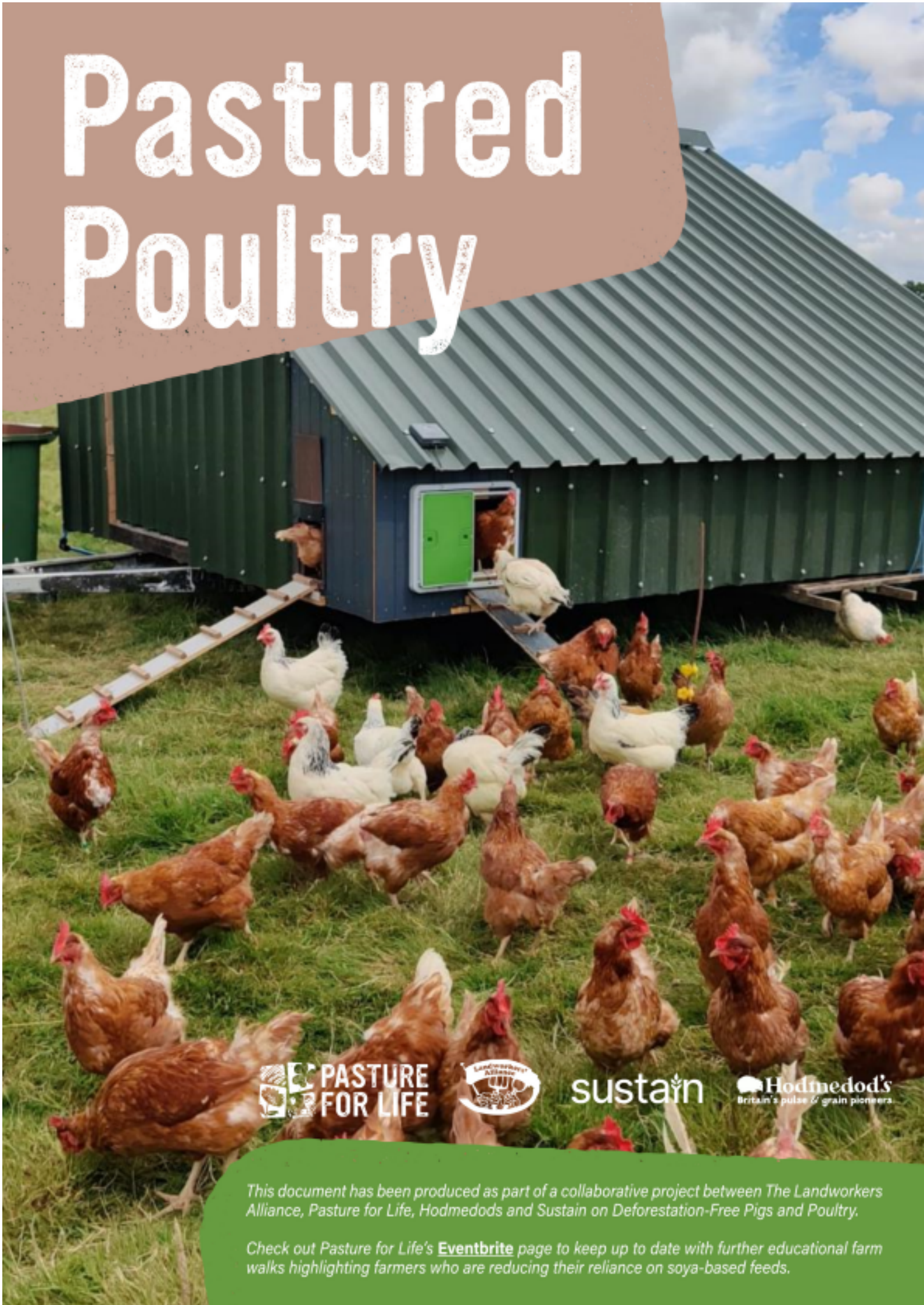


# Pastured Poultry



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Hodmedod's  
Britain's pulse & grain pioneers

*This document has been produced as part of a collaborative project between The Landworkers Alliance, Pasture for Life, Hodmedods and Sustain on Deforestation-Free Pigs and Poultry.*

*Check out Pasture for Life's [Eventbrite](#) page to keep up to date with further educational farm walks highlighting farmers who are reducing their reliance on soya-based feeds.*

# Introduction

Across the UK, many farmers are working to reduce their dependence on soya. If you are thinking about setting up or expanding a pastured poultry enterprise this document will help highlight some of the things you will need to think about. It poses questions for you to consider rather than give specific blueprints for how to do it (because invariably every farm and farmer is different, and working within a different context). It is intended to cover all poultry species, whether for meat or eggs: chickens, ducks, geese, turkeys, guinea fowl, etc.

