



SAFETY MANUAL FOR THE GROUNDSPREAD INDUSTRY



THIS MANUAL HAS BEEN ISSUED TO

TO CERTIFY THAT HE/SHE HAS ATTENDED THE N.Z.G.F.A. SAFETY COURSE

Acknowledgements

Best Practice Guidelines for Ground-spread Fertiliser in New Zealand

These guidelines have been developed with the hard work and cooperation of:

New Zealand Ground-spread Fertiliser Association (NZGFA)

The Department of Labour (DOL)

The place and context of this document

Every effort has been made to ensure that the information contained within this publication is accurate. Its contents should be seen as a comprehensive and authoritative guide to what is considered to be “Best Practice” by the industry for the industry.

The Best Practice Guidelines for Ground-spread Fertiliser in New Zealand has been produced as a living document. Your comments and suggestions are welcome to improve this document and its contents. It is our intention to review the Best Practice Guidelines regularly. We believe this document should represent the changing nature of the industry and reflect up to date best practices for Ground-spread fertiliser in New Zealand.

This document has primarily been written for operators and those in the Ground-spread fertiliser industry. However it is hoped that the information provided within should also be valuable to those who are associated with the industry including farmers, the public, children and livestock.

This document provides a resource but is not considered sufficient on its own to operate within the industry. Comprehensive operator training should be sought in addition to training and education regarding the fertilisers and machinery that is utilised.

The groundspread association conducts courses in fertiliser application and safety. For further information contact the N.Z.G.F.A. executive director at:

P.O. Box 414

Ashburton

Phone 03 307 8145

Table of Contents

Section 1: Introduction and Legislation	4
Reference information	4
Legislative and regulatory context	4
Terminology	10
Section 2: General Safety	11
Operator Training and Safety	11
Section 3: Job Planning	14
Section 4: On-site Practical Guide	16
Pre-start check lists	16
Section 5: Product Hazards	20
Product Hazards and Controls	21
Section 6: Storage and Maintenance	21
Fertiliser Stores	21
Safety during maintenance	22
Tyres	24
Section 7: Specific Hazards and Environmental factors	24
Hazards and Risk assessment	25
Attitude and complacency	25
Fatigue and distractions	25
Driving techniques	26
Safety belts and Operator Protective Structures	27
Machine hazards	27
Ground conditions	28
Pasture composition and sudden terrain changes	28
Slope and aspect	29
Environment and Weather changes	30
Access, bridges and culverts	31
Section 8: Emergency Planning	31
Man alone policies	31
Towing disabled or stuck vehicles	32
Other Issues	32

Section 1: Introduction and Legislation

Reference information

- Health and Safety in Employment Act 1992 (HSE)
- Hazardous Substance and New Organisms Act 1996 (HSNO)
- Resource Management Act (RMA)
- Health and Safety in Employment Regulations 1995
- Employment Relations Act (ER)
- Hazardous Substances (classes 1 to 5 controls) regs 2001
- Hazardous Substances (classes 6, 8 and 9 controls) regs 2001
- Hazardous Substances (identification) regs 2001
- Hazardous Substances (emergency management) regs 2001
- Hazardous Substances (personnel qualifications) regs 2001.

Websites for further information

- <http://www.groundsreaders.co.nz/page.php?1>
- <http://www.dol.govt.nz/>
- <http://www.fedfarm.org.nz/>
- <http://www.legislation.govt.nz/>
- <http://www.epa.govt.nz/>
- <http://www.epa.govt.nz/search-databases/Pages/default.aspx>
- <http://www.fertqual.co.nz>

Legislative and regulatory context

This document will focus on the implementation of the HSE Act and Regulations. However, the other Acts that specifically influence this industry should be reviewed and applied where relevant. There are three

main Acts that influence the Ground-spread Fertiliser industry:

- The Health and Safety in Employment Act 1992 (HSE);
- The Hazardous Substance and New Organisms Act 1996 (HSNO); and
- The Resource Management Act 1991 (RMA)

Provisions in the Health and Safety in Employment Act 1992

Object of the Act

The object of this Act is to promote the prevention of harm to all persons at work and other persons in, or in the vicinity of, a place of work. To do this, it imposes duties on employers, employees, principals and others, and promotes excellent health and safety management by employers. It also provides for the making of regulations and codes of practice.

