The Green Book
Best Management Practice Guide

8. Wastes

Best Management Practice (BMP) on horticultural farms strives to minimise the production of wastes and prevent pollution of the environment in the course of storing or disposing of these wastes.

This section of *The Green Book* provides the key objectives of BMP for waste management and presents a list of management actions to help achieve those objectives. At the end of this section is a checklist of BMPs recommended for sustainable management of horticulture farms in the Murrumbidgee Irrigation Area (MIA).


Photo - **drum**MUSTER

The actions for BMP presented in this document are a summary of the key issues for environmentally sustainable horticulture in the MIA. Full details and references can be found in *The Green Book* companion chapter – WASTES.

Contents

BMP objectives

Objective 1 – Minimise the production of waste products from horticultural activities

The most effective way to reduce environmental impacts and the cost of waste management is to avoid creating waste. Minimising waste involves avoiding its production as well as reusing and recycling potential waste products.

Responsible waste management can be demonstrated on farm through the following actions:

- Conduct a waste management audit to identify and record wastes created on farm.
- Identify opportunities to prevent or reduce waste, eg:
  - review purchases to minimise waste from packaging and transport (avoid unnecessary purchases, purchase goods in bulk, choose products in reusable or recyclable packaging).
  - mulch/compost organic wastes and household scraps
  - reduce pesticide use through Integrated Pest Management.
- Identify opportunities to reuse waste, eg:
  - reuse vine posts
  - recondition machinery.
- Identify recyclable products (eg glass, paper, scrap metal, oil, tyres, triple-rinsed pesticide containers, building materials), sort and deposit at recycling facilities.
- Set specific goals to minimise wastes as part of your Whole Farm Plan.
- Review waste management strategy annually.

*Photo - **Wine Grapes Marketing Board***

Objective 2 – Prevent pollution of the environment from the storage or disposal of wastes generated through horticultural activities

Horticultural wastes that pose the greatest risk to the environment include unwanted and deregistered chemicals, pesticide containers and used oils. Inadequate storage and disposal of these wastes can result in pollution of the immediate land area as well as contaminating surface and groundwater resources. These forms of pollution (particularly to groundwater) are very difficult and costly to fix. Responsible waste management can be demonstrated on farm through the following actions:

- Purchase pesticides from an Agsafe accredited premises in returnable/recyclable containers in the smallest amounts necessary for the application (to prevent accumulation of unwanted chemicals).
- Store pesticide wastes (including deregistered and unwanted chemicals and pesticide containers) securely on an impermeable surface away from waterways or flood prone areas.
- Seek advice from the Department of Environment & Climate Change (DECC) on disposal of deregistered chemicals (eg organochlorines). These pesticides are classified as scheduled chemical wastes and cannot be disposed of to landfill or buried on premises.
- Dispose of registered pesticide wastes through ChemClear and their containers at drumMuster collection sites (contact local council for collection dates).
- Collect waste oil and store in a sealed container at a secure location pending disposal at an approved collection point.
- Recondition and reuse other problematic wastes (eg tyres, batteries, electrical goods) or dispose of at approved collection sites - avoid accumulating these wastes on farm.
- Manage hazardous materials (eg asbestos, deregistered pesticides, residual herbicides, heavy metals from fertiliser or lead based paints) at contaminated sites by burial or removal in accordance with DECC regulations to prevent further environmental contamination.
- Maintain on site sewage and wastewater management systems so that surface and groundwater are not contaminated by any flow from treatment systems.

In focus – Chemicals contained

drumMUSTER is a national program for the collection of eligible, clean, empty non-returnable chemical containers. Collections are arranged by local council and funded by chemical users through a levy on eligible non-returnable containers between 1 L and 20 L in size (currently 4 cents per L or kg). The application of the levy through the Industry Waste Reduction Scheme has ACCC authorisation.

Eligible products are indicated by the presence of a **drum**MUSTER logo. All agricultural and veterinary containers from participating manufacturers (with the exception of oil, petroleum and pool chlorine) can now be disposed of under the **drum**MUSTER program.

