



*Farm Health Plans: A practical guide* is one of a range *Animal Welfare Approved* technical papers designed to provide practical advice and support to farmers. For more information visit [www.animalwelfareapproved.org](http://www.animalwelfareapproved.org)

## **SHORT DESCRIPTION OF TECHNICAL PAPER CONTENT**

### **About this technical paper**

This technical paper provides farmers who are participating in the *Animal Welfare Approved* program with advice on the creating a dedicated farm health plan. Introducing a farm health plan – and keeping it up to date – can help prevent health problems in livestock and significantly improve overall farm performance.

### **KEYWORDS**

Welfare; farm and health plan; prevention (of pests and disease); positive health;



## **Animal Welfare Approved Technical Paper No. 10 Farm Health Plans: A practical guide**

*Animal Welfare Approved* has the most rigorous standards for farm animal welfare currently in use by any United States organization. Its standards have been developed in collaboration with scientists, veterinarians, researchers, and farmers across the globe to maximize practicable, high-welfare farm management.

### **What is a farm health plan?**

In all well-managed livestock systems the prevention – as opposed to the cure – of pest and disease problems is as important as high levels of management and husbandry.

One way of ensuring that a preventative approach sits at the very heart of your farm management is to develop an overall farm health plan.

A farm health plan is a working document which explains the management strategy for your livestock, written specifically for your farm. A good farm health plan should:

- Identify all significant livestock pest and disease problems that you might face
- Outline how you intend to prevent their occurrence
- Explain what treatments you will use if pest or disease problems do occur
- Identify how you intend to improve overall herd or flock health – and reduce reliance on veterinary treatments.

### **Why have a health plan?**

One of the requirements of the *Animal Welfare Approved* standards is that the management of livestock on your farm should focus on promoting health rather than simply treating disease. From a welfare standpoint, this means that you should maintain your animals in a way so that don't just 'survive' but so they thrive.

This is sometimes known as the concept of 'positive health'. Positive health is not just about the absence of disease in an animal: it is about achieving a state where the animal's immune system can easily overcome everyday disease challenges.

It is fair to say that, as farmers, if we see a health problem all the time – and lameness is a classic example – then we can start to ‘get used to it’, to accept it as the norm. But in doing so, we can also start to underestimate its importance in terms of animal welfare, as well as the negative impacts on farm performance. In some cases, our perception of what is ‘acceptable’ within a herd or flock might actually include some animals that are actually clinically lame, for example.

But by setting out the limits of acceptability on a range of health and welfare issues – and carrying out regular checks on known farm problems – we can start to get on top of chronic problems on the farm – and improve overall farm performance.

This is exactly what a farm and health plan sets out to achieve: it encourages you to assess the pest and disease risks on your own farm, to record and monitor their incidence, and then enables you to use this information to make management changes or carry out veterinary intervention, if required. It will also help you to see if these management changes are working over time and the farm’s overall performance.

The *Animal Welfare Approved* program requires every farmer to develop their own farm and health plan. To help you to create your own farm and health plan, *Animal Welfare Approved* has designed the following free templates:

- All species section Farm and Health Plan
- Beef Farm and Health Plan
- Dairy Farm and Health Plan
- Goat Farm and Health Plan
- Laying Bird and Breeder Flocks Farm and Health Plan
- Meat Poultry Farm and Health Plan
- Sheep Farm and Health Plan
- Pig Farm and Health Plan.

Each farm should complete the “All Species” template and then the individual species farm and health plans relevant to their farm.

While you don’t have to use these exact templates to produce your farm and health plan, they provide a useful basic structure for any farm and health plan that you choose to submit. You might find it useful to look at one of our farm and health plan templates while reading through this technical paper to give you an idea of the information you will need to gather. If you don’t already have a copy, visit the *Animal Welfare Approved* website at: <http://www.animalwelfareapproved.org/farmers/documents/>

If you have a good relationship with your vet – or have an expert livestock advisor – you may want to get his or her advice. They can provide a lot of useful advice and information when developing and writing your plan.

### **What are the everyday disease challenges on your farm?**

Part of the process of developing your farm and health plan is to determine the day-to-day challenges on your farm and to assess how big a risk they might be to your animals.

A lot of general information exists on the key diseases or parasites that are prevalent in the United States. But you'll need to establish what diseases or pest problems are actually going to affect your specific farm and your animals.