Employers' duties

Employers have the most duties to perform to ensure the health and safety of employees. Employers have a general duty to take all practicable steps to ensure the safety of employees at work. In particular, they are required to take all practicable steps to:

- Provide and maintain a safe working environment;
- Provide and maintain facilities for the safety and health of employees at work;
- Ensure that machinery and equipment is safe for employees;
- Provide Protective Clothing and Equipment;
- Ensure that working arrangements are not hazardous to employees; and
- Provide procedures to deal with emergencies that may arise while employees are at work.

Taking “all practicable steps” in relation to achieving a safe workplace result means doing everything that it is reasonably practicable to do in the circumstances, having regard to:

- The nature and the severity of the harm that may be suffered if the result is not achieved.
- The current state of knowledge about the likelihood of harm of that nature and severity if the result is not achieved.
- The current state of knowledge about harm of that nature.
- The current state of knowledge about the means available to achieve the result and the likely efficacy.
- The availability and cost of each of these means, to ensure safety.

Hazard management

Employers must identify and regularly review hazards in the place of work (existing, new and potential) to determine whether they are significant hazards and require further action. Employers are required to record details of harm or situations that could have caused harm in their place of work. Employers are also required to investigate incidents where serious harm occurs to determine if it was caused by or arose from a significant hazard¹.

Serious harm, or Harm (being more than trivial) where the severity of effects on any person depends (entirely or among other things) on the extent or frequency of the person's exposure to the hazard, or

Harm that does not usually occur, or usually is not easily detectable, until a significant time after exposure to the hazard

Where a hazard is significant the HSE Act sets out the steps employers must take. These are:

- Where practicable, eliminate the hazard;
- If elimination is not practicable, isolate the hazard; and
- If it is impracticable to eliminate or isolate the hazard completely, then the employers must minimise the hazard to employees.

1. "Significant hazard" means a hazard that is an actual or potential cause or source of harm.

Where a hazard cannot be eliminated or isolated, employers must in addition, where appropriate:

- Ensure that protective clothing and equipment is provided, accessible and used;
- Monitor employees' exposure to the hazard;
- Seek the consent of employees to monitor their health; and
- With informed consent, monitor employees' health.

Information for employees

Before employees begin work, they must be informed by their employers of:

- Hazards employees may be exposed to while at work;
- Hazards employees may create that could harm other people;
- How to minimise these hazards to reduce the likelihood they will become a source of harm to themselves and others;
- The location of safety equipment; and
- Emergency procedures.

Employers are also required to inform employees of the results of any health and safety monitoring. In doing so, privacy of individual employees must be protected.

Employers to involve employees in the development of health and safety procedures Employers must provide reasonable opportunity for their employees to participate in ongoing processes for the improvement of health and safety in their place of work.

Training for employees

Employers must ensure employees are either sufficiently experienced to do their work or are adequately supervised by an experienced person. In addition employees must be adequately trained in the safe use of equipment in the workplace, including protective clothing and safety equipment.

Safety of people who are not employees

Employers are also responsible for the health and safety of people who are not employees. Employers must take all practicable steps to ensure that employees do not harm any other person while they are at work, including members of the public or visitors to the place of work.

Duties of employees and self employed persons

Employees and self-employed persons are responsible for their own safety and health while at work. They must also ensure that their actions do not harm anyone else. However, their responsibilities do not detract from the employers' or principals' responsibilities.

Duties of principals, contractors, operators and employees

All those involved in the workplace have responsibilities under legislation. For the Ground-spread fertiliser industry it is important to ensure the protection of those who directly work within the industry, but also of those people who may be affected by the application of fertilisers in the course of their work. This includes not only operators, but also farm workers, the public, children and animals. While the actual hazards and risks can vary from project to project, it is up to those involved to clarify various responsibilities.

Specific duties of each party to this industry may include the following.

- A. Property owners and persons who control the workplace need to ensure that:
- Adequately qualified contractors and consultants are employed.
 - Sufficient monies are available to fund the works and the temporary works so that provisions can be made to protect employers, employees and others against the various hazards that may arise.
 - The scope and all requirements are clearly communicated via specifications, drawings, or other information, to the operator.
- B. Main contractors and subcontractors who engage others or contract for ground-spread fertiliser need to:
- Plan the work to be carried out and specify any special requirements for the project.