It is not an exhaustive list so keep an open mind and be prepared to gather information and knowledge from a variety of sources.

## What are “Pastured Poultry”?

A poultry enterprise which generally moves around on pasture, sometimes integrated or “stacked” alongside other grazing livestock to mimic the role of wild birds in nature – playing a key role in controlling parasites and improving pasture productivity. This is in addition to “free-range” or just “organic” where the enterprise might be partially, or fully static.

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## Why do it?

It is important to know **why** you are wanting to start or expand a poultry enterprise as this will help underpin many decisions and keep you motivated through the challenges that come up. It could be:

- To create an additional source of income on the farm
- To improve your pasture and soil health
- To use some of your farm's existing resources and people to spread overhead costs
- To fulfil a market demand or opportunity

## Where to start?

There is a lot to learn so if you are a complete novice it may be worth starting small so that you can learn from small/cheap mistakes rather than big/costly ones, and, importantly, allow time to develop your markets (which is rarely a quick process – organic growth is generally more sustainable long term).

Depending on your scale and intended end product, there are some regulations to be aware of and certain registrations to be made. For egg producers and hatcheries further information is available here: <https://www.gov.uk/guidance/eggs-trade-regulations>

## What is your market?

The size of your market and customer base may define, and have a strong influence on, your scale of enterprise. Who will you sell to? Will you sell direct to local customers, and / or to a wholesaler?

What is the size of this market? How much are they prepared to buy and spend? Is it seasonal e.g. turkeys for Christmas? If your production is seasonal, how will you balance supply and demand through the year?

## What is the route to your chosen market?

How will you get your products to your customers? Via an honesty box at the end of the farm drive? Local deliveries? Farm Shop? Vending machine? Couriered in insulated/protected packaging?

What processing will be required and if so what infrastructure already exists locally, or will be needed? E.g. Poultry slaughter facilities – how far away are they, what do they charge and

how will you arrange transport? Or, where and how will you sort your eggs – with a grading machine or by hand or sell ‘mixed size’ (unsorted)?



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*Note: If you are going to be selling eggs you will need to register your premises with APHA (see link above) and may need to also stamp them and have means of quality control (candling).*

It is necessary to have a dedicated egg packing space that can be kept clean, hygienic and to EHO standards, and somewhere that is not shared with cattle equipment for example. Ideally it should be easy to wipe down, be light and bright for egg quality control, and have dry space for storing boxes and trays. There should be a facility for washing equipment within, or nearby, and it should be warm enough not to freeze in winter, but not get too warm in summer.

Any packaging and labelling will need to take account of labelling legislation, e.g. organic certification requirements, lion coding, advice on storage, BBE dates, etc.

## What will you feed your poultry?

Depending on your particular circumstances, level of certification (e.g. organic) or ethical/sustainable values of production, there are either plenty of options, or very few.

Fully feeding poultry entirely from naturally available foods in pasture, and still expecting a decent level of production is near impossible, but there are still several possibilities for reducing the level of bought in feeds (see next section).

### *Cereal based feeds:*

Whether you will be feeding birds for egg production, or meat production, you will need to think carefully about the best type of feed you provide and how this will vary during the year and during the growth stages of the birds. Speak to your local feed supplier and do your own experimentation if you can.