Start by listing the key pest and disease problems that you have experienced on your farm – and then the potential problems you might face in the future.

Is there anything about the climate on your farm that makes some problems a bigger risk? For example, if you are a sheep farmer on low lying land near a river you might have a greater risk of fly strike or fluke than a more exposed farm.

Is there anything about your farm's history that might affect health of your animals? For example, some diseases can lie dormant in the soil for years – anthrax is possibly the best known example but more common issues could arise from clostridial diseases that are also found in the soil. This information might be particularly important if you are moving to a new farm, restocking or introducing new species.

Ask yourself if any of your neighbours have livestock that could potentially be a source of disease for your own? For example, Porcine Reproductive and Respiratory Syndrome (PRRS) can potentially spread in the air from infected pigs two miles away. Think about the potential risks beyond your farm's immediate boundaries.

Once you have a list of the range of health and welfare issues on the farm, you can then start to think about the prevention and treatments strategies that you'll need to put in your farm and health plan.

### **What should I include in my health plan?**

As a rough guideline, the farm and health plan should firstly identify any disease and parasite problems and persistent mineral deficiencies that you know of – or could occur – on the farm.

The plan should then outline the necessary husbandry and management strategies that you will need to treat these problems and/or to prevent them from occurring.

For example, if internal parasites are a problem on the farm then list the specific pests – such as roundworms – and the specific worming program you might use in your health plan. But as well as identifying treatments, you should also look ahead and think about how you might minimize problems in the future – and reduce your costs. In the case of

internal parasites, you might want to adopt a clean grazing system and appropriate stocking levels.

Do this for all known or possible pests and disease problems that you have identified for your farm.

Your health plan should also identify the different management practices for all ages of stock, including the feeding regime, housing details, medication procedures, grazing policy and the management practices that will help to develop immunity. Include things like your selection policy for breeding, choice of pasture for young stock, and so on.

Finally, your plan should explain your record keeping procedures, key responsibilities and the systems used so that everyone involved is clear about what is required of them.

The *Animal Welfare Approved* farm and health plan templates include all these sections.

### **So how do I do this in practice?**

Developing a farm and health plan for your own farm might seem a little intimidating at first. But many other farmers are already benefiting from developing their own plans. Using the *Animal Welfare Approved* templates can be a big help.

Below, we have listed some 'real life' examples from farmers who have used our templates. You might find it useful to have a copy of one of our templates on hand so you can see the different sections and how the farmers have completed the forms.

#### *Background information*

Most farm and health plans – including our templates – start by listing some key background information on your farm. This usually includes the farm name and address, as well as the name and contact numbers for key personnel. You could also list details of other important farm contacts – such as your vet or feed suppliers, for example.

You might want to then provide information on the number of animals and what breeds or types they are. Write down why you choose these breeds and how suitable they are for the farm environment. Remember that different breeds have different characteristics and they may be more or less susceptible to health issues – for example, some breeds of sheep like the Katahdin are thought to be more resistant to internal parasites.

#### *Criteria for culling*

You should also list other useful background information, such as the age of your herd or flock and an explanation of your criteria for culling.

Sometimes when you have kept a herd or flock for a long time it is harder to make objective decisions about when an animal should be removed. Writing down the formal criteria for culling in your farm and health plan can help you to focus on what you feel the important factors are across the herd or flock – and what you are trying to achieve. You can then apply these equally to all individuals.

Put another way, you may have a favourite sow that you weren't intending to cull. But by referring to your culling criteria (see example 1 below) you might realize that while she consistently gets in pig, she only has six piglets each litter and then lies on at least two of these. In terms of overall herd production she's not a good one to keep.

*Example 1*

Herd age and culling	
Average age of sows (years or litter number)	Oldest six years, some family lines are kept so have mother, daughter and granddaughter.
Sows culled per year (number or percentage)	Not many culled per year as have been increasing up to 10 sows.
Reasons for culling sows (e.g. barren, poor performance, etc.)	
Now the herd is at the right number sows will be culled on the following guidelines:  Fertility – whether or not they get in pig. Poor mothering ability – if mortality is greater than 10% per litter. Poor litter size – if they have less than nine piglets, two litter running.	

*Actual and target production*

We highly recommend that you include your 'actual' and 'target' production figures in your farm and health plan (we include these in the *Animal Welfare Approved* template).

