

FACT SHEET

TELEPHONE 0800 327 646 | WEBSITE WWW.FEDFARM.ORG.NZ



FFNZ “10 in 10” Campaign

BACKGROUND

Launched in November 2006, the ‘10 in 10’ Campaign is an initiative of Federated Farmers aimed at:

- Raising awareness around the issue of nutrient loss;
- Assisting our members achieve a reduction in that loss;
- Challenging others to assist in providing technologies and tools to help in reduction; and
- Raising public awareness around the efforts of farmers.

Federated Farmers is committed to continuing environmental improvements and keeping New Zealand farmers well ahead of the rest of the world.

As part of the Federation’s commitment to help members on their path to true sustainability, this fact sheet has been produced. It is the first edition, to be updated as new information and science becomes available.

Federated Farmers realises farmers are innovators, and we hope to harness this individual innovation to the benefit of all. To facilitate this, we are asking farmers who are doing something innovative to help reduce their nutrient loss to email us at 10in10@fedfarm.org.nz so we can pass it on.

AFFORDING CHANGE

While often in the medium to long term adopting many of the tools included in this fact sheet can save money, in the short term they may require investment. Affording this investment may be difficult for some, and looking innovatively for funding may pay off. A few places to start include:

- Regional council regional Landcare grants
- Approaching local environmental groups: challenge them and their members to join you in making tangible reductions
- Learn more through Landcare groups
- Ministry for the Environment Sustainable Management Fund

APPLICATION/MANAGEMENT

- Nutrients in Fertilisers: Fertmark

It is essential to a farmer that a fertiliser contains what it claims to. The use of **Fertmark** (trademarked) fertilisers gives the fertiliser user an assurance that the nutrients claimed by the manufacturer or importer are present in the fertiliser. This gives the fertiliser user agronomic benefit in being able to match the fertiliser with the identified nutrient needs of the plants being grown. It has the environmental benefit that the fertiliser user has the knowledge to accurately match the nutrient needs of the plants being grown with the appropriate fertiliser mix, avoiding excess application of fertiliser.

Since 1996, Fertmark has provided farmers the confidence that what they are buying is reliable and, when used properly, do not pose hazards to animal welfare or food safety. Fertmark certified products display the green Fertmark tick.

Federated Farmers actively supports Fertmark and recommends members use Fertmark fertilisers at all times.

The Fertmark Code of Practice can be viewed at www.fertqual.co.nz/content.php?content.2

- Placement of Fertilisers: Spreadmark

Poor spreading of fertiliser is currently costing New Zealand millions, with the cost to the dairy industry alone estimated at \$38 million, or \$27-100 a hectare per year, according to Dr Ian Yule of the NZ Centre for Precision Agriculture. The importance of evenness of spread has been seen in research, showing patchy distribution can significantly negatively affect paddock production.

Spreadmark (trademarked) accredited fertiliser spreading companies should be used to spread fertiliser by ground or air. Spreadmark accredited spreading companies have trained operators, tested and certified fertiliser spreaders and the company is audited by an independent Spreadmark auditor to ensure compliance with the Spreadmark Code of Practice.

Spreadmark has been ensuring fertiliser users get the best value from their fertiliser purchases since 1994.

Federated Farmers actively supports Spreadmark and recommends members use only Spreadmark accredited spreading companies for both ground and aerial application of fertiliser.

The Spreadmark Code of Practice can be viewed at www.fertqual.co.nz/content.php?content.3

- Industry Code of Practice

The Fertiliser Manufacturers Research Association Code of Practice for Nutrient Management provides the base document for good practice for the total fertiliser industry. The Code of Practice is aimed at improving the standard of fertiliser management for the manufacture, transport, storage and application of fertiliser.

Intended for nutrient advisers and consultants, the Code of Practice is also a good guide for farmers interested in learning more about nutrient management planning and practices.

The Code of Practice is a revised code and has a strong emphasis on nutrient budgeting and nutrient management planning and offers clear guidelines for land managers to follow.

Federated Farmers supports the FMRA Code of Practice for Nutrient Management.