- Coordinate the supply, storage and application of fertilisers.
- Ensure the safety of others who may be in the vicinity of the spreading area, including members of the public.
- Provide for public protection if applicable. This may include coordination with local authorities and obtaining permits as necessary.
- Provide information about the proximity of powerlines and protective measures to be taken
- Clearly communicate via specifications, drawings, or other information, the scope and all requirements, to the operator.

C. Ground-spread fertiliser companies must:

- Develop a clear understanding of the spreading required.
- Prepare and plan their controls and a system to monitor them (as necessary), identifying potential hazards.
- On completion of the spreading, provide the client with documentation, confirming what fertilisers were used and details of any on-going hazards.

D. Operators must:

- Understand any limitations and potential hazards that could affect their work, e.g. fertiliser storage.
- Report all accidents/incidents to their employer. If self-employed, all serious harm incidents/accidents must be reported to the DOL as soon as possible.
- Carry out their work so as not to endanger others in the vicinity.

Accidents and serious harm (records and notifications)

The HSE Act requires employers, principals and self-employed people to

- Keep and maintain a register of all work-related accidents and serious harm. This includes every accident that harmed or might have harmed a person (near miss).

- Investigate all accidents, harm and near misses to determine whether they were caused by a significant hazard
- Notify serious harm that occurs to employees or any person while at work to the Secretary of Labour (in practice, the nearest Department of Labour (DOL)) office, as soon as possible. The DOL office will advise whether it wishes to investigate the accident and what action may be taken in the meantime. This means that both the principal and the ground-spread company must report the incident to the DOL

The Health and Safety in Employment Regulations 1995

Regulations are promulgated from time to time under the HSE Act. Legally, the requirements of both the Act and the Regulations must be complied with.

Regulations may, among other things, impose duties on employers, employees, designers, manufacturers, and others relating to health and safety. These regulations may apply to places of work, plant, processes or substances and may deal with particular problems that have arisen.

See: <http://www.legislation.govt.nz/>

Terminology

Operator - person operating the equipment

Competent person – person trained and experienced in the correct procedures

SDS – safety data sheets

PPE – protective personal equipment

DOL – Department of Labour

HSE – The health and safety in employment act 1992

HSNO – The hazardous substance and new organisms act 1996

RMA – The resource management act

NZGFA – New Zealand Groundspread and Fertiliser Association

Section 2: General Safety

Working within the ground-spread fertiliser industry exposes workers to a number of potentially very serious hazards. Not only are high volumes of potentially harmful fertilisers involved, workers are often working alone and in a vast range of environmental conditions.

These and other factors heighten the need for comprehensive operator training and job planning.

Operator Training and Safety

Employers need to ensure that staff are adequately trained to complete their work. Given the nature of this industry, in most cases this requires staff to be trained to a level where they can work unsupervised. It is recommended that employers keep a training register for employees to enable the identification of both strengths and areas that need improvement.

Only a competent person should operate the trucks and /or machinery. Operators should hold the appropriate class of license for the vehicle being operated or equivalent unit standards.

Under the HSE Act, among an employer's responsibilities is the need to provide training, protective personal equipment (PPE) and a safe working environment.

In return, employees are required to work in such a way as to ensure their safety and the safety of others. They must follow all health and safety policies and procedures and must wear any PPE provided. One way to ensure expectations are clear is to have a 'code of conduct': an example is provided below.

Code of conduct for ground spreading

- Always observe the required safety precautions and procedures set out in safety manuals and guides.
- Always comply with the laws, regulations and codes of practice that govern the industry.

- Always carry out regular checks of all identified hazards and constantly look out for new hazards.
- Once hazards are identified, ensure there are adequate controls in place. If the hazard cannot be eliminated, then it should be recorded on the hazard register and your supervisor must be informed.
- Always report any accident or near miss.
- Never use any substance or compound unless you know how to handle it and the risks associated. If in doubt wear gloves.
- Always wear or use any safety gear that is provided.
- Never remove any safety device or guard.
- Always operate and maintain vehicles and machinery in a safe and correct manner.
- Always be aware of the movement of people and vehicles around you when you are working.
- Never work when affected by alcohol or drugs. If you have been prescribed medication, ask your doctor about any effects it might have on your ability to work safely.
- Conduct yourself in a professional manner.
- Know the emergency procedures and let someone know where you will be, especially when working alone.

