white, up to two inches long and may be visible in droppings in heavy infection.
Hairworms (capillaria) – these are small, hair-like and are barely visible to the naked eye, but can cause a significant amount of damage even in moderate infestations.
Caecal worms (Hetarakis gallinarum) – these worms spend most of their time in the lower end of the gut, the caecae. Often, they cause no harm in themselves but can carry another parasite, histonomas, into the birds. Histomonas causes blackhead. Controlling one parasite can therefore help control another.

Birds become infected by picking up worm eggs from grass, soil or faeces. The worm eggs need warm, moist conditions to develop outside the bird, which is why problems are frequently worse in the spring and summer. It is important to monitor for worm burdens which can be identified by examination of faeces, culled birds, or worm egg counts on bulk faeces. Effective control is aimed at breaking the cycle of infection.

For free-range flocks, the VHWP should contain details of the worming programme. Pullets should be wormed on leaving the rearing site and then as regular as necessary to avoid subsequent build-up, the programme being determined on veterinary advice, previous site experience and the results of regular monitoring. If heavy worm burden is suspected, birds should be examined by post-mortem and treated accordingly. The attending veterinary surgeon will be able to advise on an appropriate worming product. Whilst strategic use of in-feed worming will help to reduce the challenge this needs to be combined with the use of paddock rotation, tilling of the land to remove eggs, good drainage and the removal of heavily contaminated soil around the house before new pullets arrive.

(iii) External parasites – red mite

See RSPCA welfare standard – E 3.1, H 1.8

Red mite infestations can cause irritation, anaemia, morbidity, depressed egg production, poor egg quality and even death of birds if inadequately controlled; every effort must be taken to reduce the threat.

Control strategies involve three broad areas:

- treat the houses effectively at site depletion
- monitor the house and birds during the life of the flock, and react to ANY signs of infestations immediately
- prompt treatment of birds and/or accommodation even if only light infestations are identified.

Breaking the cycle of re-infection when the house is empty is the most effective approach. A variety of products are now used but not all are licensed for use in animal accommodation or for direct application to birds. Specialist advice should be obtained for the most effective control. The three chemical groups that are generally used to control red mite (organo-phosphates, bendiocarbs and pyrethroids) should be used in rotation to minimise the risk of resistance problems. Other natural products may be considered but their effectiveness must be carefully monitored.

When treating for red mite with birds present, care must be taken to avoid any contact with the birds or eggs, concentrating on mite harbourages, e.g. perches and nest boxes.

Red mite can be a severe problem during the summer months when weather conditions are warm and mites are able to multiply quickly. Even light infestations can irritate the birds leading to poor performance and feed intake. In the summer months it is likely that treatment will be required at approximately six weekly intervals. If 'blood spotting' is seen on eggs, the situation must be considered serious and immediate action taken.

i) Brachyspira

Brachyspira is a spirochaetal infection of the intestines of a number of avian species capable of causing a variety of health and production problems. These may include frothy or fluid droppings, poor weight gain and possible egg quality and number issues. A variety of species of Brachyspira may be demonstrated in the birds intestine. Whether or not they may be associated with flock problems seems to depend on the species of Brachyspira involved, the weight of challenge or the presence of other infections or predisposing factors.

Diagnosis of this infection requires laboratory diagnosis on very fresh droppings or culled birds. Certain specific treatments are available and may be necessary following diagnosis. A significant trigger factor appears to be allowing birds access to poor quality drinking water (e.g. from dirty puddles on range). Adequate drainage of range areas to avoid significant poaching is essential and badly affected areas of the range may need to be temporarily fenced off.

j) Respiratory Viruses

The signs of respiratory problems may include sneezing, head swelling, conjunctivitis or nasal discharge.

Respiratory problems in birds are especially common during the winter months. A number of respiratory viruses (e.g. Infectious Bronchitis (IB), Avian rhinotracheitis (ART, TRT), and bacteria (Ornithobacterium rhinotracheale, Pasteurella spp, E. coli) may be involved.

Dust, ammonia and other gases, and other factors associated with poor ventilation, can contribute to respiratory problems.

Control of respiratory disease involves the provision of effective ventilation to ensure good air quality, clean drinking water and targeted vaccination and treatment where appropriate. Vaccination and monitoring through blood sampling should be outlined in the VHWP.

k) Antibiotics and other medication

See RSPCA welfare standards - FW 1.5, H 1.17, H 1.18, H 1.19, H 1.20, H 1.21, H 1.24

On occasion flocks may require medication. This must only be under the supervision of the attending veterinary surgeon and only using licensed products with adherence to any withholding period for eggs or end-of-lay hens.

