Government of South Australia
Adelaide and Mount Lofty Ranges
Natural Resources Management Board

Accuracy and Effectiveness

RESPONSIBLE CHEMICAL USE

Learning how to manage and handle chemicals safely and responsibly not only ensures your personal protection, but also provides environmental protection for our precious natural resources, like water, soils, native plants and animals, marine and coastal environments.

Accuracy is everything when it comes to time and cost-effective chemical use

This fact sheet is part of a series designed to help you:

- increase your awareness of correct and responsible use of all chemical types
- gain the knowledge required to effectively control weeds, pest insects and diseases without damaging, contaminating or polluting our environment
- adopt best practice to minimise chemical use and maximise personal safety, and
- play a part in improving water quality and environmental health.

Saving Time and Money

When it comes to spraying weeds, pests and plant diseases responsibly, accuracy is everything.

Whether you are calculating the spraying rate or hitting the target pest or plant, accuracy will save you time and money. It will also help minimise the effect of the chemical on the environment.

Firstly, identify the target pest accurately. Then get expert advice on the safest and most appropriate chemical to use and how to get the best results. Read the label carefully and fully before you start and follow the directions for use exactly.

Ensure your spray equipment, including the nozzle, is in good condition. Nozzles are important because they determine the droplet size, one of the keys to safe, effective chemical control.

Think Detail

The key to accurate and cost-effective chemical use is to ensure each square metre of the area to be sprayed, whether a garden or a lifestyle property, receives exactly the right amount of chemical.

With 10,000 square metres in a hectare, any small inaccuracy soon multiplies when large areas are involved. On the other hand, focusing on the detail – the amount sprayed per square metre – enables you to concentrate on the essentials, no matter how large or small the area to be treated.

Every square metre requires exactly the right amount of product, whether you are spraying the front driveway or the front paddock.

Make sure you apply the chemical at the recommended label rates. Getting the rate right pays off.

Under-application means having to spray again – using more chemical and taking longer than if you had used the right amount in the first place.

Over-application – field evidence suggests many users apply as much as 5 times and even up to 10 times more than the amount of chemical recommended on the label. This is a waste of chemical. It also costs more and more chemical ends up in the environment.

The product label explains how much chemical is needed to control the pest (weed, insect or fungus) you are targeting. The challenge is to achieve this outcome.

Is it Worth the Effort?

Using the right amount of chemical not only ensures good control of the target pest, it pays off in reduced cost and time spent doing the job.

Consider the task of spraying Salvation Jane in a one-hectare paddock such as might be found on a typical lifestyle or farm property.

Cost

Assume you need 150 litres (15 millilitres per square metre) of spray mix (water and chemical) to cover the hectare and the label recommends the use of five litres of chemical per hectare (0.5 millilitres per square metre).

Other fact sheets in this series

Alternatives to Chemicals
Bait Station Safety
Best Time to Spray
Calibrating Spray Equipment
Personal Safety
Understanding Product Labels #1
Understanding Product Labels #2
Using Glyphosate
Weeds Near Water

The "directions for use" section of the label will indicate how much chemical to add to a standard 15 litre knapsack sprayer each time it is filled to achieve the desired application rate. With a chemical costing $6 (example only) a litre, the cost of chemical to spray the paddock at the label rate would be $30 per hectare.

If you use five times the recommended rate, the chemical cost would be $150 per hectare. This figure will double to $300 per hectare if you use 10 times the label rate, as some users are known to do.

In addition, use of such excessively high rates increases the chance of damaging non-target species, including valuable pasture.

Time

It takes approximately 20 minutes (three tanks an hour) to fill a 15 litre knapsack and spray its contents onto a pasture paddock.

So applying 150 litres of spray mix using a knapsack sprayer is a four-hour job, allowing for an occasional break on top of the actual fill and spray time of 3.33 hours.

Someone applying five times the label rate, using the concentration recommended on the label, will take 20 hours to do the same job, and that doubles again to 40 hours – five standard working days – for someone applying 10 times the recommended rate.

Calibrating Your Spray Equipment

The only way to be sure you are applying the right amount of chemical is to calibrate the spray equipment you are using.

For more information on how to calibrate your spray equipment, please refer to another fact sheet in this series: Calibrating Spray Equipment.

Calibrating your spray equipment is essential to accuracy and effectiveness in chemical use

Contacts

Adelaide and Mount Lofty Ranges Natural Resources Management Board

Gawler
Telephone 8523 7700

Lobethal
Telephone 8389 6166

Willunga
Telephone 8550 3400

Eastwood
Telephone 8273 9100
reception@adelaide.nrm.sa.gov.au
www.amlrnrm.sa.gov.au

When using chemicals more is not better!

If you are uncertain about any aspect of chemical use, please seek professional advice from the place of purchase or the manufacturer before proceeding.