This information is important for your business and you should really aim to review them each year. If you are not meeting your target production levels – or your actual production seems to be getting worse – this could be an early warning of a disease outbreak or sub-clinical disease problems (diseases which are affecting livestock productivity but which are not yet making animals obviously sick).

Let's use ongoing fertility problems as an example – a common problem on many farms. Fertility problems are often a symptom of sub-clinical diseases among your herd or flock or mineral deficiencies on the farm. But if you're not keeping track of what's happening then you might not even realise you have a problem – or you might not notice until you have a full blown disease outbreak.

Let's look at the next example:

### Example 2

Production actual and target for sows	
Actual and target number of sows in herd	6 actual (target = 10)
Actual and target number of litters per sow per year	Currently around 1.7 on average (target = 2)
Actual and target number of piglets per litter	8 actual (target = 9)
Weaning age	8 weeks
Minimum condition score for service	2.5
Production actual and target for market pigs	
Actual and target number of market pigs in herd	17 odd at present
Actual and target mortality (%)	<10% pre weaning actual and target <2% post weaning actual and target
Actual and target age at finishing (months/ days)	
Gilt	7 months actual 6 months target
Boar	6 months actual 5 months target
Actual and target weight or weight band of finished pigs	250-275lbs

In example 2, you can see that the farm is not currently meeting its targets for farrowing twice yearly – or for growth of market pigs – although overall mortality appears low. By simply listing this information it is already clear that the farmer needs to look at the reasons for the production shortfalls – and address the problems.

It is interesting to note that example 2 is the same farm as in example 1, where the farmer has told us that some of their sows are up to six years old. Perhaps the age of some of the sows is the reason why they are not getting back in pig and it is time to bring in some younger replacements – and increase overall productivity.

The point is that your farm and health plan can give you – and any advisor – an opportunity to assess what's happening across your farm quickly and easily, helping you to spot any problem areas that need action.

#### *Listing procedures to deal with key problems*

The farm and health plan can also help you to anticipate any problems that might arise throughout the year – and to put procedures in place so that everyone knows who to deal with them.

Example 3

LAMBS	
Navel treatments used	
10% Iodine	
If lambs cannot suckle:	
How much colostrum is given?	<p>Three feeds in 24 hours – via stomach tube if lamb is weak.</p> <p>Large lamb (average single) - about 10 to 11 lbs; 200 ml each feed.</p> <p>Medium lamb (average twin) – about 8lbs; 150 ml each feed.</p> <p>Small lamb (average triplet) - about 5 to 6lbs; 100 ml each feed.</p>
For how long are they given colostrum?	At least the first 24 hours.
What are your emergency lamb rearing procedures? (Please state)	
<p>The aim is to get any colostrum that is needed from the lamb's own mother or another ewe. If this is not possible then powdered colostrum is used (kept in stock). Each lamb is checked individually to ensure that it has got up and sucked.</p> <p>Once the lambs have had the required amount of colostrum (see above) they are started on warm milk from a bottle given three times daily. As they grow they are then transferred to cold mixed milk replacer on an ad lib teat system. There are six teats for 15 lambs (more than the recommended one teat for 3/ 4 lambs) and the ratio of lambs to teats ensures they do not gorge themselves on milk and make themselves ill.</p> <p>The lambs are given a litre a day of this cold milk which they can access throughout the day. They are also given home grown barley. The milk is continued until the point that they are eating more barley than drinking milk.</p>	

In example 3, the farmer has written down their procedures for managing orphan lambs. Lambing time can be stressful and having clear protocols in place before you go into it can help you to make sure you have everything ready and don't have to try and calculate the right amounts of colostrum for different sizes of lambs when you get an orphan in the middle of the night and don't have anyone you can readily get in touch with to check. Aside from helping you, it also means that anyone who joins the farm can read the plan and quickly understand the procedures involved with rearing the orphans.

### *Health planning for fertility and reproductive disorders*

Let's look at the specific health and disease problems that could occur on a farm and how having a template of what you do – or would do – if or when a particular problem arises can really help. Look at example 4 below:

#### *Example 4:*

<b>FERTILITY AND REPRODUCTIVE DISORDERS</b>
Problems seen: Metritis
Please state problems seen:
Two sows that were brought into the herd suffered from metritis at farrowing – they had little milk, they had a discharge from the vulva and a high temperature. They were treated but were not kept.
Prevention
Please state prevention measures adopted
None needed: this is not a normal problem on farm.
Treatment
Please state treatments used.
Penicillin was used at the time – twice daily injections for three days. Oxytocin was also used to promote milk let down – given as a 0.5ml injection whenever penicillin was used.

