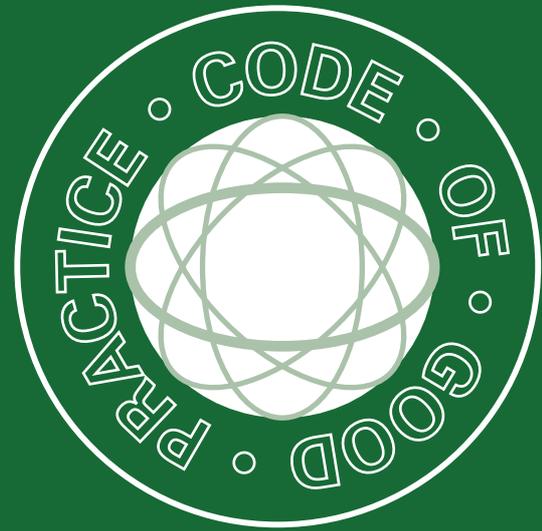


Prevention of
Environmental
Pollution
From
Agricultural
Activity



DOs and DON'Ts Guide

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SECTION 1

INTRODUCTION

This booklet has been produced by the Scottish Executive with the assistance of members of the Scottish Agricultural Pollution Group (SAPG) which includes NFU Scotland, SAC and SEPA working in partnership with the Executive. The guidance presented in this booklet is intended to protect and enhance Scotland's environment in line with the vision presented in the Scottish Executive's "Forward Strategy for Scottish Agriculture".

The purpose of this booklet is to provide farmers and crofters and those involved in farming activities, such as agricultural contractors and companies involved in spreading organic manures to land, with practical guidance on how to prevent pollution.

This booklet is not intended to be exhaustive and reference should therefore be made to the current version of the Prevention of Environmental Pollution From Agricultural Activity (PEPFAA) Code for further guidance.

The steps highlighted in red  in the "DO" and "DON'T" Sections in this booklet are **mandatory** for farm businesses affected by the relevant legislation. Those in green  are **voluntary** but if implemented will help minimise the risk of environmental pollution and in many cases, will improve the quality of your environment.

In the event of a pollution emergency SEPA should be your first point of contact on their Emergency Hotline Number 0800 80 70 60.

Copies of this document can be found in electronic format at www.scotland.gsi.gov.uk

SECTION 2

DIFFUSE AGRICULTURAL POLLUTION

Diffuse agricultural pollution contaminates the air, soil and water environments. Activities such as ploughing, seedbed preparation, crop spraying, fertiliser spreading and applying slurry to land can all contribute to diffuse pollution. Run-off from farm roads and yards, the surface of fields, and dusty roofs after rainfall, are all potential sources of pollution. There is therefore a wide range of potential diffuse pollution sources which are associated with farming practices and which can harm the environment. Diffuse pollution is projected by SEPA to be the most significant cause of river quality downgrading by 2010, unless early action is taken to prevent this occurring.

The total effect of a number of individually minor sources of contamination becomes increasingly significant over an entire catchment area. Small watercourses, affording little dilution, are more likely to be adversely affected by diffuse pollution than larger rivers, but diffuse sources of nutrients can also affect large water bodies, especially lochs which are naturally poor, in terms of plant nutrients.

Specific activities which lead to diffuse pollution are dealt with in detail in following sections.

DOs

Carefully plan all storage and handling arrangements for livestock slurries and manures, animal feedstuffs, silage effluent, agricultural fuel oil, dirty water, fertilisers, veterinary medicines, chemicals and pesticides at your farm.

Maintain a suitable distance from any watercourse including ditches (e.g. 10m) or drinking water supplies (e.g. 50m), especially when handling or applying fertilisers, organic wastes, pesticides or other chemicals.

DON'Ts

Employ any agricultural contractor or company involved in spreading organic waste to land unless they are competent and suitably trained, aware of legal requirements and are willing to follow the guidance in this booklet and the PEPFAA Code.

Allow the run-off from roads, farmyards, hard standings and ring feeder areas used by stock to discharge directly to a watercourse.

Allow livestock to have access to watercourses. Instead, provide water at drinking troughs, if at all possible.

DOs

Think about ways to protect and enhance your local environment and how to minimise the impacts of diffuse agricultural pollution of water, land and air.

Account for every input, especially of nutrients, pesticides and other chemicals through careful planning.

Follow the Scottish Executive “Four Point Plan”, the individual components of which are specified as follows:

- produce and implement a risk assessment for manures and slurries;
- produce and implement a farm nutrient plan;
- protect watercourses and carry out water margin management;
- undertake a separate assessment of farmyard drainage.

Ensure that any biobed, reedbed, wetland or infiltration system installed to reduce the risk of diffuse pollution is discussed with SEPA before it is constructed.

Obtain specialist advice when considering using wetlands, ponds or infiltration systems to treat contaminated roof or dirty yard run-off at the farm steading.

Adopt “good housekeeping” and waste minimisation practices that aim to prevent pollution at source.

Protect your soil by following the guidance in this Code regarding preventing damage and erosion.

Use buffer strips and other measures to reduce surface run-off from fields.

Minimise the area of farmyard and roads over which animals can excrete and equipment transporting slurry is moved. Take steps to control the run-off for these areas.

DON'Ts

Leave cultivated soils which are light textured without a crop or stubble cover during the autumn and winter period.

