

Summary of the Revision of the Scottish NVZ Programme

The Action Programme for Nitrate Vulnerable Zones (Scotland) Regulations 2008 were made in September and are due to come into force on 1 January 2009. They update and replace the current Action Programme Regulations. Some rules, notably those requiring sufficient slurry storage capacity, have a transitional period to give farmers time to make the necessary investment.

The objective of the Nitrates Action Programme in Scotland is to minimise the quantity of nutrients, especially nitrate, lost from farming to the water environment. Similar actions have been taken in other European countries, in some cases on a whole-territory basis, in compliance with the Nitrates Directive. It is recognised that nitrates are essential to productive farming. Indeed, an important aim of the Directive is to increase the *efficiency* of the use of manure and thus of fertilisers as a whole for agricultural benefit.

Nitrate is a valuable plant nutrient, but in water it can cause undesirable changes, such as excessive growth of algae, a process known as eutrophication. The Directive requires the protection of groundwater as well as surface waters. It is estimated that 80% of the N content of waters in Scotland is from agriculture. Four nitrate vulnerable zones have been designated - comprising much of the East coast and Lower Nithsdale – covering 14% of Scotland. The Action Programme applies in these areas.

Nitrate is lost from farms either from manure and slurry or from manufactured fertilisers. The Action Programme therefore contains rules about the storage and handling of manure and slurry, especially slurry, but also requires that farmers do not exceed maxima in the amounts of nitrogen fertiliser applied to crops, including grass. These maxima are referred to as Nmax.

The more nitrate is taken up by growing plants, the less is lost to the environment.

It is important to note that responsibility for seasonal lets are excluded from the regulations so compliance with the Nitrates Directive lies with the landowner; therefore, they must ensure that any letting arrangements take account of this issue.

The key Action Programme measures are listed below:

Fertiliser and Manure Management Plan

A Fertiliser and Manure Plan must be prepared and implemented each year. The requirements are greater than in the current (2003) Action Programme. The Plan must include:

- a risk assessment map of the farm in respect of organic manure;
- numbers of livestock and the quantities of manure produced on the farm;
- storage capacity for manure and slurry;
- land available for spreading organic manure; and an
- assessment of crop and grass requirement for nitrogen fertiliser in the year.

The Plan must be drawn up before any fertiliser is applied to the land, and in any case by 1st March each year. The risk assessment is similar to the RAMS map of the 4 Point Plan for livestock farmers.

A record must be kept of the following:

- applications of chemical (manufactured) fertiliser and
- applications of organic manure.

Records must be kept for 5 years.

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Storage of livestock manure

Farms that have housed livestock and produce slurries and poultry manure must, unless exemptions apply, have storage capacity as follows:

- 26 weeks for pig slurry and for poultry manure; and
- 22 weeks for slurry from other livestock.

Guidance will be given on the figures to be used for the volume of excreta produced by different categories of farm livestock and for the total annual N content of the excreta (slightly different from those in the current guidance). Allowances may be made to the volume of slurry that requires to be stored where a slurry separator is used or where there are arrangements for manure or slurry to be transported off the holding.

Funding, normally at the rate of 40%, may be available in the Scotland Rural Development Programme towards the capital costs of new or substantially enlarged manure or slurry storage facilities.

Solid manure (ie farmyard manure and poultry litter) may be stored in temporary field heaps, on the fields where the application is to take place, but for no longer than 12 months.

Application of nitrogen fertiliser

As in the current rules, there are two limits on the application of N fertiliser in organic manure: a farm limit and a field limit.

The Farm Limit is 170 kg N per hectare per year in livestock manure applied in the calendar year to usable agricultural land on the farm (including that deposited by animals whilst grazing). This now applies to grassland as well as arable land. The Government is applying for a derogation to allow up to 250 kg to be applied to grassland with effect from 2009. If successful, the derogation is likely to last for four years. The experience of other countries is that any derogation will involve conditions. Any farmer wishing to take advantage of a grassland derogation should register with the Area Office (by 1 March 2009).