As well as detailing the problem and the treatment – which in itself is a useful record should it ever arise again – the farm and health plan requires an explanation of what prevention measures the farmer intends to adopt – again this means if the situation arises you already have a protocol and can get straight on with action to solve the problem rather than trying to look things up or get in touch with someone to advise you. In example 4, the problem of metritis was seen on farm but only in brought in animals – not in home bred stock – so this is an example where there isn't a need to necessarily think of a preventative measure. Remember the templates provided by AWA are just a guide – you mustn't feel that you have to write something in every box, only the sections that are relevant to your farm situation.

Example 5 below is a different case altogether: the disease (a form of abortion found in sheep) is not currently seen on the farm, but has been in the past. The farmer in this instance felt that the problem was still a risk for his flock so has taken the time to detail a preventative strategy:

*Example 5*

<b>FERTILITY AND REPRODUCTIVE DISORDERS</b>
<b>Enzootic abortion</b>
Please state problem seen
Not seen on farm now – was an issue five years ago.
Treatments used
Not seen.
Prevention Measures
Replacement ewe lambs only bought in from a known source that is enzootic abortion free. The vet will carry out a blood test on any aborted and barren ewes for enzootic abortion and other abortion types, such as toxoplasmosis, to monitor for this disease.

*Health planning and lameness*

Compare the following extracts from two different farm and health plans which look at lameness in cattle (example 6) and lameness in sheep (example 7):

*Example 6*

<b>LAMENESS</b>
<b>What were the main causes of lameness in the herd (please complete appropriate box/boxes)</b>
<b>Cause: Hairy heel wart</b>
Treatments used
Oxtetracycline injections (we have tried antibiotic sprays with little success). We clean the affected foot and wrap it up to try to keep it clean during the healing process.
Prevention Measures
We see about 15% of cows a year getting hairy heel wart. This has increased in recent years. We are trying to keep the dairy yards scraped clean. We do use copper sulphate foot baths but are unsure whether these are helping with the heel wart. We are starting to do more regular foot trimming with a hired foot trimmer to try to improve lameness generally.

### Example 7

LAMENESS
What were the main causes of lameness in the herd (please complete appropriate box/boxes)
Causes: Scald
Treatments used
Some scald is seen and an antibiotic foot spray is used as required.  If the foot is really bad then tetracycline would be used – but this only seems to be a problem with ewes – not the lambs.
Prevention Measures
All ewes are checked for foot and other problems at tugging. All ewes are individually tagged so ewes which persistently have problems with their feet can be identified and culled.  Ewes are also regularly foot bathed with zinc sulphate and copper sulphate.

Foot rot
Treatments used
Some foot rot is seen but not enough to warrant vaccination. If found the ewe is treated with antibiotic as required. The vet has advised that trimming the infected foot does more harm than good – spreads the problem – so this is avoided where possible.
Prevention Measures
If a ewe continuously shows signs of foot problems she is culled. The problems of foot rot in the herd are getting less and less as the ewes that are kept seem to be immune to this problem.

In terms of future usefulness, the information given in example 6 is more helpful than example 7. This is because example 6 provides clear levels at which the problem was occurring – the farmer can easily compare the levels of disease in the future when the plan is later reviewed and see if things have improved or not – and take necessary action.

However, to their credit, the sheep farmer in example 7 has identified at least two different types of lameness that are occurring on their farm – together with slightly differing responses for each problem. It is also worth noting the overall prevention strategy for lameness in example 7 is a culling program to remove those animals that

are persistently lame for the problems identified – scald and foot rot. This is an effective management strategy as long as you have a closed flock.

### *Health planning and internal parasites*

Parasite management is a good example of how a farm and health plan can help to improve farm performance.

Parasite outbreaks generally occur when you can't or don't move stock – or when you end up keeping more animals than you expected. If your farm and health plan identifies that parasites are an ongoing problem, you can start to look at 'best practice' management and think about ways of adapting these techniques to your own farm situation [see 'Reducing the Risk of Internal Parasites', AWA technical advice fact sheet no. 4].