The RMRA Code of Practice for Nutrient Management can be viewed at www.fertresearch.org.nz/code-of-practice

- Nutrient Management Programmes

A nutrient management programme enables a farmer to consider all the nutrient sources available in the soil. Nutrients derived from animal returns of dung and urine in pastoral farming, the nutrient returns from the spread of effluent, or crop returns from nitrogen rich crop residues all contribute nutrients to the soil. A programme uses a nutrient budget as a starting point and moves beyond to get a whole-farm picture.

Farmers should seek advice about nutrient management from qualified advisors using OVERSEER or other specialised nutrient management programmes before committing to purchase fertilisers. A nutrient management programme can often lead to positive environmental and economic outcomes through reducing nutrient loss and fertiliser expenditure.

Federated Farmers urges members to fully utilise nutrient management programmes so only those nutrients actually needed for optimum plant growth are applied to the land.

More information on nutrient budgets and management programmes can be found in recent issues (specifically issue 38 and the March 2006 Special Farmer Edition) of Fert Research's newsletter, at www.fertresearch.org.nz/resource-centre/newsletter-fertiliser-matters

- Nitrification Inhibitors

Nitrogen, while an integral input to production, can cause problems when lost through leaching. New technology can reduce nitrous oxide emissions and nitrate leaching, holding it in the soil and making it available to plants for longer, increasing production by 10-15% and reducing the need for nitrogen fertiliser. Research shows inhibitors can also reduce nitrogen loss up to an impressive 70%, depending on climate and soil type.

Nitrification inhibitors are particularly recommended to reduce the amount of nitrate nitrogen that may leach from the soil profile under urine patches within the dairying milking platform, or may run off dairy pastures during a heavy rainfall or excess irrigation.

Research on inhibitors in various farming systems is currently progressing, with results gradually forthcoming.

Federated Farmers supports the use of nitrification inhibitors in intensively farmed dairy land.

- Identification of Nutrient Transfer

In many pastoral farming systems, nutrient transfer removes nutrients from one area, causing a nutrient deficiency, to another area where excess nutrient levels greater than plant needs may be created. Nutrient transfer is frequently caused by livestock camping on the hill tops or the physical transfer of cationic fertiliser nutrients into gullies.

Several soil tests in one large paddock on extensively farmed land will determine the nutrient needs across a block. Variable rate fertiliser application should be used where different nutrient levels are discerned in extensively farmed land.

Federated Farmers recommend variable rate fertiliser application using GPS for both aerial or groundspread fertiliser application.

- Monitoring

Improving the monitoring of land and water assists in seeing the health of your farm, results of improvements, the areas in most need of improvement, what tools to reduce nutrient loss are most appropriate, and how to maximize production. Tests to improve monitoring include those of soil, mixed-herbage, clover, animals, and water.

Regular soil testing determines the levels of nutrients available in the soil. Soil testing should be undertaken before fertiliser is applied to the soil. Soil testing may be undertaken by fertiliser company technical representatives or appropriately qualified independent fertiliser consultants or farm advisors. The results of soil testing when related to proposed land use will provide the base data for a seasonal fertiliser programme.

Federated Farmers recommends members use regular soil testing before applying any fertiliser to the land.

- Effluent

Managed well, effluent can add important nutrients to the soil, increasing fertility and the productivity of a farm at a minimal cost. It can also improve water-holding capability, soil aeration, drainage, and tillage. Proper effluent treatment and application technology and calibration is vital.

Areas designated for the disposal of farm effluent should be closely monitored for excess nutrient loading. Regular soil testing should be carried out to ensure that no more nutrients than the plants growing on the defined area can take up, should be applied.

Where the application of farm effluent has led to nutrient levels greater than what can be taken up by plants, a cut and carry pasture management system as opposed to grazing the area could be used as a nutrient management tool. This management will reduce soil nutrient levels so loss of nutrients into the environment may be avoided.

New technologies are emerging around effluent as a renewable energy source, while farmers in parts of the world make more money from their effluent than from stock. While these are both likely a ways off in New Zealand, future opportunities are likely to come.