Fatigue, stress and health issues

Due to the nature of the industry, long days are often taken for granted. However, it is important that both employers and employees take the issues surrounding fatigue seriously and know how to manage it.

Fatigue and state of health have a major effect on the ability to concentrate and make rational decisions. People who are tired make mistakes, have lower productivity and are prone to more serious accidents. Fatigue is often an underrated hazard, and it is critical that employers and employees understand how to manage it.

Log book regulations are designed to reduce the chance of a driver having accidents due to fatigue. However there are a number of external factors that may also influence fatigue. These include stress (both at home and in the workplace), lack of sleep, being overworked, some medications, alcohol and other drugs as well as general health.

The HSE Act requires that 'all practicable steps' are taken to identify, control and monitor all hazards. The 'control hierarchy' requires that hazards must be eliminated, isolated or minimised (in that order). Both elimination and isolation control the hazard, while minimisation only protects the individual, the person who was trained, who read the sign, who is wearing the PPE etc.

Below are some guidelines to help manage fatigue in the workplace. However, as it is likely that there are other factors contributing to the fatigue, both employers and employees should assess fatigue on an individual basis.

Drivers must have:

- A 10 hour break in any 24 hour period;
- A half hour break after every 5.5 hours of on-duty time;
- A 24 hour break after 70 hours on duty; and
- A maximum of 13 hours on duty in any work period.

The Employment Relations Act (ER) contains provisions about working conditions and should be referred to for further details.

Other Health issues

Every day operators work with potentially harmful substances. Ensure that gloves are used at all times, and because you may have traces of fertilisers on your hands ensure that you wash them thoroughly before eating food or putting your hand near your face and eyes.

Always carry enough fluids to prevent dehydration during the day. Dehydration reduces your ability to focus and make judgements. The use of alcohol and drugs can also adversely affect you. Operators work with heavy machinery and high volumes of fertiliser so It is important to monitor health

issues and your employer can work with you regarding these. Depending on your role health monitoring may include sight and hearing checks, and monitoring of exposure to certain substances.

Section 3: Job Planning

Job planning is a useful tool to ensure not only efficiency and productivity, but that the appropriate health and safety measures have been taken. Scoping the project allows you to ensure that you have the right equipment and product with you and allows you to identify most of the hazards that you will encounter. (Once on-site, you should complete a quick hazard identification such as ground conditions and other environmental factors that will be specific to that location).

To complete a job plan, break the task down into sections and identify the hazards (and the controls) that are found with each task. Job planning can be quick and in many cases pre-done. An example of a job plan (or task analysis) is below.

Operator receives job

Verifies all instructions and checks for product hazards
Estimates time scale for job with dispatcher

Carries out vehicle and equipment checks

Travels to spreading location and contacts farmer or
communicates with base on arrival.

If property owner is present check spreading details, confirm
paddocks and check for hazards that may be present.

Assess the ground and weather conditions

Determine order that paddocks will be spread with regard
to slope and amount of load

Continue monitoring ground conditions and weather,
take rest breaks as required

Communicate with base as necessary.

Communicate with the farmer and/or base when finished

Section 4: On-site Practical Guide

With the job plan in place, the task, necessary products, PPE and other equipment required will have been identified and everything will be ready to go.

Pre-start check lists

All operators should be trained to the specifics of the job. Before you start, check your vehicle, machinery, products, the site environment etc.

Know your machine's capabilities and limitations

General

- Always wear your safety belt.
- Ensure that the cab is free of loose objects.
- Adjust the seat for optimum position.
- Do not carry unauthorised passengers.
- Make sure that mounting points and hand grips are free of mud and grease.
- Clean the windscreen and side windows to enable maximum visibility.
- Be fully clear on where you are going and what you are doing.
- Ensure that there are no loose materials on your vehicle that could fall onto the roadway or other vehicles.
- Ensure that your covers are tied or rolled securely.
- Make sure that the trailer is secured and all lights and brake lines are coupled.