With cattle and sheep, look at how you currently manage your grazing land. Where are the problem areas and what are the possible causes? Make notes on ways that you can improve your system to reduce the build up of parasites in the pasture. Can you rotate your livestock with other species or integrate cropping to help break the parasite life cycle? A mixture of species can help to control worms because each species removes and reduces the parasites of the other.

Try to identify pasture according to the level of potential parasite contamination and then allocate the grazing based on the types and groups of animals and their vulnerability to internal parasites. If you don't know already, learn the life cycle of the internal parasites that are a problem on your farm so you can identify risk periods and take action to avoid the build up of infection. The general stocking rate is also important: the more extensive it is, the less likely the incidence of parasites.

Be aware that while older animals can develop natural immunity to internal parasites, your most susceptible animals are the newborn or newly weaned and they will do best on the 'cleanest' grazing. 'Clean' grazing is pasture which has a minimal risk of parasite contamination and will include land that hasn't had stock on it at all for a number of months – perhaps because you have been growing crops on it – or land that has only had animals of another species grazing on it for several months.

Use the farm and health plan to ensure you identify and make the best use of 'clean' land – and stick to the plan. Monitoring parasite levels through sampling can be a very useful tool, helping to identify the levels of risk and when treatment might be required – and even which individual animals are naturally immune for future breeding selection.

Take a look at the next farm example, which relates to internal parasites (example 8). This is taken from a farm which reviews its health plan each year; this extract is from the third year of review. The farmer explains clearly how they are using sampling of both dung and blood to monitor the levels of parasites. Over the years the use of fecal

sampling has proved very helpful in reducing the risk of roundworm and the need to treat on this farm.

Also note the reference to an earlier version of the plan where the vet warned that fluke was on the rise in the area – and the need in this year’s plan to actually treat for fluke for the first time on this farm.

*Example 8*

<b>INTERNAL PARASITES</b>
Please state the type of parasites found
Roundworm found occasionally. Fluke emerged as an issue in 2008.
<b>Treatment</b>
Please state treatments used for each group of animals
Fasinex for fluke for most cattle on the farm in March 2008 following dung and blood sample results.
<b>Prevention</b>
Please state prevention measures adopted
<p>Mixed grazing is practised on the farm as there are both sheep and cattle. The mixed grazing system seems to work well. Stock are regularly moved round to avoid the build up of parasites on particular fields. Some fields are shut up for silage and this provides clean aftermath grazing.</p> <p>Attention is paid to ensuring that the most vulnerable stock – e.g. the calves – get the safest grazing. Cows and calves would graze the aftermaths from cutting that have not had stock on them for some months for example.</p> <p>Fecal egg counts (FEC) are used as a monitoring tool. Samples from both sheep and cattle are taken regularly. The interval of testing depends on how the stock look; it could be from three weeks to two months. FEC counts were carried out in 2008. We also carried out additional blood sampling in 2008 when some cattle started to look poor.</p> <p>Fluke had not been a problem on farm before 2008, though (as per previous health plans) the vet had pointed out that it was becoming more prevalent in the area and should be monitored. In early 2008, FEC and blood tests showed that fluke was now at a level where treatment was required and all stock (apart from cows due to calve) were treated. The situation will be monitored on an ongoing basis and further treatment may be required in future years.</p>

### *Health planning and external parasites*

As well as internal parasites, your animals may also be affected by a range of external parasites, such as red mite in poultry, lice in cattle and pigs, and flies in all species – although potentially most problematic are blow flies affecting sheep.

You may be wondering what you can do to plan and prevent problems with external parasites. For example, flies are obviously mobile and have free access on and off your farm. But there are things you can do to minimise fly problems. For example, you can identify when flies are most likely to cause problems on your farm and take action at those particular times of year - or before particular weather conditions – to help minimize the risks.

You can also identify areas of the farm which are more at risk at certain times and move stock accordingly. For example – and as mentioned earlier in this paper – we know that low lying pasture next to water or near woodland is likely to present stock with a far greater risk of flies than a higher, more exposed pasture which catches the wind.

Other external parasites might be easier to tackle. For example, red mite in poultry is best controlled by good hygiene and by taking the necessary steps to eliminate the favourable habitats that red mites need to thrive. If red mite is a problem, then action points might include buying or building huts or houses for the birds that don't have cracks and crevices that mites can live in and breed – or taking steps to block any existing crevices in your buildings with silicon sealer.