Use pesticides, veterinary medicines or chemicals unless there is an identified need.

Allow the rain water from poultry buildings that are ventilated to the roof to discharge directly to a watercourse.

Directly overspray a watercourse when using pesticides.

Hesitate in getting involved in catchment partnerships with your neighbours, FWAG, SAC, SEPA and others.

Forget that over abstraction of irrigation water from watercourses can cause downstream water pollution.

SECTION 3

THE COLLECTION, STORAGE AND APPLICATION TO LAND OF LIVESTOCK SLURRIES AND ANIMAL MANURES

Livestock slurries and animal manures, are valuable sources of nutrients for improving soil quality but highly polluting in the wrong place, for example, in a river. Very rapid and severe oxygen depletion of the water can result leading to the death of fish and invertebrates for many kilometres downstream. They can also be associated with the microbiological contamination of surface and ground waters and give rise to potential health risks if insufficient precautions are taken.

Pollution risk can occur at all stages of manure and slurry handling including collection, storage, transport and land application. The risk of pollution occurring is higher with liquid systems. At all times the quantity of material requiring to be handled must be minimised.

DOs

Comply with the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001.

- Notify SEPA before bringing into use any new, substantially enlarged or substantially reconstructed slurry storage facility, which together with existing storage capacity should provide 6 months unless otherwise agreed with SEPA.
- Maintain a freeboard of at least 0.3m, for above ground slurry stores and, 0.75m, for slurry lagoons.
- Collect all 'seepage' from farmyard manure and high-level slatted buildings as this is classed as 'slurry' under the 2001 Regulations.

DON'Ts

Allow effluent to escape from middens, byres or high-level slatted buildings as this is an offence under the Control of Pollution Act 1974 (as amended).

Employ any agricultural contractor or company involved in spreading farm manure and slurries to land unless they are competent and suitably trained.

Store slurry or semi-solid manure in middens.

Allow dairy washings, parlour or byre drainage, or slurry spilled during handling to enter clean water drains or watercourses.

Forget that slurries and manures are a valuable resource and if properly utilised will save you money as well as protecting the environment.

DOs

- Prepare and implement a Farm Waste Management Plan (This is mandatory if specified by SEPA in the terms of a Notice served under the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001).

Consult SEPA if you are planning to use a waste treatment plant on your farm as it may require a consent, authorisation or permit to be sought.

Follow the Scottish Executive “Four Point Plan” which is made up of the following points:

- produce and implement a risk assessment for manures and slurries;
- produce and implement a farm nutrient plan;
- protect watercourses and carry out water margin management;
- undertake a separate assessment of farmyard drainage.

Keep clean water and dirty water separate.

Minimise unroofed collection yards, feed passages etc.

Repair or replace roof gutters and downpipes that are broken or missing.

Regularly check effluent tanks, slurry tanks and slatted tanks to avoid overflow.

Ensure proper maintenance and repair of all slurry storage tanks, pipework and valves.

Be a ‘good neighbour’ and:

- avoid spreading close to domestic or public buildings;
- avoid spreading at weekends or public holidays;

DON'Ts

Spread livestock slurries:

- within 10m of a watercourse or at least 50m of a drinking water supply;
- to steeply sloping fields, when the soil is wet or waterlogged, there is a flooding risk or when heavy rainfall is forecast;
- when the soil has been frozen for 12 hours or longer in the preceding 24 hours or is covered in snow;
- at a rate that fails to account for the overall suitability of the land. In any case, the rate should never exceed either 50m³/ha (normal rate 25-30m³/ha or 2,200-2,700 gallons/acre) for surface spreading.

Cause direct and indirect entry of livestock slurry into the drainage system, especially with soil injection into fields with gravel backfilled drains.

Mix slurry with silage effluent in confined spaces as dangerous fumes can be fatal.

Enter a tank unless all recommended safety procedures have been followed.

Spread when fields have been pipe or mole drained, or subsoiled over existing drains within the last 12 months.

Apply manures or slurries to any statutory conservation sites or other areas with a conservation, archaeological or historic value without prior notification to Scottish Natural Heritage (SNH).

Build a woodchip corral without carrying out a detailed assessment of pollution risks to surface and ground waters. Consult with SEPA about the site selection.

DOs

- spread livestock slurries and manures when the wind direction is away from public/residential areas and areas designated for their conservation value;
- avoid, where possible, spreading in the hours of darkness.

Locate any field heap of farmyard manure:

- at least 10m away from any clean surface water or field drain or watercourse and at least 50m from any spring, well or borehole.
- as far away from residential housing as possible.

Spread livestock slurries and manures only when field and weather conditions are suitable to prevent water pollution.

SECTION 4

NON-AGRICULTURAL WASTES AND OTHER IMPORTED ORGANIC WASTES

Currently the main non-agricultural organic wastes applied to agricultural land include sewage sludge, paper mill sludges, dairy, distillery and food processing wastes, composts and blood and gut contents. Although many of these wastes potentially have valuable fertilising and soil conditioning properties, their application under unsuitable conditions or at inappropriate rates can give rise to contamination of soil, water and air.