Soya is a valuable feed source for poultry; it is an excellent source of energy and protein, highly digestible, and has high amounts of the limiting amino acids required for an animal's growth. In the UK, the poultry sector is the biggest consumer of soya, followed by the pork sector. Over the past 50 years, production of soy has increased faster than any other crop, with about 77% of global soya being used as animal feed. Half of the world's soya comes from either the Amazon or other high biodiversity regions. WWF estimated that the land required to grow soya overseas to satisfy the UK's average annual demand between 2016- 18 was an area nearly the size of Wales. Meanwhile, the industry's dependence on imported soya means that volatility of feed prices places farmers in a precarious position.

Understandably, more and more producers are keen to move away from using soya but this is not easy and needs to be balanced with bird welfare, production expectations and perhaps breed choices. You will need to shop around and scrutinise GM and Soya free claims if that is your requirement (n.b. Organic standards allow soya to be included in poultry diets but require that it must be from GM-free sources).

*Top tip: For smaller scale enterprises whereby quantities of feed demand are lower, some feed companies will only supply a minimum tonnage at one time, and usually prefer bulk delivery as opposed to 15 or 20kg sacks. So think about how you will feed practically and weigh up the costs of bulk delivery vs pre-bagged.*

The price of feed has increased significantly in recent years and remains volatile. You may also be able to grow your own but either way allow contingency for feed price increases in your business plan.

### *Grit and Oyster Shell*

Laying birds especially need a source of calcium [carbonate] to help build strong shells and this is best achieved by providing ad lib Oyster shell. Poultry grit should also be provided for birds as it aids their digestion, and they will self-select what they need.

## How to maximise foraging and use of naturally available feed?

Most poultry birds have a natural instinct to forage. How can you ensure they have the opportunity to exhibit these natural behaviours and are reared in such a way that encourages this?

Grass and other pasture flora can form part of the diet for chickens, especially young [short] juicy shoots and leaves, but they will also want to scratch into the earth in search of seeds and insects. Turkeys, ducks and geese don't have the scratching behaviour, but they too can forage and will all eat lower tree leaves, insects, seeds, berries, etc.

The weather, range habitat and ground conditions may affect the birds' ability to forage, and therefore affect rates of hard feed consumption. You may want to move and scatter feed around the range to encourage foraging and scratching behaviour to open up and improve the sward?

If you are following your poultry behind grazing livestock, how can you optimise the interval between species to maximise feed value from fly larvae and other insects?



*Note: Particularly during periods of housing, it can be worthwhile enriching the living environment by hanging food up on walls, or from the rafters, for birds to peck at. However, care should be taken not to have this too high as jumping birds may lead to broken [unlaid] eggs, or worse still to injury! Better to keep food sources no higher than standing head height.*

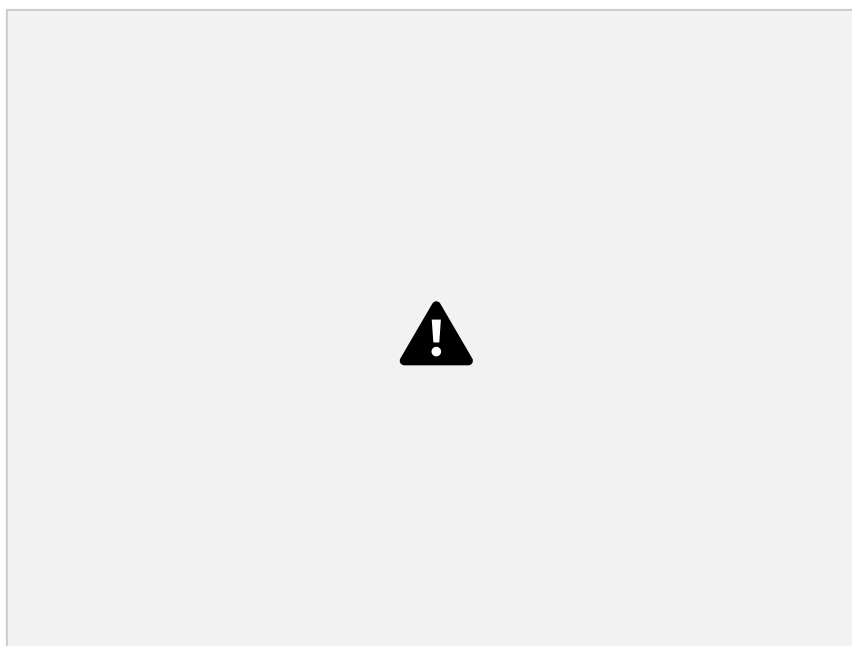
*Laying hen pulling apart cattle dung pat in search of fly larvae*