Containers delivered to **drum**MUSTER must be cleaned to **Agsafe standards** that is: pressure rinsed, triple rinsed or fully cleaned with a mechanical rinsing device until free of chemical residue. All containers should be left to dry with lids removed and metal containers punctured to allow venting. Upon delivery chemical users are required to sign a statement stating all containers have been rinsed to meet the standard

ChemClear® is the national program, funded through the Industry Waste Reduction Scheme, for the collection and disposal of unwanted **registered** agriculture and veterinary chemicals. The program also collects **deregistered** and unknown products for a fee**.** Deregistered chemicals (eg organochlorines) and their containers are classified as scheduled wastes. These products must not be disposed of in landfills or buried on premises. They should be stored on farm pending disposal through the ChemClear® program or an approved chemical waste disposal contractor. More advice on the ChemClear® program can be obtained by calling 1800 008 182.

In focus – Asbestos

Friable asbestos can be crumbled to a powder by hand pressure, eg pipe insulation (lagging), and sprayed-on or tiled sound insulation materials. **Non-friable asbestos** has a binder that holds fibres within a solid matrix and will not allow asbestos fibres to be released easily unless mishandled, damaged or in badly worn or weathered condition, eg asbestos cement products, asbestos fencing and vinyl containing asbestos. The transportation and disposal of friable or degraded asbestos waste pose a higher exposure risk to humans and the environment via dispersion and inhalation of asbestos fibres.

Collection and storage of asbestos fibre and dust waste

- The waste must be covered to prevent the emission of any dust.
- The waste must be collected and stored in impermeable bags, which must:
    - be made of heavy-duty low-density polyethylene at least 0.2 mm thick, at least 1.2 m high and 0.9 m wide
    - be sealed by a wire tie
    - contain no more than 25 kg of waste
    - be marked with 'CAUTION ASBESTOS' in letters that are not less than 40 mm in size.

Any type of asbestos waste must be disposed of only at a landfill site that may lawfully receive the waste. The waste must be disposed of only by burial. Before disposal, arrangements must be made with the occupier of the landfill to ensure that the waste is initially covered to a depth of at least 0.5 m and finally to a depth of at least 1 m below the surface (for stabilised asbestos waste in bonded matrix) or 3 m (for asbestos fibre and dust waste).

Source: NSW EPA (1999)

Further reading www.environment.nsw.gov.au/waste/asbestos/index.htm

In focus – The good oil

More than 500 million litres of lubricating oil is sold each year in Australia. Over half of this oil is collected and recycled after use. However, a large volume of used oil (possibly more than 500 million litres) remains unaccounted for.

Waste oil is contaminated with hazardous materials that are toxic and carcinogenic, and are harmful to the environment and community when irresponsibly discarded. The contaminants include heavy metals such as lead, cadmium and chromium, as well as arsenic and dioxins.

Used lubricating oil may cause contamination of the ground and groundwater, or migrate to watercourses, or have impacts on humans, plants, animals or other organisms. One litre of waste oil can contaminate up to one million litres of water. Protection of the environment involves ensuring no oil comes in contact with the ground.

The following practices are unacceptable means of use or disposal or used oil:

- unauthorised dumping to ground, watercourses, sewers and drainage systems; placement in garbage bins
- burial
- road oiling, dust control, weed abatement, vegetation control, timber preservation, pest control or as a carrier fluid for pesticides or herbicides, except as approved by the relevant government authority
- marking ground surfaces (for example, on playing fields)
- open air burning of used lubricating oil.

For more information about disposal of used lubrication oil or to find a used oil collection facility, visit the Product Stewardship for Oil Programme web site: www.oilrecycling.gov.au

The Department of Environment and Climate Change has a series of fact sheets that provides important information to businesses about managing liquid waste. Visit: www.environment.nsw.gov.au/waste/liquidwastefs.htm