Example 9 below gives some actions taken to prevent known problems on farms suffering with lice in cattle (see overleaf):

#### *Example 9*

<b>ECTOPARASITES (for example: lice, mange, scab)</b>
Please state the type of parasites found
If cattle have to be housed in bad weather in the winter lice have been seen.
<b>Treatment</b>
Please state treatments used for each group of animals
A pour on (Spot On) is used if lice are seen.
<b>Prevention</b>
Please state prevention measures adopted

Housing areas are kept as clean and hygienic as possible and cleaned through thoroughly after use.  
 We have reduced the stocking density in the housing and this seems to help  
 If cattle are to be housed for a long time we dip the hair in a wide stripe down their backs to reduce areas where lice collect and breed.  
 This is a closed herd which should reduce parasites being brought in.

Note that, in example 9, this particular farm lists their closed herd policy as a prevention method. This part of the health plan definitely overlaps with the farm biosecurity plan: it is very easy to bring external parasites on to the farm if you bring in infested animals. As early stages of external parasite infection are generally difficult to spot, that prize bull or new ram you've just bought might be bringing in more than just new genetics to your herd or flock. If you don't do so already it is well worth including a quarantine procedure as part of your farm and health plan to minimize the risk of introducing new parasite or disease problems to the farm.

One positive point for sheep farmers in America is that sheep scab – a major external parasite of sheep in other countries such as the UK – is not found in the US.

Example 10 looks at the issue of preventing a health problem from a parasite that is impossible to eliminate from your farm – the fly. This example shows a good assessment and response to the problem with a mix of management and pour-ons.

*Example 10*

FLY STRIKE				
Is fly control a problem on your farm?	Yes	X	No	
Treatment				
Please state treatments used				
If a ewe or lamb is found with strike Spot On is used as a treatment followed by vetrazin or crovect to prevent any more incidence of strike				
Prevention				
Please state prevention measures adopted				

Vetrazin has been used as a preventative but this does not seem to last as long as other preventatives. Now moved on to Clik on the ewes and Vetrazin on the lambs – which do not need such long cover as they are being sold for slaughter through the fly season. These products are reapplied as necessary through the season.

The ewes are also dagged out to reduce the amount of muck round their back ends that might be attractive to flies. A dagging crate is used for this.

Sheep are managed to avoid scour from over rich pasture or from internal parasites.

### Health planning and mineral deficiencies

The *Animal Welfare Approved* standards require that farmers carry out periodic soil testing. Some soil tests only look at the major minerals such as phosphorus and potassium and their levels in the soil. However, the levels of trace elements in the soil are often just as important – and sometimes more important – when it comes to maintaining animal health.

Some mineral deficiencies only occur at particular times of year or particular times in the animal's production cycle. Take milk fever as an example: milk fever, which is basically a deficiency of calcium, occurs around the time an animal gives birth and is partly due to the increased demand for calcium to produce colostrum. If you start to see a lot of milk fever you should look at your ration and mineral supplementation. Remember that because mineral balances are quite complicated it isn't a matter of just giving the animal more calcium in the run up to giving birth – indeed, this may in fact make the matter worse. Higher magnesium diets are likely to be more effective, but talk to your vet or nutritionist to determine the best supplementation for your situation. By noting the problem in your farm and health plan you can keep track of mineral supplementation, when to use it and what problems you have seen in the herd or flock.

Another common seasonal mineral deficiency leading to potential problems is magnesium deficiency leading to grass tetany or 'staggers'. Look at example 11 below:

### Example 11

<b>Staggers</b>
Treatments used
Staggers is not normally seen on farm but when there was a period of extreme temperature ranges with hot days but frosts at night there were some problems with cows around calving. The vet was called and cows were treated and 24 hours post calving were OK.  There has also been the odd case when animals go out onto fresh spring grass.
Prevention Measures
Put magnesium in the water troughs Provide magnesium mineral licks when animals are turned out onto the first flush of grass.

This example is ideal. It lists the times when problems are more likely to occur and have occurred in the past and reminds you of the preventative measures which would obviously have to be put in place at these times of high risk.