Certain non-agricultural wastes (particularly those from the food and abattoir industries) are potentially even more polluting than farm manures. Application to agricultural land must be carried out to ensure beneficial recycling of nutrients and not as a cheap method of waste disposal. This section recommends management practices which can be adopted to avoid, or at least minimise, the risk of causing pollution.

DOs

Comply with the Sludge (Use in Agriculture) Regulations 1989 (as amended) by:

- Analysing sludge and soil prior to spreading.
- Avoiding applying sewage sludge to soils with a pH of less than 5.0.
- Following all mandatory stock grazing, cropping and harvesting restrictions.

Assess the risk of pollution and land suitability for the application of non-agricultural wastes to land. Prevent direct and indirect entry of the waste into drains, especially with soil injection into fields with gravel backfilled drains.

DON'Ts

Store non-agricultural wastes unless such storage is secure and suitable and has been discussed with SEPA in advance.

Employ any waste contractor or company involved in spreading wastes unless they are competent and fully trained.
(Competency for those involved spreading wastes will be looked at by The Scottish Executive in taking forward amendments to the Waste Management Licensing Regs.)

Permit any non-agricultural wastes to be applied without first knowing the nutrient analysis of the waste and the content of Potentially Toxic Elements (PTEs) and pathogens.

DOs

Check with the Safe Sludge Matrix (an agreement between the UK water industry and the British Retail Consortium on sludge use), your farm quality assurance schemes and your produce buyer before using non-agricultural wastes. Use of such material may have commercial consequences for acceptability of produce to retailers and processors.

Follow the guidance that exists in the Code of Practice for Agricultural Use of Sewage Sludge.

Account for non-agricultural waste when implementing a Farm Waste Management Plan and check on how safely the waste can be used in your farm system.

Establish and agree what responsibilities and measures the waste provider or contractor will need to take to avoid pollution and odour nuisance.

Leave an untreated strip a minimum of 10m wide beside all watercourses and at least 50m from any spring, well or borehole.

Avoid the risk of surface run-off. Consider contour injection where there is a risk of injected wastes running out of the injection slots on sloping land.

Prepare and implement a nutrient plan for the land treated and reduce inorganic fertiliser use by fully allowing for the available nutrients in the waste. **This is mandatory for sewage sludge.**

Seek professional advice if in doubt about how to manage imported wastes on your farm.

Spread non-agricultural wastes only when field and weather conditions are suitable to prevent soil and water pollution.

DON'Ts

Spread liquid sewage sludge and other liquid organic wastes:

- within 10m of a watercourse or 50m of a drinking water supply;
- to steeply sloping fields, when the soil is wet or waterlogged, there is a flooding risk or when heavy rainfall is forecast;
- when the soil has been frozen for 12 hours or longer in the preceding 24 hours or is covered in snow;
- at a rate that fails to account for the overall suitability of the land. In any case, the rate should never exceed either 50m³/ha for surface spreading;
- when fields have been pipe or mole drained, or subsoiled over existing drains within the last 12 months.

Apply wastes at rates greater than crop rotation requirements.

Apply raw or untreated sewage sludge on land for food production.

Allow spreading of non-agricultural wastes on your land outwith daylight hours.

Apply imported wastes to any statutory conservation sites (e.g. SSSIs or NNRs) or other areas with a conservation, archaeological or historic value without prior notification to Scottish Natural Heritage (SNH).

The current EU controls on animal by-products (including blood and gut contents) are under review and revised provisions are expected to be introduced in the early part of 2003.

SECTION 5

NITROGEN AND PHOSPHORUS

Nitrate concentration in rivers and groundwaters has been increasing in recent decades in many areas of Scotland. This is a cause for concern for two main reasons. Firstly, because of possible risks to human health posed by high levels of nitrate in drinking water. Secondly, elevated levels of nitrate are considered to be significant contributors to eutrophication in coastal waters.

The Protection of Water against Agricultural Nitrate Pollution (Scotland) Regulations 1996 implements the requirements of EC Nitrates Directive. The Regulations require SEERAD to designate Nitrate Vulnerable Zones (NVZs) where surface freshwaters or groundwaters exceed, or could exceed, 50 mg/litre of nitrates and where waters are, or may become, eutrophic. Action Programme Regulations will be introduced to such NVZs to reduce nitrate pollution.

Action Programme Regulations may be different for each NVZ or parts of NVZs and as such, this section only gives a broad outline of requirements. Further details are available in the individual action programme for each NVZ. Phosphorus can also contribute to eutrophication of freshwaters and agricultural land can be a significant source of phosphorus input to watercourses particularly by soil erosion. The risk of nitrate and phosphorus from fertilisers and organic manures reaching a watercourse can be minimised by following the mandatory and voluntary measures given in this section.

Until such time as the 1997 PEPFAA Code is reviewed, those who wish to know more about this section should refer to the Nitrogen and Phosphorus Supplement which sets out guidance in greater detail.

MANDATORY FOR FARMERS IN NITRATE VULNERABLE ZONES (NVZs)

DOs

Comply with the statutory requirements of the Action Programme Regulations if you are farming within an NVZ.

- Prepare and implement a fertiliser and manure plan.

DON'Ts

Apply chemical fertiliser (containing nitrogen) within closed periods in NVZ Action Programme Regulations unless there is a specific crop requirement.

DOs

- Ensure that adequate records are kept for land within NVZs relating to livestock numbers, use of inorganic fertiliser and use of organic manures.