# Insect protein

In lieu of soya as a source of protein, the possibilities for using insect protein are increasing. Research has gone into the use of Black Soldier Fly (BSF) larvae as a poultry feed, but current UK legislation on 'Processed Animal Proteins' prohibits the feeding of dried insects to livestock, so the larvae can only be fed live. It is possible to set up your own BSF larvae rearing facility on-farm, but there are considerable infrastructure costs involved (e.g. the need for a ventilated container with electricity and water supply, rearing trays and other equipment).

If you are operating a large scale poultry unit, the set up costs may make it a viable option but there are not many farms currently doing it except with high-tech fully automated container systems, so it would be a steep learning curve if you want to try it on a smaller-scale. You also need to have a stable source of free organic waste to feed the larvae on. Due to the controlled lab environment needed for the fly breeding stage, it makes most sense to purchase the BSF eggs on a weekly basis from a company like Beta Bugs who specialises in breeding. From the arrival of a batch of eggs by post to the larvae being ready to feed to poultry, is about a 2 week cycle. They need to be fed chick crumb mashed with water for the first 5 days, and then can be fed on mashed brewers grains or organic pre consumer veg waste for the next 7 days.



*Black Soldier Fly Larvae used to feed poultry*

*Credit: Beta Bugs*

If you would like more info about costs of purchasing BSF eggs or viability of setting up your own insect farming operation, we recommend contacting **Beta Bugs**, who are located near Edinburgh and supply BSF larvae eggs by post.

Check out the Sustainable Poultry Feed webinar for more info: <https://vimeo.com/781372957>

For more info about the legislation surrounding farming insects see:

[https://cdn.zerowastescotland.org.uk/managed-downloads/mf-c\\_6jxfbm-1678698804d](https://cdn.zerowastescotland.org.uk/managed-downloads/mf-c_6jxfbm-1678698804d)



## Which breed to choose?

Think about your farm's context again, and what your production expectations are in order to meet your market requirements. For example, chickens that lay unusual coloured eggs may be less prolific, and therefore cost more per egg, but you may wish to be able to sell mixed coloured eggs as part of your offering, or as your USP. Choose a breed that will be well suited to your system and the end product you are aiming for. Or try a few different breeds initially, or continuously to “spread your eggs”(!) as we know diversity is key to a resilient system.

## Where to source your stock?

You can breed and hatch your own, buy in day old chicks for rearing yourself, or buy in birds partly reared to a certain age – e.g. hens coming into lay around 16 weeks. Bear in mind that breeding and rearing your own involves another set of skills and additional infrastructure, so those starting out with or piloting an egg laying enterprise for example may want to start with ready reared birds. There will be an additional cost of course, but this can de-risk getting started.

Key things to check for when sourcing stock:

- Breed / genetics that will suit your system
- Relevant certifications, e.g. organic, health assurances
- Reputation of supplier (for health and welfare especially)
- Rearing system – will the birds easily adapt to your system of housing, feeding, foraging, perching, nesting, etc.? (For example, hens that will perch correctly and lay eggs in the right place could save you a lot of time and reduce wastage)
- Cost – shop around to get a feel for what is reasonable.

*Note: If you are planning to have more than 50 laying chickens you will need to register with AHPA. [This is under review at the moment, and people are being encouraged to register any birds].*

## Housing

There are any number of housing options so it is important to first think about your specific housing requirements, and how these might change during the year. You will also need to factor in any additional stipulations for certain certification standards – e.g. for organic producers there is a minimum requirement for solid flooring (although this varies between certifiers), for floor space in general, and for perch length and nesting areas.