Machine Checklist

The machine needs to be checked each day, and a more thorough inspection carried out once a week. Below is an inspection checklist:

- Safety equipment
- Fuel level

- Oil level
- Coolant level
- Tow strops or ropes
- Tyre pressure / wheelnuts
- Springs and hangers
- Brakes
- Steering
- 4wd drive and/or diff lock
- Hydraulic levels
- Lights
- Over-dimension equipment
- Chain / belt is functioning.
- Check spinners work (in a safe area)
- Check communications equipment
- Check tow coupling, brake and light sockets

Roll-over covers and stockpiles

Roll-over covers are recommended at all times as they prevent the product from being blown or spilt from the vehicle.

Ensure that they are the right size, in good condition, tied properly and that there is no loose product on them before travelling on the road. Do not overload the vehicle so that covers will not fit.

If there is a strong wind find a sheltered area to roll out the cover and do not attempt to unroll the cover by yourself. Especially in high wind, both the cover and product have the potential to be flicked. This is particularly dangerous around the face and eyes.

Loader Safety

- Where possible, avoid climbing on to the load. However, if it is necessary, ensure that there are safe climbing points and take extreme care while working on the load.
- It is recommended that those who use loaders and/or tractors who regularly should load their own vehicles to have the appropriate licence endorsement or unit standard.
- When loading trucks from a stockpile choose a work pattern that enables you to work in a small area with few manoeuvres.
- Always ensure that travel paths are clear.
- Ensure that the driver and passengers of the vehicle that you are loading remain visible at all times.
- Always carry the bucket low so that it does not block your vision while travelling – this will also increase the stability of the machine.
- Extreme care must be taken when working on or close to slopes.
- If the machine begins to slide on a grade, immediately dump the load and turn the machine downhill.
- Be aware of the effect of the wind on the product while loading.
- Ensure that stones and turf are not picked up from the stockpile as this could cause breakage or blockage of the spreader.
- Make sure that loader brakes operate before commencing loading.
- Never coast in neutral when travelling downhill.
- Do not use the transmission as a brake.
- Always use the correct gears – this will give better traction and control of the machine.
- Avoid steep travel routes.
- Do not drive on the road without the appropriate licences.

Bin Hazards

- Ensure there are no blockages in the bin before loading. Never climb into the bin while the machine is running.
- Bins must be kept in good condition and should also have both daily and weekly inspections.
- Keep chain or belt in good condition and at correct tension.
- Keep rear slides lubricated and cascade clean.
- Keep underside of bin and vehicle clean to prevent corrosion – with particular attention to cross-members and brake lines.
- Check and grease spinner bearings regularly.
- Keep spinner vanes clean.
- Keep back plates in good condition.
- Inspect and note any rust and corrosion. This may compromise the integrity of the vehicle.
- In addition to this inspection, it is also important to make sure that any tool boxes or storage boxes are securely closed. If a shovel is carried ensure that it is tied securely. All surfaces must be clean of any material that could fall onto the road or onto other vehicles.

Trailer Hazards

As with all equipment, it is important to inspect it before each use to prevent potential harm.

- Ensure that tow coupling is clean and greased and towing eye is in good condition.
- Make sure that hydraulic couplings are clean and properly inserted.
- Check light couplings and make sure that lights work.
- Test brakes and ensure that park brake works.
- Make sure that all mud guards and mud flaps are securely attached.
- Ensures that tail door shuts firmly and that there are no leaks.

- Do not lift or tip the trailer unless it is on a level surface.
- Do not climb into the trailer while it is in the unloading position.
- Check hydraulic lines for wear or deterioration.
- Check all tyres and wheel nuts daily.
- Ensure coupling is properly engaged and locked.

Section 5: Product Hazards

All fertilisers are potentially dangerous. Most of them are required to comply with the HSNO Act 1996. Most Fertilisers are not flammable, however many are ecotoxic (harmful to the environment). Sulphur-based fertilisers may be dust-explosive, and naturally most are poisonous if consumed. Knowing the specifics of the products you are handling is extremely important, particularly as they may have very different emergency procedures and treatments.

All chemicals have Safety Data Sheets (SDS). These were formerly known as Material Safety Data Sheets or MSDS. Manufacturers and suppliers must provide you with these sheets which will include details about their product, including intended use, application, and first aid.