The VHWP should list the name of the person responsible for the control and administration of any medicines and a record of all used must be maintained, including batch numbers, in an on-farm medicine book. Unexplained mortality must be examined via post-mortem prior to any treatment being administered. All medicines must be stored in accordance with manufacturers instructions and remain clearly labeled

Medicines must be kept in a secure, lockable store, separate from food producing areas. If any medication is required for the flock, this must be recorded in the on farm Medicine Record Book. Details to be recorded must include:

- date of administration
- product name, batch number and expiry date
- the amount of product used
- the number of birds treated
- the withdrawal period for eggs and meat.

All necessary withdrawal periods must be strictly adhered to and any feed spillages occurring during the treatment period should be cleared up to prevent birds having access to treated feed during any withdrawal period.

I) Vaccination

See RSPCA welfare standards – H 1.19

Pullet rearers should ensure that vaccination programmes are up-to-date and completed before the birds are transferred to the laying unit. There should be active communication between the pullet rearer and the egg producer to ensure that birds have been given appropriate protection against any significant diseases which have been identified previously at the egg laying unit, and for which a licensed vaccine is available.

Any significant infection of birds in lay may cause morbidity and sickness; if feed or water intake is suppressed, then egg output will suffer. In addition, certain viruses can have a direct effect on the ovary or oviduct, again reducing egg numbers or adversely affecting egg quality (i.e. shell colour and strength, yolk colour, quality of albumen etc). The VHWP should incorporate effective measures such as a vaccination programme, to ensure that birds are protected from the following:

- diseases known to be active on the farm
- diseases active on premises to which birds may be moved.

Effective vaccination strategies against most viral diseases are available. Most vaccination programmes include live primer and point of lay inactivated vaccines against Newcastle disease, Infectious Bronchitis (IB) and Egg Drop Syndrome (EDS). Depending on local conditions on the laying site, vaccination against Infectious Laryngotracheitis (ILT), avian pneumovirus infection (also known as TRT) and IB variants may be necessary. Formulating the most effective vaccination strategy depends on a good working knowledge of the viruses active in the area.

People responsible for administering vaccinations by injection must be able to demonstrate that they can handle and vaccinate birds carefully without causing unnecessary distress and that their injection technique does not cause any avoidable damage to the birds.

All vaccines and vaccination equipment should be stored in accordance with manufacturers' recommendations.

m) Salmonella control

See RSPCA welfare standards – H 1.1, H 1.5

Effective Salmonella control involves preventing the introduction of Salmonella onto the farm and preventing the spread of Salmonella if it is already on the farm.

All birds entering the farm must have received a full salmonella vaccination programme (according to vaccine used, the manufacturers instructions and detailed veterinary advice) and have been swabbed and declared negative for salmonella infection (using a DEFRA registered laboratory).

In order to reduce the risk of infection on the laying farm, a high level of biosecurity must be practised at all times (see Biosecurity section). Salmonella can be introduced on to the farm by rodents (between flocks and contaminated feed stores), wild birds (potentially infected themselves or they may carry the bacteria on their feet), domestic flies and beetles. Producers must ensure that they have adequate rodent control procedures in place on the farm, including adequate pest proofing of feed stores. Visitors may also be a potential source of infection, as the bacteria may be carried on clothing and equipment. People may also be asymptomatic carriers and shed the bacteria. All visitors to the site must be recorded in the visitor's book and all must practice strict biosecurity (see visitors section). The Salmonella bacteria can persist for a long time in the environment and therefore subsequent flocks may be infected if a previous flock was Salmonella positive. All buildings, surfaces and equipment should be easily cleaned and disinfected and adequate time should be allowed between flocks if the previous flock was Salmonella positive.

Flocks should be monitored frequently for possible Salmonella infection. In cases of positive samples appropriate action must be taken.

See RSPCA welfare standards - H 2.6, H 2.7

Feeding Programme

See RSPCA welfare standards – FW 1.1, FW 1.2

Feeding equipment must be operated in such a way that ensures the hens are fed ad-lib, thereby ensuring there is no competition for feed. Professional advice should be taken from a feed specialist on the most appropriate feeding programme for birds and expected performance.

Feed equipment should be inspected frequently and checked for mechanical breakdown, particularly first thing in the morning and at the end of the working day. Breakdowns must be rectified immediately and essential spare parts stocked on the farm to ensure birds are never without feed. In the event of a major breakdown, feed tracks must be replenished manually.

The quality of the ration must be agreed with the feed specialist to ensure that the hens' daily nutritional requirements as specified by the breeder's manual are met. Further adjustments to the ration may be required to control egg weight with the aim of not exceeding the breeder's target.