Key legislation and codes of practice

- *Waste Avoidance and Resource Recovery Act 2001* (NSW)
- *Protection of the Environment Operations Act 1997* (NSW)
- *Pesticides Act 1999* (NSW)
- *Product Stewardship (Oil) Act 2000* (Cwlth)
- *Occupational Health and Safety Act 2000* (NSW)
- Occupational Health and Safety Regulation 2001 (NSW): Chapter 6, Part 6.4: Use of hazardous substances
- NSW Waste Avoidance and Resource Recovery Strategy 2007. Department of Environment and Climate Change.
- Safe Use and Storage of Chemicals (including Herbicides and Pesticides) in Agriculture: Code of Practice 2006. WorkCover NSW Publication Number - 0422. www.workcover.nsw.gov.au/Publications/LawAndPolicy/CodesofPractice/
- Waste Classification Guidelines (2008). Department of Environment and Climate Change. www.environment.nsw.gov.au/waste/envguidlns/index.htm
- CropLife Australia Stewardship Program www.croplifeaustralia.com.au

Acts, and amendments and regulations relating to acts, of the NSW Government can be found at www.legislation.nsw.gov.au/ and then easily found using the 'Browse' or 'Search' facilities at the site.

More information

Key contacts

NSW Department of Environment & Climate Change (Griffith) 02 6969 0700
NSW Department of Environment & Climate Change (general)..... 131 555
NSW Workcover (Griffith) 02 6962 8900
Chemcert Australia..... 02 9387 4714
drumMUSTER National Office 02 6230 6712
ChemClear® 02 6230 4799
Griffith City Council..... 02 6962 8100
Leeton Shire Council 02 6953 2611

Industry

Murrumbidgee Horticulture Council..... 02 6964 2420
Wine Grapes Marketing Board..... 02 6962 3944
Australian Prune Industry Association..... 03 5023 5174
Riverina Citrus 02 6964 4333

Web sites

Agsafe ..... www.agsafe.com.au
drumMUSTER..... www.drummuster.com.au
ChemClear ..... www.chemclear.com.au
Product Stewardship for Oil Programme ..... www.oilrecycling.gov.au
Department of Environment, Water, Heritage and the Arts ..... www.environment.gov.au
Department of Environment and Climate Change..... www.environment.nsw.gov.au
Waste Network of WA ..... www.wastenet.com.au
NSW WorkCover ..... www.workcovernsw.gov.au

Best Management Practice checklist for waste management on horticultural farms in the MIA

Use this checklist to assess waste management on your farm. Depending on your answers, this list can form the basis of a plan for improving the sustainability of your farm management practices.

	Best Management Practice	Yes	Partly achieved	To do	N/A
1	A farm waste audit has been conducted and strategies to minimise waste production (eg organic wastes are mulched/composted where practical, building materials reused/recycled) and ensure safe storage and disposal are identified.	☐	☐	☐	☐
2	Purchases are reviewed to minimise wastes associated with packaging and transport, eg unnecessary purchases are avoided, products are purchased in bulk (except pesticides – see below), preference is given to products in reusable or recyclable packaging.	☐	☐	☐	☐
3	Recyclable products are sorted and deposited at collection facilities.	☐	☐	☐	☐
4	Integrated Pest and Disease Management principles are followed to minimise the use of pesticides.	☐	☐	☐	☐
5	Pesticides are purchased in returnable/recyclable containers (ie have drumMUSTER logo) in the smallest amounts necessary for the application (to prevent accumulation of surplus chemicals).	☐	☐	☐	☐
6	Pesticide wastes (including deregistered chemicals and pesticide containers) are stored securely on an impermeable surface away from waterways, or flood prone areas and disposed of through approved collection points (drumMUSTER, ChemClear®).	☐	☐	☐	☐
7	Waste oil is collected and stored in a sealed container at a secure location and then disposed of at an approved collection point.	☐	☐	☐	☐
8	Other problematic wastes (eg tyres, batteries, electrical goods) are not accumulated on farm; they are reconditioned, reused or disposed of at approved collection points.	☐	☐	☐	☐
9	Sites contaminated with hazardous materials (eg asbestos, deregistered pesticides, residual herbicides, heavy metals from fertiliser or lead based paints) are managed by burial or removal in accordance with DECC regulations to prevent further contamination.	☐	☐	☐	☐
10	On site sewage and wastewater management systems are maintained so that surface and groundwater are not contaminated by any flow from treatment systems.	☐	☐	☐	☐