Ensure that minimum storage requirements for livestock manure are provided for the purposes of NVZ Action Programme Regulations, taking account of the need to comply with the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001.

- Locate any field midden at least 10m away from any clean surface water or field drain or watercourse and at least 50m from any spring, well or borehole.

Take account of 'local environmental factors' before applying nitrogen fertilisers. This includes:

- Soil conditions, type and slope.
- Climatic conditions, rainfall and irrigation.
- Land use and agricultural practice, including crop rotation systems.

Apply nitrogen fertilisers as precisely as possible.

RECOMMENDED FOR ALL FARMERS

Sow winter cereals in time to establish a suitable crop cover in the autumn to winter period.

Locate any field midden, or fertiliser storage site at least 10m away from any clean surface water or field drain or watercourse and at least 50m from any spring, well or borehole.

Take account of local environmental factors before applying nitrogen fertilisers.

Produce and implement a farm nutrient plan.

DON'Ts

Apply chemical fertiliser (containing nitrogen) in a location or manner which makes it likely that the fertiliser will directly enter a watercourse.

Apply organic manure where the application would result in the total nitrogen (in kilograms) contained in organic manure exceeding permitted rates in NVZ Action Programme Regulations.

Apply slurry, poultry manures or liquid digested sewage sludge to sandy or shallow soils within closed periods in NVZ Action Programme Regulations.

Apply nitrogen fertilisers in excess of crop requirements or to any land if the soil is waterlogged.

Apply nitrogen fertilisers if the land is flooded or if the soil has been frozen for 12 hours or longer in the preceding 24 hours.

Apply nitrogen fertilisers to any land covered with snow or to steeply sloping fields.

Allow livestock to have direct access to watercourses. Instead, provide water at drinking troughs, if at all possible.

Plough up permanent pasture, if possible.

Apply chemical fertilisers in a location or manner which makes it likely that the fertiliser will directly enter a watercourse.

Over-compact soil.

Apply nitrogen fertilisers in excess of crop requirements or to any land if the soil is waterlogged.

Apply nitrogen fertilisers if the land is flooded or if the soil has been frozen for 12 hours or longer in the preceding 24 hours.

Apply nitrogen fertilisers to any land covered with snow or to steeply sloping fields.

DOs

Apply fertilisers only when soil conditions are suitable.

Apply nitrogen fertilisers in as accurate and uniform a manner as possible.

Spread organic manures at least 10m away from any clean surface water or field drain, watercourses, and at least 50m from springs, wells or boreholes that supply water for human consumption or use in dairies.

Apply nitrogen fertilisers only when there is a specific crop requirement.

Apply phosphorus fertiliser according to soil analysis and the needs of the crop. Always allow for the nutrients supplied by any organic manures.

Analyse your soil for phosphorus to ensure that excess and unnecessary levels are not building up.

SECTION 6

SILOS AND SILAGE EFFLUENT

Silage effluent is produced from any forage crop which is being made, or has been made, into silage. It is also defined as a mixture consisting wholly of or containing such effluent, rain or groundwater emanating from a silo, silage effluent collection system or drain. Silage effluent is the most common cause of agricultural pollution in Scotland. Each year, a significant number of serious pollution incidents occur through failure to contain or dispose of effluent satisfactorily.

DOs

Comply with the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001.

- Notify SEPA before bringing into use any new, substantially enlarged or substantially reconstructed silo and silage effluent storage facility.
- Ensure the base of the silo, effluent tank and drains are impermeable. In addition, they, and any silo walls, should be resistant to attack from silage effluent.
- Properly maintain all parts of the silo system such that it will meet a 20 year design life.
- Ensure the minimum effluent tank capacity requirements are provided. Consult SEPA on the size of tank required.
- Ensure that a design loading notice is placed on the wall of any concrete silo.

Make your farm workers, and any contractors employed by you, aware of the design loadings for walled silos prior to filling the silo.

DON'Ts

Site a silo or any part of the effluent collection system within 10m of a watercourse, or surface water and field drains.

Store baled silage within 10m of any inland or coastal waters or remove the wrapping of any bales within 10m from any inland or coastal waters.

Allow silage effluent to enter a watercourse or ground water as this is an offence in terms of the Control of Pollution Act 1974 (as amended).

Allow effluent tanks to overflow, or ever use a by-pass, to divert run-off from a silo.

Use a soakaway to dispose of silage effluent.

Neglect maintenance and inspection of silos as pollution does not have to occur for a notice to be served by SEPA.

Continue to use silage-making facilities which present a significant pollution risk.

Make silage in free-standing field heap (i.e. without an impermeable base or an effluent containment system).

DOs

Ensure that effluent tanks, channels, silo floors, walls and wall floor joints are inspected annually and any necessary repairs carried out well in advance of the start of silage making.

Try, if possible, to wilt the crop that is to be ensiled so as to reduce effluent production to a minimum.

Keep all effluent collection channels and drains clear of blockages.

Check effluent tank levels on a frequent basis when effluent is being produced and regularly throughout the year, and empty as necessary.

Regularly check watercourses to ensure that they are not polluted throughout the year. If any signs of pollution become evident, immediate action should be taken to stop any discharge and SEPA should be contacted immediately.

Have a contingency plan to deal with structural failures and effluent escapes.