If hens are failing to eat sufficient amounts, the cause must be investigated. If hens are consuming excess amounts, i.e. in periods of very cold weather, care must be taken to avoid excess egg weight; the diet should be adjusted accordingly in conjunction with feed specialists' advice. Check weighing (minimum of 100 birds) should be done regularly, compared with breed target, and appropriate action taken.

A sample of each batch of feed must be maintained on the farm for a minimum period of three months, clearly labelled and stored in cool dry conditions.

Environment

Monitoring the environment to ensure that air quality, temperature and litter conditions have maintained satisfactory levels helps to optimise the health of the birds up to the time of removal. This should be done by a visual assessment and regular flock inspections supplemented by measurement and recording as appropriate. Provision must be made to ensure that hens have access to a thermally comfortable environment at all times.

See RSPCA welfare standard - M 1.6

a) Brooders

See RSPCA welfare standards – E(P) 2.1, E(P) 2.2, E(P) 2.3, E(P) 2.4, E(P) 2.5

Regular brooder servicing and maintenance must be carried out to ensure that brooders are working effectively and to prevent high levels of carbon monoxide. Bird behaviour should be closely monitored to ensure chicks have access to a thermally comfortable environment at all times.

b) Litter management

See RSPCA welfare standards – E 3.3, E 3.5, E 3.6

The management of litter in poultry houses can have a considerable, direct effect on the health and welfare of birds. The aim is to provide the birds with daytime access to dry, friable litter, shavings or chopped straw being the preferred material. Hard, capped litter must not be allowed to build up and should be loosened regularly and new material added. Selection of suitable litter material must take into account the age and number of birds held, the length of time the birds remain in the poultry house and how much litter will be needed.

Poor litter management, which results in litter becoming wet, may lead to the following:

- excess ammonia, as bacterial growth may increase in damp conditions
- ammonia damage to the respiratory system which can predispose birds to respiratory infections
- Keratoconjunctivitis (ammonia blindness) - caused by ammonia fumes emanating from poorly managed litter in an inadequately ventilated environment. Birds may become blind as a direct result of the damage caused to their eyes by the fumes.
- wet litter may increase coccidiosis, as coccidial oocysts mature more rapidly in damp conditions
- infection and lower performance
- litter beetle - a potential carrier of many poultry diseases.

In order to maintain adequate litter depth, litter may need to be re-spread particularly at the ends of the shed.

In order to help maintain litter quality, drinkers should be managed in such a way as to avoid spillages and outside drainage should ensure ground water does not enter the manure pit.

c) Ventilation

See RSPCA welfare standards – E 1.1, E 6.1, E 6.3, E 6.5

The VHWP should contain details of the desired temperature ranges. Consideration should be given to using cycle timers in order to ensure optimum air quality at all times.

The VHWP should also contain a record of the checks of the high temperature alarms (weekly) and their maintenance, along with daily maximum and minimum temperatures. A heat stress strategy should be in place to ensure that all available measures are employed, including the use of medium range weather forecasts, in order to prevent heat stress occurring. Once buildings are in place, preventative action is restricted to ensuring that equipment and back-up facilities are in place, increasing ventilation, the use of internal circulation fans, and not over-stocking. Action to be taken in the event of birds being heat stressed should also be included.

A cold stress strategy should also be in place, as some houses may have difficulty in maintaining adequate temperatures in winter months whilst allowing birds access to the range.

d) Management and quality of the range area for free range flocks

See RSPCA welfare standards – R 1.1, R 1.4

Free range conditions can offer considerable benefits to bird welfare, provided that the range area is well managed and the birds are offered suitable protection against inclement weather and predators.

Active range management will ensure that the most suitable conditions are provided in order to encourage birds to roam. Examples of active range management include the positioning of shade and shelter at varying distance from the house and the rotation of artificial shelters in order to prevent poaching of the land around them.

Consideration should also be given as to the need to restrict access to certain areas of the range as and when necessary in order to prevent poaching of the land. Producers should also appreciate the need to take individual flock behaviour into account. Some flocks may be reluctant to range and therefore the site of shelters may need to be adjusted to provide a sheltered route onto the range.

