
Farm safety and handling agrichemicals

Summary

- Exposure to chemicals can lead to a variety of immediate or long-term health effects including headache, poisoning, respiratory illness, burns and birth defects.
 - Manufacturers and importers are required to supply a Material Safety Data Sheet (MSDS) that explains how to handle the chemical safely.
 - Always follow the manufacturer's instructions on storage, use and disposal of chemicals.
 - Organisations such as WorkSafe Victoria can offer valuable advice on improving health and safety on your farm.
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Chemicals on the farm can be dangerous. Common agricultural chemicals (agrchemicals) include fuels, solvents, insecticides, herbicides, fungicides, fertilisers and veterinary chemicals. Farmers need to take care when storing, transporting, using and disposing of chemicals to ensure their own safety; their neighbours' safety and that of the environment.

Any chemical should be treated with extreme caution and only ever used according to the instructions. Vapours or direct exposure can lead to a variety of acute (short-term) and chronic (long-term) health effects. Health effects can include headache, poisoning, burns, birth defects, nervous system disorders and some cancers.

Hazardous materials are required by law to include a Material Safety Data Sheet (MSDS) and label. The MSDS gives valuable information on how to safely handle the chemical. Before using any farm chemical, you should read the label, understand the MSDS, do a chemical users course (such as ChemCert), and follow usage instructions.

To further reduce the risks, it is worth remembering that hazardous chemicals can occasionally be replaced with less toxic options. Sometimes, a safer form of the product is available. For example, pellets may be used instead of powder.

Common agrichemicals

Agricultural chemicals may be purchased in various concentrations and forms (such as liquids, powders, granules and pellets), depending on their intended use. Many of the more potent chemicals require the farmer to have completed chemical training to enable purchase and use.

Commonly used agrichemicals include:

- glyphosate
 - aluminium or zinc phosphide – fumigant
 - organophosphates
 - pyrethroids
 - methyl bromide
 - sodium fluoroacetate – '1080' baits
 - strychnine
 - paraquat, diquat
 - cresol
 - alkaline and acid cleaning agents
 - neonicotinoids
 - formalin
 - nutritional supplements – selenium and copper
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- livestock vaccines and drenches

Side effects of exposure to agrichemicals

The effects of chemical exposure depend on the type of chemical and the degree of exposure. If chemicals are swallowed, absorbed through the skin or inhaled as a mist, vapour or dust, some of the immediate effects can include:

- poisoning
- headache
- nausea
- vomiting
- diarrhoea
- pinpoint pupils
- dizziness
- fine muscle twitching
- increased bronchial and lacrimal secretions
- skin rashes and irritation
- chemical burns.

If you notice any of these symptoms after being exposed to chemicals, seek immediate medical attention.

It is very important to report any adverse outcomes from agrichemical use to the **Australian Pesticides and Veterinary Medicines Authority (APVMA)**.

Some long-term effects of chemical exposure can include:

- increased risk of some cancers
- birth defects
- diseases of the lungs, liver or kidneys
- nervous system disorders.

MSDS information for agrichemicals

Manufacturers and importers are required to supply a Material Safety Data Sheet (MSDS) that details information on the chemical, including:

- the registered use of the chemical
- precautions for use
- possible health effects
- safety measures for handling
- contact numbers for further information
- withholding periods – it is the responsibility of the farmers to ensure correct usage and that slaughter or production withholding periods are observed.

It is important that you research chemicals prior to purchase to ensure that you buy the most suitable and least dangerous chemical available to do the job you require.

MSDSs can be found online to assist in safe and effective chemical choices and should be thoroughly read before use and kept in an accessible place for reference.

Safe storage of agrichemicals

Suggestions for the safe storage of chemicals include:

- Always follow the manufacturer's instructions for proper storage.
- Keep chemicals in their original containers and do not pour into smaller bottles.
- Do not remove labels from containers.
- Store chemicals in a locked, well-ventilated shed with floors that will contain spills.
- Store chemicals and appropriate personal protective equipment in different locations.
- Store the filter(s) from masks separately to contaminated protective equipment when not in use – for example, in a zip-locked bag or an ice-cream container.
- Do not store liquid chemicals above solids.
- Separate different classes of chemicals to prevent reactions.
- Store animal feeds, seeds and fertilisers separately from other chemicals.
- Have mop-up materials on hand, such as sand, soil or DrySorb.
- Keep ignition sources well away from chemicals.
- Keep a record of the chemicals you buy, store and use.

Safe transport of agrichemicals

Suggestions for the safe transporting of chemicals include:

- Transport chemicals separately from food, water, animal feeds, seeds and fertilisers. This applies to transport of household and home garden quantities of the chemical, as well as bulk transport.
- Drums of agricultural chemicals should not be transported in enclosed cabins with the driver and passengers.
- Secure your load.
- Carry a written record of the chemicals you are transporting.
- Take all appropriate protective gear along with you.

Safe use of agrichemicals

Suggestions for the safe use of chemicals include:

- Ensure anyone using agricultural chemicals is suitably trained to use both the chemical and any equipment required for application.
- Use chemical decanting kits to reduce the risk of spills and splashes while mixing chemicals.
- Only mix the quantity of chemical required for the task at hand.
- Make sure the decanting and mixing area is well ventilated. If this is not possible, ensure that recommended personal protective equipment (PPE) is worn for enclosed environments.
- Follow the manufacturer's instructions on the label.
- Always wear recommended protective clothing such as chemical-resistant gloves, overalls, goggles and appropriate P2 facemasks or a P3 respirator. (Respirator cartridges should provide multi-level gas protection.)
- Avoid exposing non-target animals or plants.
- Triple rinse equipment after chemical application and dispose of the rinse water (rinsate) appropriately. Rinsate contains low concentrations of the chemical from the cleaning process.

Safe disposal procedures for agrichemicals

Suggestions for the safe disposal of chemicals include:

- Always follow the manufacturer's instructions for proper disposal of both chemicals and rinsate from equipment.
- Thoroughly triple rinse and then puncture empty containers to prevent reuse for other purposes.
- Return empty containers to the manufacturer or check with your local council about proper disposal methods.
- Audit your chemical store on a regular basis and dispose of any excess or outdated chemicals in the appropriate manner.

AgSafe provides for the safe collection and recycling of cleaned chemical containers (through the [**drumMUSTER**](#))

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program) and the collection of unwanted rural, agricultural and veterinary chemicals (through the **ChemClear** program).

Seek medical help for ill-effects of agrichemical exposure

If you think someone is suffering ill effects from chemical exposure:

- **In an emergency ring triple zero (000) for an ambulance.** If you can, inform the healthcare workers about what chemicals the person may have been exposed to (take the MSDS with you).
- For advice regarding the effects of exposure to chemicals, call the **Poisons Information Centre** 13 11 26 (24 hours, 7 days, Australia wide).

If use of a chemical has caused you ill-effects, try to avoid using it in the future. Select the safest possible chemical to use and follow the MSDS.

Where to get help

- In an emergency, call triple zero (000)
- **Victorian Poisons Information Centre** Tel. 13 11 26 for advice when poisoning or suspected poisoning occurs and poisoning prevention advice
- Your doctor
- Your nearest health service (with an emergency department)
- **National Centre for Farmer Health** Tel. (03) 5551 8533
- **WorkSafe Victoria** Tel. (03) 9641 1555 or 1800 136 089
- **Farmsafe Australia** Tel. (02) 6269 5622
- **drumMUSTER** Tel. (02) 6206 6888
- **ChemClear** Tel. (02) 6206 6868 or 1800 008 182 (booking line)

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National Centre for Farmer Health

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