There is also an individual Field Limit. This is 250 kg N/ha/year organic manure to any field. Organic manure includes livestock manure and all other manures derived from organic matter e.g. sewage sludge.

A period of at least 3 weeks must elapse between each completed application of livestock manure to an area on the farm.

Nmax for each crop grown on the farm

Total applications of nitrogen fertiliser must not exceed the Nmax calculation for each crop type, including grass, grown on the farm. The standard nitrogen requirement for each field growing a particular crop is derived from standard look-up tables, taking account of

- the soil nitrogen supply from the previous crop;
- the soil type; and
- any adjustments which may be claimed (a yield adjustment may be applied for where yields have exceeded standard yields).

The Nmax is calculated by totalling the standard nitrogen requirement for all the fields growing a particular crop type. Nmax means the total nitrogen applied as manufactured nitrogen fertiliser plus the crop available nitrogen from organic manure applications. The Nmax for a particular crop type must not be exceeded.

Environmental conditions

Nitrogen fertilisers must be applied as accurately as possible. Fertiliser must not be applied to any land when:

- the soil is waterlogged or flooded;
- the soil has been frozen for 12 hours or longer in the preceding 24 hours;
- the land is covered by snow;

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- there is a significant risk of nitrogen getting into surface water, taking into account the slope of the land (particularly if more than 12 degrees), lack of ground cover, proximity to surface water, weather conditions and the type of fertiliser being applied.

Chemical (manufactured) nitrogen fertiliser must not be applied to any land

- within 2 metres of a surface water or an open field drain (as required by the General Binding Rules which came into effect in April 2008),
- in any other case, in a location or manner that makes it likely that the chemical fertiliser will directly enter any surface water.

Organic manure must not be applied to any land which is situated within

- 10 metres of any surface water,
- 50 metres from any well, borehole or similar water supply.

Method of application

- the use of high trajectory splash plates for the application of slurry is prohibited, with the exception of applications on growing arable crops.

Closed Periods

No applications of chemical (manufactured) nitrogen fertilisers are permitted between the following dates (unchanged from the 2003 Action Programme):

Name of NVZ	Grassland	Other Land
Moray, Aberdeenshire, Banff & Buchan NVZ	15 th September to 20 th February	1 st September to 20 th February
All other NVZ areas	15 th September to 15 th February	1 st September to 15 th February

No applications of manure with high available N (eg slurry, poultry manure or liquid digested sewage sludge) are permitted between the following dates:

Soil Type	Grassland	Other Land
Shallow or Sandy Soils	1 st September to 31 st December	1 st August to 31 st December ^{a,b}
All Other Soil Types	15 th October to 15 th January	1 st October to 15 th January.

^a applications allowed until 15 September if a winter cereal crop is sown by that date.

^b applications allowed until 30 September if oilseed rape crop sown by that date.

Transitional arrangements

The Scottish Government has recognised that some farmers in the NVZs do not have sufficient slurry storage to be able to comply with the storage requirements set out in the Regulations, and that constructing new capacity takes time. These farmers are permitted up to 3 years to bring their storage capacity into line with their livestock numbers. Farmers wishing to claim this provision must report the situation to the Area Office each year. Once compliant, a farmer must not cease to comply (eg by a substantial increase in stock numbers).

In the transitional period a farmer who does not have sufficient slurry storage capacity may be unable to comply with the new closed periods. In such a case the farmer is expected to keep losses of N to the water environment to a minimum as far as is practicable, and in any case may not spread slurry in the month of October.

Guidance

Guidelines on what is required to comply with the revised Action Programme will be sent to all farmers in the NVZs in December. The guidance is to be put on the Scottish Government web-site in November. A series of workshops to be run by SAC is planned.

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Conclusions

The NVZ Action Programme is aimed at using fertilisers, especially manure and slurry, for agricultural benefit while protecting waters against pollution caused by nitrates from agricultural sources. Losses of valuable nutrients to the water environment are losses to farmers. The rules are designed to bring about improvements to Scotland's water environment, consistent with productive and efficient farming.

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