Dilute silage effluent with a minimum of one-to-one (1:1) water if spreading on grassland to avoid scorching.

Avoid rainwater entering effluent collection systems.

Remember that silage effluent can be a valuable feedstuff or fertiliser. Think of it as a potential resource.

DON'Ts

Underestimate the quantity of effluent produced from wet grass silage.

Allow contaminated silo run-off outwith the main silage making season to escape into a watercourse. Collect it – it is very polluting.

Add silage effluent to slurry in confined spaces or in buildings because this will produce lethal gases very quickly.

Apply silage effluent on sites where there is a danger of direct discharge into field drains (e.g. on cracked soils or recently drained or subsoiled fields).

Apply silage effluent within 10m of a watercourse and at least 50m of a drinking water supply.

Apply silage effluent to steeply sloping fields, when the soil is wet or waterlogged, there is a flooding risk or when heavy rainfall is forecast.

Apply more than 50m³/ha of diluted silage effluent to land.

SECTION 7

PREVENTION AND CONTROL OF EMISSIONS TO AIR

Increasingly, the impact of agricultural activities on air quality is being recognised. It is known, for example, that agriculture is the dominant source of ammonia emissions in the UK, mainly arising from the storage and application of livestock manure and slurry. Agricultural activities can give off various other “greenhouse” gases such as carbon dioxide and methane which can contribute to atmospheric problems. Complaints about agricultural odours arise mainly from slurry or manure spreading, farm buildings and slurry or manure stores.

A permit is required from SEPA for the operation of large pig and poultry installations to control the overall impact on the environment, including air emissions.

DOs

Seek a permit from SEPA if you have more than 40,000 poultry, or 2,000 production pigs or 750 sows at an installation.

Submit an application between 1 October and 31 December 2006 if your farm exceeds the above thresholds.

Apply for a PPC permit from SEPA if you intend to construct a new installation for rearing pigs or poultry and where the number of places for animals or birds will exceed the thresholds specified in the PPC Regulations.

Consult SEPA about any proposals you have to substantially change an existing pig or poultry installation in advance of 1 October 2006, as this may require you to seek a permit to operate such an altered installation under the PPC Regulations.

DON'Ts

Apply for a permit if your pigs or poultry are reared outdoors, as this type of production is not covered by the PPC Regulations.

Spread slurries or manures in a manner that may cause pollution of air or result in odour nuisance.

Be a ‘bad neighbour’ and spread livestock slurry and manures:

- close to domestic or public buildings;
- at weekends or public holidays;
- when the wind direction is towards public/residential areas;
- in areas designated for their conservation value; or
- during the hours of darkness, unless unavoidable.

Burn plastics, rubber, tyres or other materials which will produce dark smoke.

Light fires near a public road.

DOs

Consult Scottish Natural Heritage (SNH) regarding any areas designated for their nature conservation value within 1km of any new or substantially changed installation that exceeds the thresholds in the PPC Regulations.

Comply with the 'Standard Farming Installation Rules' developed by SEPA for pig and poultry installations operated under the PPC Regulations.

Follow the Muirburn Code.

Consult SEPA if in any doubt about the requirements of the PPC Regulations.

Use low-emission techniques for slurry spreading e.g. trailing-shoe, shallow (open slot) injector, deep (closed slot) injector or band spreader. When this is not possible, use a broadcast slurry spreader that gives a low and downward trajectory and large droplets.

Minimise odours from livestock housing by collecting and transferring all slurry every day to a suitable store and cleaning buildings regularly.

Cover slurry stores where practicable to reduce emissions of ammonia.

This will also reduce levels of waste production by excluding rainfall.

Incorporate applications of slurry and solid manure to uncropped land as soon as practical, preferably within 6 hours for slurry and 24 hours for solid manure.

(Italics indicates mandatory if specified in a permit issued by SEPA.)

Spread slurries and manures when the wind direction is away from public/residential areas and areas designated for their nature conservation value.

Seek professional advice about how to prevent and control emissions to air if in doubt.

SECTION 8

SHEEP DIP

Sheep dipping can play an important role in the maintenance of good animal welfare. The chemicals used in dips are highly toxic and, if used properly, can be very effective against parasites that colonise sheep skins and fleeces. However, if good practice is not followed, this can have devastating consequences for the water environment. Aquatic life in tens of kilometres of watercourse in Scotland has been wiped out as a result of the entry of tiny amounts of dip. Groundwater can also be put at risk if dipping-related activities are not managed properly. There are a number of legislative requirements for the handling and disposal of waste sheep dip, explained below.

DOs

Comply with the Groundwater Regulations 1998.

- Ensure that disposal of waste sheep dip to land is carried out in accordance with an authorisation issued by SEPA.

Have staff properly trained in the correct use of dips and dipping practice and ensure that they understand the very harmful effects of sheep dip on aquatic life.

Only purchase sheep dip if you hold the required Certificate of Competence.

Plan all aspects of the dipping operation in advance, identifying all possible pollution risks and taking action to minimise these risks as far as possible.

Ensure that a Contingency Plan is drawn up to deal with any potential spillage.

Ensure that proprietary kits or absorbent materials are readily available to deal with spillages.

DON'Ts

Allow dip to enter a watercourse. This will result in serious pollution, and may result in enforcement action being taken by SEPA under the Control of Pollution Act 1974 (as amended).