Assuming you wish to keep your poultry housing moving regularly, some key factors to consider are:

- Capacity – how big will your flock be and what allowances might you need for potential expansion? (N.b. minimum perch space for laying hens is 150mm, more for organic)



- Wheels or skids? And how will you move it – tractor, pick-up, quad bike?
- External dimensions – will you have to squeeze through narrow gateways? How can you ensure stability during high winds?
- Flooring – mesh, slats, solid? Do you want to collect the manure or save labour by having it drop onto the ground? If Organic, how much solid flooring does your certifier require?
- Ventilation – how can you ensure good air quality and temperature? (A bit of air flow is good, but not too much)
- Security against predation and rodents – how can you make it robust, and impenetrable to a cunning fox or strong badger?
- Access – for poultry and humans, and if so what size of opening is needed (n.b. size of opening needs to be proportional to number of birds in flock)? How could you automate the bird access hatches to coincide with daylight hours and reduce labour cost (chickens only - turkeys, geese and ducks don't put themselves to bed)?
- Materials – what longevity do you need? What is your budget? Environmental impact of materials being used, and later disposed of? If you are building your own, where do your skills lie – metalwork, woodwork? What will be best for keeping clean and disease free (e.g. joints in woodwork can harbour red mites unless well treated)? What weight of unit can you withstand – thinking especially about winter conditions when ground is softer?
- Laying facility – traditional static nest boxes, roll away nest boxes or fully automated egg laying machine? Think about labour costs here as it is best if eggs are already clean when collected which means making sure birds do not roost [and poo] in nest boxes. Be sure to also consider any requirements for organic certification.
- Provision for artificial lighting – is this something you will want to do to extend the laying season, and if so how will you power it?
- Food and water provision – do you want to integrate these into your housing unit to make moving easier? If so, how can you make it simple? Water header tank that can be plugged into the mains using a drag pipe back to a hydrant? Feed hopper to quickly deposit feed? And how to prevent rodents helping themselves?

Examples for inspiration:

Some proven designs such as the Ridgedale Egg-mobile make use of old trailer chassis with ready made axles, frames, towing points, and brakes! Other trailed vehicles such as caravans or livestock trailers can also be sufficiently modified for housing and can be a low-cost starting point.

The Polyface 'chicken-tractors' for broilers are generally made on farms and rely on being dragged along on pasture, but these aren't organically compliant at present. MacGregor tunnels on skids are a popular choice for medium scale enterprises, both eggs and broilers.

- Most practitioners tend to multiply their housing units rather than increase their size – being generally better for ease of moving, individual flock management and disease mitigation. If you end up with something too heavy and immobile the likelihood is that it will end up not moving very often, or becoming static – which somewhat defeats the object!

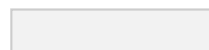




*Ridgedale designed egg-mobile with various automated doors on trial.  
Note wheelie bin for rat-proof feed bin.  
Credit: Pear Tree Farm / Knepp Regen Farms*

*Polyface designed egg-mobile with automated doors and egg-laying machine  
Credit: Paddock Farm*

*Lightweight drag along tunnels giving direct access to the ground  
Credit: Hill Farm Real Food*





*Drag along MacGregor tunnels*



*Converted caravan for layers -  
easily towed and moved to new  
pastures  
Credit: Inkpot Farm*



*Drag along "chicken tractors" for  
broilers - Polyface design, with  
improvements Credit: Nempnett  
Pastures*



## Winter housing

Due to Bird Flu restrictions you may need to consider housing alternatives for periods of 'flockdown'. This could be as simple as parking your housing unit(s) in a barn and covering it/them with fine plastic netting (to make it bird proof ) or rehousing the birds into a barn, stable or polytunnel with suitable bedding, perches, etc. and giving your mobile unit a clean down and rest to break pest cycles. Alternatively, some practitioners using units such as the MacGregor tunnels may simply keep the birds confined to the housing whilst still at pasture,

and provide artificial lighting. See more on Bird Flu below.

## Range

If your poultry enterprise will be following grazing animals then their range will largely be pre-defined, but you may wish to think about extra measures that might improve the habitat for the birds – such as different plant species that they can forage, and maybe trees or shrubbery for shade.