Birds should be introduced to the range area as soon as possible to encourage ranging behaviour.

e) Lighting programme

See RSPCA welfare standards – E 4.1, E 4.2

The VHWP should contain details of the lighting programme, and this should be linked to the rearing programme. Light intensity should be sufficient to encourage activity and movement around the house. At housing, the lighting period should be extended to 11 hours in order to stimulate feeding and drinking. The photoperiod should be extended to 15 or 16 hours gradually, depending on the weight of the birds.

f) Nest box training

Nest boxes should be available to the birds one week after housing (although this may vary depending on the age of the birds when placed) and access only denied for the period two hours before lights-out until lights-on. With the onset of lay, flocks should be inspected more frequently and any floor eggs collected promptly each morning to discourage this practise. Access to any obvious corners or dark areas should be denied. If floor egg laying persists in any area to the extent that there is a risk of loss due to smothering, consideration may be given to the use of electrified wire. However, this should only be used as a last resort; the use of physical barriers rather than electric wire should be considered in the first instance. Attention must be paid to any nest boxes being over-used; any such birds should be spread out between other boxes.

g) Broodies

The VHWP should contain details of action to be taken in the event of hens becoming broody. Broody hens may pose a problem, particularly in the summer months, causing them to lose condition and possibly prevent other birds using the nests. For example, nests should be checked daily in the afternoon period and any such birds removed immediately to a pen constructed over the slats, complete with feed and water, for 7-10 days before being returned to the flock.

Stock-keepers

See RSPCA welfare standards – M 1.3, M 1.5, M 1.6, M 2.1

The welfare of the birds and maintenance of their health will best be achieved if the stockpersons responsible for their day-to-day care are fully aware of the problems which can lead to a deterioration in the birds' health and well-being. All newly-appointed stockpeople can benefit from training to raise their awareness of potential problems and provide them with the necessary skills to take an appropriate course of action. The content of the training programme may include:

- prompt recognition of signs of health and ill health
- identification of welfare problems
- awareness of legislation and welfare codes
- safe use, handling and storage of medicines
- application of vaccines
- ongoing husbandry and management skills appropriate to the farm.

See RSPCA welfare standards – E 3.3, E 3.6, M 1.1

Biosecurity

See RSPCA welfare standard – M 1.5

The VHWP should contain details of the biosecurity policy, the aim of which is to prevent in the first instance, the introduction of disease and parasites on to the farm and subsequently to prevent the spread of any disease or parasites within the farm.

Disease agents can be introduced on to a farm by birds, people, equipment and vehicles. Control over birds and visitors entering the farm will help to eliminate the likelihood of transmission of the disease to a unit. The veterinary surgeon may discuss the development of a biosecurity strategy with the producer, using the HACCP risk assessment appropriate to the particular site to limit introduction and spread of significant disease organisms.

a) Visitors

All unauthorised personnel must be prohibited from the vicinity of the house and range area, if present. Any visitors to the farm must wear appropriate protective clothing; visitors must not be allowed onto the premises in any clothing that has had contact with other poultry. A full record of all visitors must be kept, including details of recent visits to other poultry sites and any illness that could introduce a disease challenge. All visitors and farm personnel must use the foot dip provided before entering the house, which should be replaced at least weekly, or more frequently if soiled, using a Defra approved product.

All delivery lorries entering the farm must be, wherever possible, in a clean condition. Vehicles that must enter should be subject to wheel spray disinfection. All palletainers arriving on farm must be in a clean condition or rejected. Any soiled egg packaging material should be rejected or burnt on site. All lorries and their crates must be washed before arriving on farm for the collection of spent hens.

b) Protection from other animals

See RSPCA welfare standards – M 5.0, M 5.1, M 5.2, M 5.3, M 5.4

Effective, humane pest control measures will help to ensure that contamination of feed is minimised and that the birds are protected; for example, by covering food storage containers to prevent entry by pests.

Buildings must be bird proofed wherever possible and the routine prevention of rodents must be undertaken. Any baiting points should be inspected at lest once a week and their position recorded. Pest control contractors should undertake regular visits, during which all baiting points are inspected and replenished, and additional baiting undertaken where any rodent activity is evident. This visit must include inspection of the house interiors, including the manure pit, house perimeters and adjacent hedgerows. A written report should be left on the farm and any recommendations immediately actioned. In the event of evidence of infestation between routine visits, the contractor should be notified and additional visits made if necessary.

Measures should be taken to prevent other animals, including domestic pets, entering the house and egg collection area.

The area surrounding the house must be kept clear of debris and vegetation at all times in order to reduce the number of potential harbourages for pests.

Feed spillages around feed bins must be cleaned immediately. The provision of a suitable storage area for litter material, such as shavings and straw, which eliminate the risk of spoilage, will avoid future litter problems.

The feeding of hens on the range is discouraged, as it may encourage wild birds, pests and/or predators onto the range

c) Fly control

Fly populations should be monitored and approved treatments used where fly infestation is evident. The manure pit should be kept dry and warm wherever possible to encourage dung beetle activity.