Use dips that are not approved.

Delay in contacting SEPA regarding any pollution incident involving sheep dip.

Store waste sheep dip for re-use. This is against veterinary medicines legislation and could result in harm to animal health.

Be afraid to seek veterinary advice as to the most appropriate method of ectoparasite control for your flock.

Site dippers within 10m of a watercourse and certainly not within 50m of water supplies.

Ignore the need to carry out regular maintenance of sheep dipping facilities taking account of signs of cracking, wear, damage or corrosion.

DOs

Strictly follow manufacturers instructions if detoxifying waste sheep dip.

Ensure that when mobile dipping is carried out, registered mobile dipping contractors are used.

Adopt high standards of flock management that aim to minimise the possibility of ectoparasitic infection on your farm.

Wear appropriate Personal Protective Equipment.

Allow sheep to drain in their drip pen for at least 10 minutes and prevent run off to any watercourse.

Rinse empty containers at least 3 times and add washings to the dip bath.

DON'Ts

Leave a full dip bath uncovered or unattended.

Delay emptying the dip bath unless weather conditions do not permit safe disposal.

Allow the dip bath to overflow.

SECTION 9

PESTICIDES

Pesticides play an important role in conventional agriculture and horticulture but they have potential to pollute the environment and affect non-target organisms. Highly active chemicals can have a big effect in very small amounts in the wrong place. For example, pesticides can kill aquatic life. Furthermore the careless application of pesticides can also create spray drift that may result in damage to neighbouring crops and wildlife habitats. Additionally, there is increasing concern over and monitoring of levels of pesticide residues found in drinking water sources which is of wider concern to public health.

Users of pesticides and their advisers must therefore ensure that pesticides are used correctly. The farming industry is a signatory to “The Voluntary Initiative” and further information and guidance will be produced under this programme to complement the advice in this booklet.

DOs

Check that the pesticide is approved for the purpose and always follow the instructions on the product label before use.

Comply with the Groundwater Regulations 1998 when disposing of waste pesticides and pesticide washings. Consult SEPA if in doubt.

Ensure that all staff and contractors involved with pesticides are properly trained and where appropriate have Certificates of Competence.

Follow the DEFRA/HSE Code of Practice for the Safe Use of Pesticides on Farms and Holdings.

Consult SEPA if you intend to use a pesticide in or near a watercourse.

Always consider alternative management strategies. If in doubt about the need to spray take advice from a BASIS qualified adviser.

DON'Ts

Apply any pesticide (unless approved for use in or near water) within 5m of the bank of a watercourse unless the LERAP demonstrates this is satisfactory.

Handle pesticides without proper protective clothing.

Fill sprayers directly from burns, watercourses, ditches or a mains supply.

Spray if too windy i.e. avoid spray drift.

Permit spray or spray drift to endanger sensitive habitats.

Leave foil seals or caps or empty chemical containers lying around as these will all increase the risk of pollution of local watercourses.

Neglect routine maintenance and calibration of spray equipment.

DOs

Carry out a “Local Environmental Risk Assessment for Pesticides” (LERAP) for “Category B” pesticide products with a buffer zone requirement IF it is applied by a horizontal boom or broadcast air-assisted sprayer AND IF you want to reduce the aquatic buffer zone.

Contact the Pesticides Safety Directorate for further advice on this.

Prepare a Crop Protection Management Plan for your farm. Guidance will shortly be available from NFU Scotland and the Crop Protection Association (CPA) under “The Voluntary Initiative” on how to do so.

Prevent drips, spillages and leaks when filling and mixing pesticides as the active ingredient can run-off into farm drains, surface and ground waters causing a significant pollution hazard.

Keep appropriate records of pesticide use e.g. spraying, Local Environmental Risk Assessment Procedures (LERAPs).

Minimise the volumes of waste pesticide produced.

Have a contingency plan in case of accidental spillage. Carry out a COSHH assessment. If in doubt seek professional advice.

Consider using a biobed to minimise the risk of pollution of watercourses from pesticide handling activities. A design manual for such areas is expected to be made available in early 2003 and will be publicised by the CPA under “The Voluntary Initiative”.

Investigate the possibility of manufacturers and suppliers offering a recovery service for used containers.

DON'Ts

Spray crops unless the weather conditions are right.

Spray crops without selecting the nozzle system to suit the product(s) being applied, the crop and spray volume. Use advice on the product label, Home Grown Cereals Authority (HGCA) chart, Crop Protection Association (CPA) leaflets and British Crop Protection Council (BCPC) Handbooks.

Store more pesticide than is required for immediate use.

SECTION 10

DISPOSAL OF ANIMAL CARCASSES

Note: - The guidance given in this section is based on the current legislative position. It is expected that legislation will be introduced later in the first half of 2003 which will prohibit burial or burning on farm in most places. If possible, the fully revised PEPFAA Code will incorporate these changes.

The disposal of animal carcasses on farm can present significant dangers. Apart from risking prosecution for causing water pollution, there is a serious risk of spreading disease to stock on that holding or on neighbouring farms as well as a public health risk.