Federated Farmers recommends close monitoring of farm effluent areas and the use of cut and carry management to reduce nutrient loss into the environment.

Information on managing dairy effluent, as well as a great number of other topics around dairy, is available at www.envirodirect.co.nz

While also available on the above website, a recent publication, "Managing Farm Dairy Effluent," is available on CD from alex.oconnell@fonterra.com.

- Other Issues Surrounding Application

There are numerous other issues surrounding fertiliser application, including the following:

- It is preferable to apply in two smaller applications rather than one large application whenever possible;
- It is important to avoid areas of water and application to saturated land and at wet times of the year; and
- Increasing the efficiency of irrigation systems is beneficial in decreasing nutrient loss through leaching and runoff and therefore preventing water from washing your dollars away.

MITIGATION

- Livestock access to waterways

Deer wallowing, sheep causing erosion, and dairy cows defecating in water, often increases the soil and nutrients running into these waterways. Members have already taken steps to address this problem, and by continuing to build bridges and culverts and erect fences will further set themselves apart in reducing nutrient loss and erosion, improving the quality of our water.

To ensure ongoing improvements in water quality, all intensively farmed land should fence livestock stock out of waterways apart from limited access to drink. The test of water quality should always be based on a measurement of the water clarity and freedom from animal impurities and downstream from the livestock.

Federated Farmers recommends that livestock be fenced away from waterways when there is clear evidence of ongoing water quality deterioration.

Best practice guidelines for culvert and bridge construction are available at www.mfe.govt.nz/publications/land/culvert-bridge-oct04/index.html

- Riparian Margins and Wetlands

The use of planted riparian margins around sensitive waterways is a good way to reduce nutrient runoff from adjacent intensively farmed paddocks. Plantings may be bullrushes in wet areas or selected trees used for their nutrient absorption.

Riparian buffers of varying size and composition simultaneously prevent nutrients from entering waterways by filtering surface runoff (phosphorus by 53-98% and nitrate 70-100%), protect and improve water quality, assist in keeping stock out of waterways, and keep your farm on your farm by catching sediment. While a thin grass filter strip would have positive effects, the greatest results would be found with a wide multi-tier system, which can include production trees and plants.

Wetlands also act as great filters. Retaining and fencing existing wetlands and constructing artificial wetlands can do a great deal to decrease nutrient runoff, with nitrate removal up to 90% depending on the size of the wetland.

Regular testing of the water flowing from farm drains into open drains can indicate the level of nutrient loading.

Federated Farmers recommend the use of riparian planting to manage nutrient runoff from intensively farmed land.

Detailed information on riparian management can be found at <http://www.mfe.govt.nz/publications/water/managing-waterways-jul01/index.html> while more information exploring the effectiveness of margins and wetlands are explored in: Matheson, et al.; *Effects of Riparian Vegetation on Nitrate Removal Processes*, Dairy Farm Soil Management, Massey University; 13-14 February 2002. Nguyen, et al.; *Nitrogen Removal by a seepage wetland intercepting surface and subsurface flows from a dairy catchment in Waikato*; Massey Fertiliser Technical Workshop, 2002.

OTHER

- Integrated Catchment Management Group

Integrated Catchment Management (ICM) is a process where various stakeholders, often including individuals, organisations and government, develop a vision and act together to manage the natural resources of their catchment. It is seen by some as a likely way in which water resources may be managed in the future.

Becoming involved is a good way to create positive relationships with others in a catchment, with the possibility to gain assistance in implementing some of the mitigation techniques discussed above.

More information on ICM is available at www.landcare.org.nz/integrated_catchment_management/projects.asp

CONTACT

Federated Farmers of New Zealand fact sheets are produced for our members by the Federation as a quick and easy reference guide to general information on topics of interest. If you wish to reproduce the information please ensure that you provide appropriate acknowledgement of the Federation as the source.

To either seek further advice on information on the material contained in this fact sheet or to order a contract or agreement ring 0800 327 646.

The information contained within these fact sheets should not be relied upon in lieu of legal advice. If you require specialised legal advice, please contact Federated Farmers' team of employment lawyers and OSH specialists.