*Note for organics: Soil Association Organic standards specifically require 5% natural cover in the range of poultry, and tall grass/thistles/docks do not count as natural cover. The Association is specifically trying to encourage an uptake of Agroforestry in poultry systems, which has good welfare merits but can be a little more challenging. (Demeter (BDA) and others have a little more detail).*

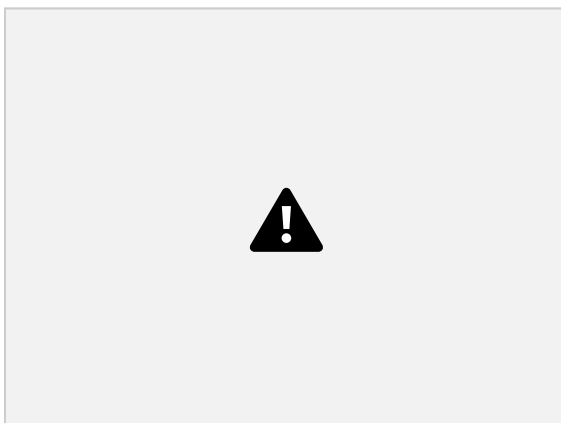
Shade and shelter might be something you want to consider if not provided, or if this is insufficient, you may wish to consider other options too. Eg. Polyface Gobbledygos.

if not  
ound



*Mobile shade and roosting for turkeys  
Credit: Nempnett Pastures*

Chickens especially appreciate the opportunity to bathe in soil or dust to help deter lice and mites for themselves given the chance. How could you provide a



*Dust bath created from old trailer tyre with board screwed to the bottom and fine sand inserted. This is easily rolled into the next area whilst retaining the sand inside the rim.  
Credit: Knepp Regen Farms*

Ducks will benefit from having access to clean water deep enough to get water over their backs – either via access to a permanent pond, or a mobile water feature. Make sure the water source is big enough to stay clean and fresh enough with the number of ducks you have accessing it.

Whatever the species, think about how you can provide for their welfare needs as this will help ensure good health, reduce the need for chemical inputs and optimise levels of production.

## Predation and control measures

Foxes, badgers, mink, stoats, weasels, corvids, and birds of prey can all be potential predators you will have to contend with.

Joel Salatin talks of the best solutions being hot wire or hot lead! George Henderson (of The Farming Ladder fame) swore by placing a metal grate in front of the entrance to his chicken houses – such that his birds could traverse it, but foxes could not. Either way, death for prey or predator can be minimised or avoided with careful preparations.

Electrified fencing is usually the best place to start – see next section.

Frequent moving of laying flocks is thought to sufficiently confuse foxes who are thought to check out a target a day or more in advance of attack.

An increasingly popular solution is to use Livestock Guardian Dogs (LGDs), usually of the Maremma breed originating from Italy where they have been used by shepherds for centuries. They can ferociously deter most predators, but also dog walkers and unfamiliar humans so require careful training, and familiarising them with their territory is essential.

Undertaking a programme of regular predator control is carried out in some cases. Others argue that if nature is already in balance, and predators are able to source their more usual food (e.g. rabbits) in abundance then they may be less tempted by your poultry. However, there does seem to be universal agreement that once a predator has got the taste they will keep visiting until you have nothing left, or you improve your defences/counterattack!