Deaths of cattle

At present, there are certain specific rules relating to cattle deaths. These are as follows:-

- **ALL** sudden unexplained cattle deaths must be reported immediately to the local veterinary inspector or local Animal Health Office. The carcasses will be routinely tested for anthrax.
- Where deaths are explainable, **ALL** fallen cattle and animals slaughtered on-farm for welfare reasons over 24 months old should be reported to AHF Ltd (Tel: 0800 525890) who will arrange to collect the carcasses and arrange for testing for transmissible spongiform encephalopathies.
- Explainable deaths of cattle 24 months old or under are not currently subject to special rules, and may be dealt with as described below.

All other deaths

Currently a number of options exist for disposal of carcasses of animals that die on the farm. The Animal By-Products Order 1999 stipulates that disposal should be by either rendering or incineration. It is also permissible to consign carcasses to the local knackery or zoo for disposal purposes. Only in exceptional circumstances should burial or burning on-farm be considered. Where the options are not available then carcasses should be disposed of on-farm in accordance with the following guidance.

DOs

Report all sudden deaths and seek veterinary advice.

Comply with the Animal By-Products Order 1999 and attempt to use an incinerator or rendering plant before considering burial on farm.

- Bury animal carcasses with at least 1 metre of covering soil to prevent dogs, foxes or vermin getting access.
- Keep a Location Plan of all burials and a note of type of animal buried.
- Consult SEPA for confirmation that the proposed site is suitable for carcass burial.

- Choose sites where there is at least 1 metre of subsoil at the bottom of the burial pit.
- Make sure that incineration is carried out at the highest temperature possible.
- Make sure that burning of carcasses in the open is undertaken with care and by the approved method.
- Seek professional advice if in doubt. Advice on veterinary issues is available from your local Animal Health office. SEPA will provide advice on environmental pollution issues.

DON'Ts

- Leave carcasses unburied or open to dog or fox access for any length of time.

- Add lime to a lined disposal pit.
- Dump carcasses in remote areas.

Operate an animal carcass incinerator without prior consultation with SEPA.

- Bury carcasses any closer than 250m from any drinking water supply; 50m from any watercourse or 10m from any field drain.
- Locate burial pits in areas prone to water logging or at risk of flooding or that are underlain by sandy or gravelly soil.
- Bury carcasses in polythene bags or other impervious material.
- Bury carcasses on archaeological sites or on sites designated for their nature conservation interest.

SECTION 11

AGRICULTURAL FUEL OIL

Agricultural fuel oil is poisonous and spillages into watercourses and onto land can have serious implications for plant and animal life. Each year, accidental spillages cause several pollution incidents. Oil is a **highly polluting** substance and its escape has serious implications for soil and water environments.

The Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001 relate solely to oil storage by agricultural businesses. Separate regulations are to be introduced to cover all other oil storage arrangements for non-farming businesses in due course.

DOs

Comply with the statutory requirements of the Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations 2001 if your farm storage of agricultural fuel oil exceeds 1250 litres.

- Ensure that any new fuel oil storage above 1250 litres capacity is surrounded by a bund capable of containing 110% of the capacity of the tank.
- Make sure that the bund and the base of the storage area is designed and constructed to be impermeable and remain so for 20 years.
- Keep every part of the tank within the bund.
- Ensure any outlet tap or valve can only discharge into the bund in the event of a loss or leakage and also keep this outlet shut and locked when not in use.

DON'Ts

Install a fuel tank without contacting SEPA as you are required to give at least 28 days written prior notice.

Site the fuel oil storage area within 10m of a drain or watercourse.

Continue to use a fuel storage tank that poses a significant risk of pollution as SEPA may serve a 'notice' requiring you to carry out improvements to bring the installation up to the standards set by the 2001 Regulations.

Pour or allow fuel oil to enter a watercourse as this is an offence in terms of the Control of Pollution Act 1974 (as amended).

Use detergents in attempting to clear up any spillage unless the area is contained so that material is collected for safe disposal.

Be afraid to seek professional advice on clean up if there is a spillage or loss.

DOs

Ensure that all staff and contractors working on your farm are aware of the pollution dangers from fuel oil spills and how they should be dealt with.

Ensure that a Contingency Plan is drawn up to deal with any potential spillage.

Ensure that proprietary kits or absorbent materials are readily available to deal with spillages.

Contact SEPA immediately in the event of a serious loss or spillage of oil.

DON'Ts

Ignore small leaks from fuel tanks.

Forget to carry out or neglect regular maintenance of fuel storage areas as pollution does not have to occur for SEPA to serve a notice.

Overlook the need to empty the bund of accumulated, uncontaminated, rainwater.

SECTION 12

WASTE MANAGEMENT AND MINIMISATION

Note: The guidance given in this section is based on the current legislative position. It is expected that new legislation will be introduced in 2003 which will cover farm wastes for the first time. SEERAD or SEPA should be consulted for clarification or an update of the current position.

There may be opportunities for farmers to make savings in animal feeds, sprays, fertiliser, field crops and produce in store. Waste minimisation should be fundamental to decisions on farm waste management. Savings in energy and water use as well as a reduction in water pollution risks are all possible by adopting a planned system of waste minimisation and audit. A frame-work for cost-effective waste management is set out in the following order of priority:

- **Avoid**
- **Reduce**
- **Re-use**
- **Recover**

DOs

Consider using the DEFRA/BOC Manual "Opportunities for saving money by reducing waste on your farm" to help identify potential cost and efficiency savings in minimising waste production.