There are a number of other trace elements that affect health. For example, selenium deficiency has an adverse affect on fertility; copper can cause toxicity in sheep, although this is highly related to breed with European sheep such as the Texel being most susceptible. Cobalt deficiency affects growth rate, particularly in young animals, while iodine deficiency causes abortion, still births and birth of weak animals. These examples demonstrate just how important it is to know the mineral status of your farm and detail what you find year on year in the health plan. This will help you identify whether you need to supplement all year round – or as in the example above – there are particular times of year or times of production when your animals might be affected.

#### *Health planning and mastitis*

Mastitis in dairy animals is another good example of a livestock health issue that you should include in a farm and health plan. There are five steps to treating a mastitis problem:

- Review records of mastitis/somatic cell counts (SCCs) and determine the cause
- Classify whether the infection is caused by environmental or contagious pathogens, and whether it originated from the dry period or lactation
- Chose a suitable treatment plan
- Plan an appropriate, realistic and achievable preventative strategy
- Continue to monitor.

The farm and health plan is the best place to bring all these factors together and to review the prevention and treatment schemes on a regular basis. Look at example of a mastitis control plan in the farm and health plan (example 12) below:

*Example 12*

<b>MASTITIS</b>				
Are individual cow somatic cell counts recorded?	Yes	X	No	
Are samples taken to find bacteriological causes of mastitis?	Yes	X	No	
Average herd cell count (if known)	200,000			
Cases of mastitis per year – number or percentage of herd	20% of milking cows			
Most prevalent type of mastitis seen	Strep Uberis			

Please state methods of treatment used for mastitis
Tylan 2000 antibiotic treatment when mastitis is detected. Affected cows also stripped out and udder mint used California Milk Test for fresh calvers
Please state prevention measures adopted against mastitis
Main problem is the straw covered yards. Straw yards cleaned regularly and lime put down before rebidding to kill bacteria. Straw yards rebidded as required between cleaning out. Good ventilation in straw yards maintained to stop build up of humidity that promotes infection and bacterial spread. Pre milking teat dip of iodine used on all cows. Teats wiped before clusters applied. Post milking dip of iodine also used. Cows kept out of lying area for at least 30 minutes post milking to allow teat duct to close before entering straw bedded area.

*Health planning and mortality*

You should list expected levels and causes of mortality in your farm and health plan – and note down any unexpected increases with subsequent action.

Take poultry as an example: you should have an overall maximum mortality in mind – perhaps 5% for meat birds from placement to slaughter – as well as a daily maximum. List these in your farm and health plan. If you see more than 1% mortality in a single day, you should look for causes – such as predation, disease or smothering – and take necessary measures to prevent recurrence. Establishing a threshold for mortality levels should stop those situations where on a daily basis you think mortality is acceptable but

when you look back across the week or month and add up all those odd deaths you realize you are actually in the middle of a serious problem.

### **So I've written a health plan – is that it?**

It is really important not to think of your farm and health plan as a one-off document that you can file away, never to clutter the office desk again!

Maintaining your farm and health plan *is* extra work. But if you revisit the plan on a regular basis (say, at least once a year) and update it according to the progress or problems that you have experienced, you will find that it quickly becomes a useful management tool for monitoring pest and disease problems and improving overall farm performance from year to year.

Putting the farm and health plan in writing will formalize your approach and will help you stick with it. If there is a disease or parasite outbreak you can refer back your farm and health plan to see how you originally intended to handle the problem – and avoid making hasty last-minute decisions that you or your staff might regret.

Similarly, it's amazing just how much we can all forget over time. By noting the details down in your farm and health plan, you can look back at why a specific problem occurred – together with what actions you took – and see if any further action is required.

The examples given throughout this technical paper don't cover everything that you should include in your farm and health plan, but remember that the *Animal Welfare Approved* farm and health plan templates provide an excellent starting point and will help guide you through. Remember that some sections will not be applicable to your farm – concentrate on the areas that are of use and don't be afraid to mark those that don't apply to your farm as 'not applicable'. The template is a guide – and therefore covers all possibilities for each species.

### **Summary**

A well maintained farm health plan – ideally compiled with the help of your vet or other qualified advisor – can help you to identify what has or hasn't worked in the past, or to isolate key problem areas that might be related to particular times of year, or specific batches of animals. As well as improving livestock welfare and performance, with a little effort, your farm health plan could also save you a great deal of time and money.