## Fencing

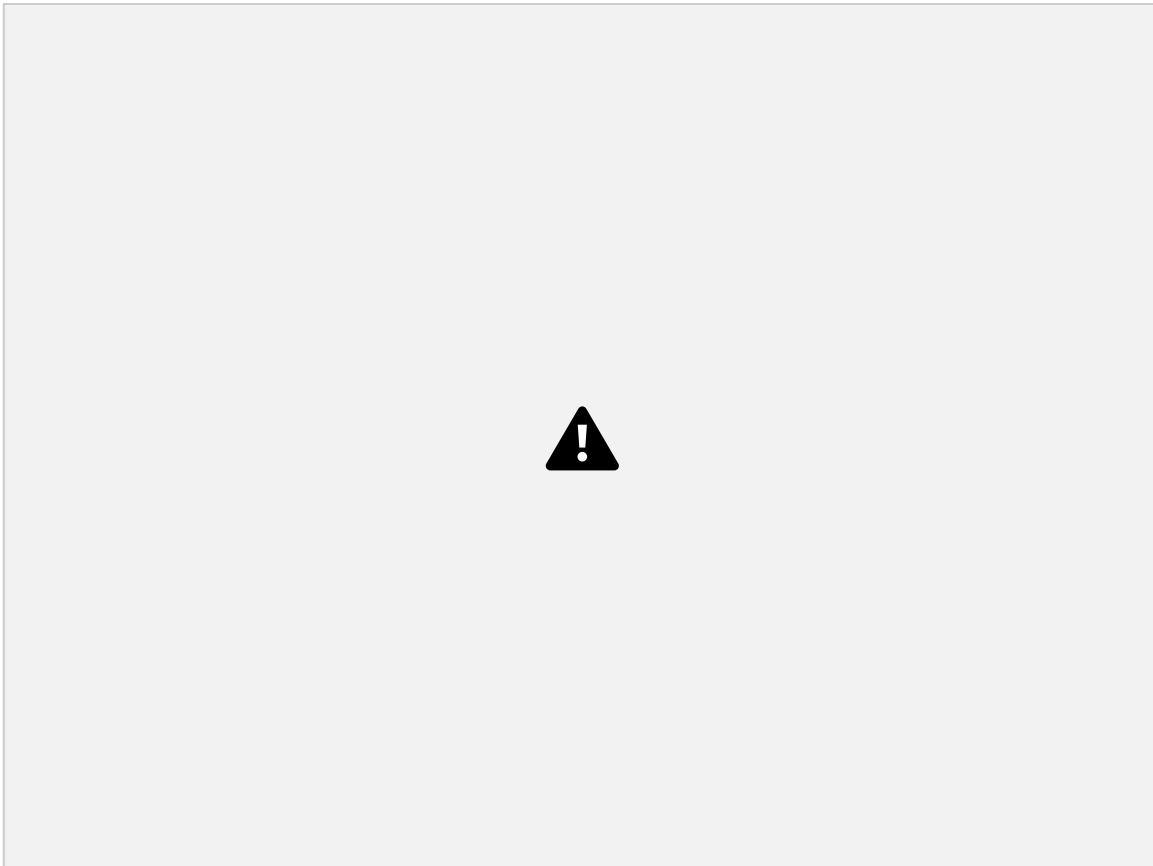
Generally some form of fencing is worthwhile to keep birds contained (and focused in a particular area) and predators out, but not always necessary if predation can be mitigated by other means.

Your fencing needs will be dictated by the scale of your operation and how often you intend to move it. You could utilise temporary mobile electric netting on one hand, or semi-permanent electrified plain wire strands or permanent netting to fence a larger area on the other.

Electric netting with posts that have 2 spikes and a shoulder for pressing them in with your feet are better suited to hard or compacted ground conditions, and can withstand stronger winds. Having shorter lengths of netting is also less cumbersome.

Electric netting will easily short out on grass, so best to have an energiser with a strong output. If you are in proximity to a mains electric supply this can be most reliable, otherwise a portable solar charged unit could be a good solution.

An additional measure can be to string an electrified polywire 25cm or so out from the perimeter of the netting, and at a similar height so that if a 4-legged predator approaches the netting they are likely to get an additional pre-emptive zap!



*Electrified netting with additional fox wire and solar charged energiser mounted on old wheelbarrow base for ease of moving. Note corner string to maintain tension in netting.*

*Credit: Knepp Regen Farms*



## How often to move?

There are many factors that may dictate the answer to this, such as:

- Availability of natural forage within the range
- Build up of manure beneath the housing (ideally you want to ensure this is well spread around)
- Practicalities within the farm's work routine – e.g. doing so on the same day each

week may help with planning and staff resources.

- Deterring predators
- Organic compliance

*Top tip: It is generally easier to move your flock whilst they are shut in their housing.*

## Health and wellbeing

Poultry will be at their most productive and resilient when happy and healthy. Aside from being provided with clean water and fed appropriately their environment can have a large influence on their wellbeing so be sure to consider all aspects of their living conditions and seek to optimise these for your birds.

Stocking densities that are too high can increase the risk of disease, but too low and you might be wasting space. Consider rotating your poultry over different parts of the farm each year to prevent any build-up of disease in the pasture.