Only burn waste oil in appliances authorised by SEPA for this purpose.

Reduce, re-use and recycle waste, wherever possible, by segregating waste such as plastic bags and wrapping materials.

Collect and store waste plastic straight after use and contact an approved plastic recycling scheme if the plastic is deemed no longer useable.

Recycle waste oil, lubricants, scrap metal and tyres.

DON'Ts

Import solid wastes destined for landfill sites without proper authority. Consult SEPA about the legal requirements.

Contaminate clean water with livestock slurry or animal manures or farmyard run-off.

Burn plastic, packaging, tyres, waste oil or waste straw.

Dump old machinery, scrap metal, plastic or other rubbish on farmland or farm tips. *(Such disposals are likely to be covered by forthcoming waste legislation.)*

Tolerate fly-tipping. Report any such activity to the Police, Local Authority or SEPA.

Hesitate to get involved in any local recycling initiatives operated by Machinery Rings or other groups.

DOs

Keep farm steadings and farmland clean and tidy and free from unsightly litter from farming activity, especially farm plastics, containers and old machinery.

Monitor water use carefully and reduce any leakage or wastage, especially where such leakage is contributing to levels of waste production (i.e. of stored slurry).

Use an irrigation scheduling service or direct measurements of soil status to avoid over and under application of irrigation water.

Ask for free advice from the Energy Efficiency Office. Call the Environment and Energy Helpline on Freephone 0800 585 794.

Follow the Scottish Executive "Four Point Plan", the individual components of which are specified as follows:

- produce and implement a risk assessment for manures and slurries;
- produce and implement a farm nutrient plan;
- protect watercourses and carry out water margin management;
- undertake a separate assessment of farmyard drainage.

SECTION 13

SOIL PROTECTION AND SUSTAINABILITY

Soil quality and husbandry is fundamental to the sustainability of agriculture, landscapes and biodiversity. Soils not only form the basis of agricultural production, but also filter and buffer pollutants. Good soil management can play a significant role in minimising diffuse pollution. Soil is a finite resource which should be well managed and protected. Soil management must meet the needs of the present without compromising the ability of future generations to meet their own needs.

While economic pressures may lead to change in land use over time, it is essential to adopt practices which maintain the long-term ability of the soil to support farming and human activities. Such practices protect the soil from long term damage, not only from pollution but also due to degradation and loss of quality.

DOs

Comply with the Sludge (Use in Agriculture) Regulations 1989 (as amended) if sewage sludge is to be applied to prevent contamination with Potentially Toxic Elements (PTEs).

Understand the capabilities and limitations of the soil you are managing.

Inspect soils routinely for loss of structure, signs of damage, capping and erosion.

Identify and protect vulnerable soils prone to erosion and leaching.

Ensure effective use of chemical and organic fertilisers by basing rates of application on soil analysis and identified crop needs.

Sample and analyse soil, approximately every five years, and apply lime to achieve target pH for crop or grass growth.

DON'Ts

Strip or remove topsoil for sale as this is an offence unless you have planning permission.

Apply inorganic fertilisers or organic manures without taking account of soil nutrient status and crop requirements.

Allow soils to become contaminated with PTEs.

Allow land drainage systems to lose their efficiency.

Leave soil fallow where there is a risk of flooding or soil erosion.

Traffic, cultivate or graze land when soil moisture conditions are wetter than field capacity (i.e. when the soil is not firm) as this will lead to wheel ruts, smearing and poaching of soil.

DOs

Maintain organic matter levels, where they are lower than desirable, by grass breaks, green manures or the addition of organic manures.

Maintain soil structure and avoid over-working and compaction.

Achieve rougher seedbeds if cropping allows, so as to reduce run-off, especially to withstand winter rainfall, and take account of the contour and slope of land in doing so.

Establish good crop cover before winter as this will reduce losses of topsoil and nutrients.

Correct deep soil compaction by carrying out subsoiling on suitable soils with satisfactory drainage.

When irrigating, ensure water application is uniform and rates are not too high or droplets too large. This will avoid sealing the soil surface and minimise run-off and soil erosion.

Alleviate compaction and rutting as soon as practical, after late harvested crops such as maize or potatoes to reduce run-off.

Incorporate chopped straw evenly.

Leave vegetated buffer strips adjacent to watercourses, wetlands and waterbodies to trap sediment.

Control livestock access to ditches and watercourses so as to allow natural vegetation time to recover.

Carefully plan the movement and feeding of livestock on your farm. The inappropriate location of tracks or ring feeders can lead to significant soil erosion.

Divert track run-off to buffer strips or vegetated areas to remove sediment.

DON'Ts

Position access points and gateways at the lowest point of a field to reduce the potential for channelling surface water run-off and cut-off the route for any eroded soil particles.

Leave the bed or banks of ditches bare to prevent erosion and to encourage filtration.

Clear out entire lengths of ditch at one time, leave a third to a half vegetated, where possible, to reduce erosion and help sediment to be filtered.

Cause erosion, compaction or smearing of soil by undertaking activities on the land when conditions are too wet.

Site feeders adjacent to watercourses, where possible.

Carry out significant excavation works in watercourses without consulting with SEPA.

Erect physical barriers in watercourses as these can cause serious erosion.

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