In addition there is a register on the ERMA website that that can be used to search chemical and many product names. This will identify what controls must be complied with under the legislation. The address is <http://www.epa.govt.nz/search-databases/Pages/default.aspx>.

The Regulations applicable to Hazardous Substances are listed below:

- Hazardous Substances (classes 1 to 5 controls) regs 2001
- Hazardous Substances (classes 6, 8 and 9 controls) regs 2001
- Hazardous Substances (identification) regs 2001
- Hazardous Substances (emergency management) regs 2001
- Hazardous Substances (personnel qualifications) regs 2001.

Product Hazards and Controls

It is important to identify the hazards related to the fertilisers that you are working with, and of course, their controls.

In addition, make sure all staff are familiar with the SDS and understand the hazards of the materials that they are working with. A copy of the SDS should also be available to the Principal (for example the farm owner).

As it is impractical to eliminate most of the hazards of working with these fertilisers, it is important to isolate the hazards where possible. For example, you can isolate by spreading when other people are not around, [time of day, location etc]. This effectively isolates the hazard from other people, although there will still be a need to minimise the hazards for the operator.

If isolation is not practical, then minimise the hazards. For example, PPE such as breathing masks and glasses must be worn in windy conditions or when spreading very fine materials.

If a hazard can not be eliminated, it will need on-going monitoring and should be recorded in the hazard register. Monitoring may include being aware of gases given off by some product mixes, especially in confined spaces. Another example is the inspection checklists that are completed.

Section 6: Storage and Maintenance

Fertiliser Stores

On arrival, report to the site office. Do not wander away from your vehicle while waiting and make sure you know the proper travel routes through the store. Follow all safety guidelines issued by the operator of the store.

Ensure that you stay in the machine or in a place where you can be seen at all times while being loaded and that all children or passengers remain in the vehicle while you are at the store. Any rubbish and food wrappers must be disposed of appropriately.

While at the store, wear the appropriate PPE including high visibility clothing. It is important to know the hazards that are present at the store. In addition to the various fertilisers present, environmental factors including slippery surfaces, trip hazards, other vehicles and personnel may be present.

It is important to understand emergency procedure for the site; staff present will be able to make you aware of these.

Once loaded, secure all covers and ensure that there is no loose material that may have been spilt during loading. Tie down all covers before leaving the store.

Ensure that all paper work is completed and secured before leaving the store. This includes obtaining a copy of the SDS sheets if necessary.

Safety during maintenance

Taking all practicable steps means preventing harm and taking precautions. Always identify the potential hazards and their controls before undertaking maintenance. This includes but is not limited to harm from moving parts, machinery stability (if bin is raised), slips, trips and falls and spills (oil).

Do not carry out maintenance and repairs for which you are not qualified.

Eliminate

Before commencing, ensure that the park brake is engaged or that the machine is chocked to prevent movement. Always keep the machine level and where the bin is raised ensure that blocks are used to prevent dropping. Release air or hydraulic pressure before removing any cap, line, valve or fitting.

Before starting maintenance ensure that the machine will not be started by somebody else. This may involve signage, removing keys, engaging safety features and letting other personnel know that you are performing maintenance. Always work to the manufacturer's instructions when making adjustments.

Very few hazards are able to be completely eliminated. While a spill such as oil, fuel and grease can be cleaned immediately to eliminate the potential harm from slips and ignition of the spilt items, other hazards are not so easily rectified.

If there are fume emissions produced during maintenance, they cannot be completely eliminated and will therefore require ongoing monitoring. However, you can significantly reduce the potential harm from fumes in confined space by ensuring adequate ventilation when working indoors.

Always use the correct tools for the job. This includes using the recommended lubricants and fluids, hoisting equipment for heavy lifts (eliminating manual handling) and not working under machines supported by jacks – use wooden blocks or axle stands.

Always disconnect the battery when working on electrical systems or when welding on the machine.

Keep the work area tidy to prevent slips, trips and falls.

Isolate

Isolate the work area if necessary, especially if there may be children around.

Do not remove guards and covers unless required for the maintenance. Replace all guards and covers immediately once completed or if you need to leave the work area for any reason.