If you are providing artificial lighting for laying birds consider how this might impact on their welfare and longevity.

Red mites are a common problem – they hide in cracks and gaps in the housing and creep out at night to suck on the blood of your birds. If you suspect an infestation, it is easiest to find them at night with a torch. You may also notice egg numbers drop and flock health being compromised. A good natural treatment is to scatter plenty of dematiaceous earth around the housing, in the nest boxes and dust bath. Other treatments are available.

Specific poultry health advice can be sought from specialist vets, and there are some useful resources online. If you have over 350 birds in an egg producing flock you will need to test frequently for Salmonella and undergo regular inspection.

Most importantly be vigilant and look out for the bird that may not be perching properly, off its food or alone in a corner.



## Avian Influenza / Bird Flu

At the time of writing Avian Influenza is becoming an increasing threat for wild and domesticated birds across the UK. A consequence of this has been a requirement for all poultry keepers in England and Wales to prevent their flocks coming into contact with any wild birds – and essentially go into “Flockdown”. This has generally meant that flocks are housed indoors or confined to large immobile netted areas for the risk period, and some years have their ‘free-range’ designation removed.

In Scotland however, poultry farmers are only required to increase biosecurity measures and not necessarily lock away their birds.

Either way, the challenges brought by this disease are likely here to stay so have a serious think about how you can minimise the impact it has on your business: can you time your poultry meat production period with the lower-risk summer months? What biosecurity measures can you put in place to minimise risk of infection? What opportunities might there be in having to house your flock during winter months? What would be the impact on the whole farm business if you did have an outbreak?

If you suspect symptoms of Bird Flu you need to report it to APHA immediately and get the carcass checked ASAP.

## Flock termination (layers only)

Keeping hens into old age inevitably means egg production will tail off. Most commercial breeds will peak production in year one, and after moulting will produce fewer, but generally larger eggs in year two. Many producers believe it is not economically viable to keep feeding birds through a moult to then get fewer eggs in the second season, but for others there may be an ethical argument for keeping birds for longer.

Either way, birds will eventually die of natural causes, predation or the need for termination on the basis of economics. Large producers may wish to consider sending the birds off for slaughter to be used as human food (usually lower grade, processed foods due to the nature of their carcasses – as opposed to birds specifically bred for meat production) or pet food. Rehoming birds can be a good alternative for some and allows the birds to live out their lives as backyard chickens. Facebook marketplace can be an effective platform for rehoming, also the Hen Welfare Trust, or you may be able to garner sufficient interest from your own social media following – but be careful not to reduce your egg custom in the process!

## Bird termination (all species)

In the event that a bird is sick and unlikely to recover or poses a health risk to the rest of the flock it is only right to do the kind thing and put it out of its misery. Vets can be used, at a cost, or the quickest and cheapest method is to employ the cervical dislocation technique.



## Knowledge and learning

There are some useful resources available online, and also good advice available from other practitioners, breeders and feed suppliers. There is a Pastured Poultry WhatsApp group which provides a useful forum for exchange of ideas and solutions to common challenges.

Sign up for APHA's bird flu notifications and stay abreast of changes to regulations.

Keep a note of what you are learning too – this can help form a useful manual for when you

need to delegate or have other people covering holidays.

## Useful links

Egg Marketing Standards: <https://www.gov.uk/guidance/eggs-trade-regulations>

Guidance on poultry slaughter:

<https://www.gov.uk/guidance/slaughtering-poultry-rabbits-and-hares-on-farms-for-small-scale-suppliers>

Information on bird flu: <https://www.gov.uk/guidance/avian-influenza-bird-flu>

British Egg Industry Council: Lion Code of Practice:

<https://britisheggindustrycouncil.com/british-lion-code-of-practice/>

British Hen Welfare Trust: <https://www.bhwt.org.uk/>

Featherwel – tips and advice on bird welfare: [www.featherwel.org](http://www.featherwel.org)

Laying Hen Welfare Forum: <https://lhwf.co.uk/>

European research: <http://www.henhub.eu/>

Hennovation:

<https://ec.europa.eu/eip/agriculture/en/find-connect/projects/hennovation-practice-led-innovation-supported.html>

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