See RSPCA welfare standard – FW 1.7

d) Cleaning regime/schedule

The establishment of a cleaning regime will help to avoid future health problems. Attention should be paid to the thorough cleaning of buildings following depopulation and should include the complete removal of litter and disinfection of the unit, removal and cleaning of feeders, drinkers and brooders.

All products used for cleansing and disinfection should be Defra approved in a well integrated and planned programme, using products with proven efficacy. Take professional advice in the application of all products.

Below is an example of a cleaning schedule:

The following tasks are to be undertaken prior to re-housing a new flock:

Task	**Produce Used** (if applicable)	**Tick** when done
Dust blown down from ceiling & fan boxes		
All moveable equipment and floors removed		
Manure removed from pit and scratching area		
Slatted floor sections scraped		
Slatted floor sections washed		
Perches washed		
Feed troughs washed		
Nest box mats washed		
Internal walls washed		
Scratching area walls & floor washed		
Nestboxes and belt washed		
Drinkers de-scaled		
Egg collection area washed		
Floors disinfected		
Walls disinfected		
Nestboxes disinfected		
Scratch area floor disinfected		
Drinking system disinfected		
Feed bin cleaned		
Feed bin disinfected		
Feed room cleaned		
Floor & walls treated for mite		
Nest boxes treated for mite		
House fumigated		

In addition, the egg collecting room should be kept clean and tidy and any egg breakage's cleaned up immediately, with particular attention being paid to the egg collecting table and belt. Hand washing and drying facilities should be provided and floors should be cleaned daily. Smoking, eating and drinking should be prohibited in this area.

Preparation of the unit

See RSPCA welfare standards – M 1.5, E 3.1, E 3.3

Preparation of the unit and equipment should always be complete and all amendments fully operational in time to receive a new group of birds.

All-in/all-out system
In order to ensure that all birds are maintained in optimum conditions during rearing, it is essential that maximum control is achieved over all environmental factors. The most effective method of control over disease is to adopt preventative measures which minimise the risk of birds coming into contact with infective agents.

These include ensuring that each flock of birds is introduced into a properly cleaned and disinfected building which has been adequately prepared to receive them at their appropriate stage of rearing. Birds develop an increasing level of immunity as they become older and avoidance of mixing birds of different ages is very important. Each flock should be treated as a separate entity and subsequent care and treatment should be standardised for that flock. Introduction of birds into an established group or transference between different flocks can introduce potential disease challenges.

See RSPCA welfare standards – M 2.1

Feather pecking

See RSPCA welfare standard – H 1.10, H 1.11, H 1.12, H 1.13, H 1.14, H 1.14.1, H 1.15

It must be recognised that feather pecking can be a serious problem and wherever possible steps should be taken to avoid the vice developing. There is no single causal factor but it is often the result of a stress situation. Therefore, the aim must be at all times to create a 'stress-free' environment, built around the avoidance of any changes in the flock's daily routine.

Environmental enrichment, such as the provision of straw, perches and pecking blocks can help to avoid aggression and feather pecking, and may reduce the need to beak trim altogether. Where environmental enrichment devices are introduced into a unit, consideration should be given to the risk of disease entry if straw is used, or methods of ensuring that an enrichment device can be cleaned between different flocks.

The producer should check conditions on the rearing unit with the pullet producer prior to delivery of the pullets in order to minimise any changes, and therefore stress, associated with transfer to the laying unit. If early signs of pecking are evident (feather removed from back) the light intensity should be decreased slightly and further reductions made as necessary. Severe cases of pecking and cannibalism are rare but must be investigated immediately in conjunction with the attending veterinary surgeon, including analysis of the feed ration.

Summary

The VHWP should be aimed at reducing the risk of disease challenges and maximising the health and welfare of each flock. It is very important that the producer has a good awareness of all known sources and causes of disease to prevent disease outbreak and that all stockpeople responsible for the day-to-day care of birds can recognise the signs of ill health, disease and poor welfare at an early stage, in order to ensure appropriate action is taken as soon as possible.

Accurate and up-to-date records will enable potential problems to be detected and rectified at the earliest opportunity. It is, therefore, advantageous to have agreed tolerance limits on the various areas of health and production whereby an appropriate action plan is followed to address the area of concern effectively. At the end of each flock it is advisable to review the records and assess the effectiveness of any action taken to remedy the birds' health during rearing. This will allow any alterations in practice to be in place before the arrival of a new flock.

Effective use of a practical veterinary health plan involving regular communication between the rearer, producer and veterinarian will be a major contribution to maintaining the health and welfare of your flock.