Minimise

Minimisation means the controls that protect the individual, the person who reads the sign, has had training, is wearing PPE etc. These should be a last resort and the HSE Act requires that, where practicable, hazards are controlled through elimination or isolation of hazards before minimisation controls are implemented.

Always wear the appropriate PPE. This may include eye and hand protection when grinding and drilling; appropriate footwear, high visibility clothing.

Many detergents, oils, brake and hydraulic fluids can damage your eyes; residue fertiliser may need to be identified and knowledge of the SDS instruction on how to control that hazard is important.

Do not wear loose clothes or jewellery that could be caught on controls or other parts of the machine. While there is still a risk that clothing may be caught, this control minimises that risk.

Keep hands and feet away from moving parts.

Tyres

Make sure that you are on a level surface before changing a tyre and the handbrake is on before jacking a vehicle.

Ensure that the jack is placed securely under the vehicle and that you have the proper tools. Use proper lifting techniques when working with tyres.

Where practicable a safety cage should always be used when inflating tyres. Check tyres for damage or lifting treads before inflating. Check the recommended pressures and any safety warnings before inflating. Always stand to the side of the tyre when inflating – never sit on the tyre. Clip-on inflators are recommended.

Section 7: Specific Hazards and Environmental factors

Knowing the specific hazards that are relevant to the products you are working with is important and the information can be found in the SDS. However you may also encounter other products such as slug baits that you may not specifically be using. Do not under any circumstances handle slug baits or allow slug baits to come into contact with your skin.

You have a responsibility to assess the hazards you may face and ensure that appropriate controls are in place. If you are unsure, find out from the Principal (eg farm owner, farm hand) if there are any other products or specific hazards in or around your work area.

Hazards and Risk assessment

The driver/operator shares responsibility for hazard identification. All workers have the right to refuse to carry out a job if they feel the conditions are unsafe. This right relates to the specific hazard or task that is unsafe. If there are alternative tasks that may be performed (such as spreading another paddock), these should be carried out until satisfactory conditions are present.

There are several types of hazards: driver induced, ground based, machine based and environmental conditions. In this industry, potential harm is almost always serious.

When carrying out the hazard identification (or risk assessment) the driver's state of mind is crucial. As drivers are often working alone, there is rarely the luxury of a second opinion. Risk assessment starts when you first arrive in the paddock and continues until the job is finished. As part of your planning, always have a way out if something unexpected occurs.

Attitude and complacency

Working in high-risk industries often leads a more relaxed attitude towards taking risks. Many accidents involve experienced drivers and while the 'she'll be right' attitude is slowly changing, there is still a long way to go to alter the blasé mindset that some operators have. The environment is constantly changing, even the time of day may affect the conditions.

It is not a competition to go to the most extreme places. Listen to instructions. A driver's life is worth more than a bit of fertiliser on a steep bank; usually fertiliser on a steep siding has minimal effect as lack of soil depth and lack of moisture due to run-off are more limiting.

Fatigue and distractions

As discussed earlier, fatigue can be a major hazard that is often underestimated. Fatigue can have a significant effect on decision making. Contributing factors include:

- Time of day.
- Total hours worked.
- General health.
- Pressure of work/home environment.

Distractions can vary from person to person. Given the nature of this industry, it is important to reduce distractions to a minimum. Eliminate hazards where possible by keeping the cab clear of any loose objects that could interfere with your driving. Before attempting marginal terrain, ensure that you are familiar with equipment. Inspect the slope before you start and identify hazards that may not have been immediately obvious.

Also, while an extra set of eyes and ears can sometimes be useful, passengers can be a major distraction. If you have a passenger make sure your focus does not stray from the task at hand.

GPS is a useful tool, but at the end of the day it is just a computer; you are the expert and need to make sure it doesn't send you into unsuitable conditions. GPS can be used to assist in working off sloped areas. Reduce distractions wherever possible - if the light bars are a distraction, turn them off.

Driving techniques

All drivers should hold the appropriate unit standards and/or license for the vehicle they are using.

When something goes wrong it is important to be able to react instantly. For example; power out of problems, control is crucial. If traction is lost and there is no way forward, stop and get towed backwards.



Safety belts and Operator Protective Structures

Safety belts must be worn on the road if fitted. It is recommended that safety belts be worn if the truck has an operator protective safety structure. Operator protective structures should be fitted to the vehicle if there is any possibility of a roll-over. Given that many machines will need to operate on slopes, roll-over is a potential hazard and adequate controls must be put in place.

Machine hazards

All drivers should be competent and fully trained for all machinery they are using. Complete your daily inspection before you start and ensure the machine has undergone regular maintenance. In this way you can be confident of your machine and concentrate on your driving.

Different tyre types react differently in different conditions. Also, as tyre wear occurs, traction properties change.

Some fertilisers will flow to one side of the bin on slopes, causing a rapid shift in weight distribution.



Ground conditions

Many factors influence conditions on the day. Inspect the ground carefully and walk the paddock if necessary. Plan your route and be aware of uneven ground. Surface conditions can have more effect on traction than slope. Test the brakes on the surface and make sure you have a plan in case problems occur.



Pasture composition and sudden terrain changes

Be familiar with the type of pasture you are working on and how it may affect your work. For example:

- The amount of sap in plants – e.g. thistles, clover;
- Plants with no root structure e.g. moss, areas with grass-grub;
- Sprayed areas have no root structure and dead material can become greasy;
- Long grass can have a lot of moisture underneath;
- Under-runners;
- Springs;
- Leaking troughs;

- K-line;
- Rabbit holes;
- Sheep tracks;
- Bull holes; and
- Plough lines.



Slope and aspect

Know the hazards that you may be working with. Choose the right gear. The ability to read slope and changes in slope comes with experience. Work off flatter areas before attempting sloping areas. Use your spread-width to keep off steeper areas where possible. Plough line is the limit and be aware of any old horse plough lines.

South-facing slopes have a different pasture composition and more soil moisture. The presence of moss increases the potential for accidents.



Environment and Weather changes

These are constantly changing and therefore need to be constantly monitored. Identify the potential hazards and be aware of anything that may affect you, your machinery and equipment, and the spreading. These include factors such as:

- Visibility;
- Fog and mist;
- Frost and ice;
- Thawing frost or ice is the most dangerous;
- Watch for shaded areas with soft ground;
- Rain after a dry spell is very dangerous – creates conditions that can cause aquaplaning; and
- Oily film on roads also rises to the top of moisture.

Access, bridges and culverts

Access tracks can be more dangerous than the paddocks – most are clay based. Sudden weather changes can quickly change the surface of a clay track.

Most bridges and culverts on farms do not have a tonnage rating. If you are in doubt of whether they can support your machinery, verify with the farmer or discuss the possibility of alternative access.



📖 Section 8: Emergency Planning

Emergency planning must be part of all job planning. This includes identifying the hazards outlined on the SDS for all products and having a plan in the event of a spillage, contamination or injury to you or others. In addition there are a number of specific emergencies to consider.

Man alone policies

The company should have a communication system that allows regular contact between driver and base. There should be a reporting policy between driver and base when operating in remote areas – contact should be made at least every hour where practicable.

The owner of the property should be aware that a spreader is operating on the property and should know approximate arrival and departure times.

Towing disabled or stuck vehicles

Ensure that nobody is in the area between the machines.

Inspect all towing cables for damage before use. The cable must have a safe working load sufficient for the weight it will be required to handle.

Attach towing cables only to those points which are recommended by the manufacturer. Take up the slack slowly and do not jerk the cable. Keep the towing cable taut – sudden impact loading can snap the cable.

Before towing, check that brakes are available on the towed vehicle. Know what signals to use between operators. The signal person must be in a safe and visible position. Always keep towing speeds down, use caution and do not stop suddenly.

Other Issues

Depending on your location throughout the country, different environmental factors may be relevant. If for example, frost and ice are likely to occur, you must develop a plan to handle these. Trying to work out what to do after something has already happened may lead to inefficiencies, further harm, not having the correct tools and equipment to handle a situation. Your life or someone else's may be at stake.

Always carry a first aid kit and ensure that clean water is available at all times.



FOR MORE INFORMATION ON HEALTH AND SAFETY
VISIT WWW.DOL.GOV.T.NZ OR PHONE 0800 90 20 90



PLA1086 JUN 09

**Department
of Labour**



Lumley

newzealand.govt.nz