

SPRAYERS AND SPRAYING

TORO Count on it.

Continue to learn

Bill Taylor, Application Technology specialist for Hardi Limited provides some pointers on keeping up to date with spraying regulations

Do the following terms mean anything to you: LERAP; Groundwater Directive; or Voluntary Initiative? They should. Because they are just some of a whole raft of new regulations that have come into force in recent years governing sprayers and spraying. Mainly they have been driven by the need to reduce water contamination.



All sprayer operators are required to wear protective clothing, including lightweight overalls, rubber or Nitrile gloves.

Most sprayer operators are required to hold Certificates of Competence.

The bulk of these regulations have been drawn-up and targeted at agriculture. They do however cover spraying in general, so in most cases amenity sprayers are not exempt and the rules need to be adhered to if course managers and greenkeepers are to avoid falling foul of the law.

Amenity spraying differs considerably from agricultural spraying and latest figures for 2000 show that the industry spends around £13 million on pesticides, which is a mere four per cent of that used on arable land. However, amenity spraying is still subject to the same scrutiny, if not more so in view of the fact that the bulk of spraying work is conducted in the public eye, and is potentially more risky to subsequent drinking water quality than where applied to agricultural land.

For example, until a few years ago atrazine and simazine were extensively used because of their long-term effectiveness as weedkillers. However it was found that when used on hard surfaces such as pavements, or on materials such as railway ballast, they would move through drains or the soil into watercourses. Water authorities would then have to remove the chemicals before the water could be used for public consumption.

VOLUNTARY INITIATIVE

One of the latest and most important schemes to come into force is the Voluntary Initiative, and it is something that all managers need to be aware of.

In recent years, environmental and political groups have pushed for a considerable reduction in pesticide usage, achieved by the implementation of a pesticide tax, which would cost the amenity sector dear. The Voluntary Initiative is a half-way house agreed with the Government which provides all those involved in spraying the opportunity to put their own house in order and minimise the environmental impact of pesticides.

Introduced initially for a five-year period, the scheme as its name suggests is entirely voluntary and consists of seven key areas covering:

- The maintenance, checking and testing of sprayers
 - The review of handling and filling sites, and practices when filling
 - The training and continuing professional development of operators
 - That essential best practice is followed
 - That there is full compliance with LERAPS
 - That conservation areas are identified, protected and enhanced
 - That there is a complete pesticide management plan
- Information sheets on over 1000 products will be created by April 2006 as part of this.

SPRAYER TESTING

One of the main elements in helping show that pesticides are being applied correctly is being able to show that sprayers are accurate, safe and maintained correctly. Which obviously has management benefits as well.

The Sprayer Test introduced by the Agricultural Engineers Association (AEA) is again voluntary, but in the three years it has been operational has shown just how many badly-maintained sprayers there are and how much money is wasted as a result. The test covers all sprayer aspects – checking for worn or leaking hoses through to inaccurate pressure gauges and worn jets, which alone account for 36 per cent of failures and typically lead to over-application.

OPERATOR SAFETY AND TRAINING

Under the Control of Pesticides Regulations, 1997, Schedule 3, there is a requirement that anybody born after 31 December 1964 who uses pesticides should possess the appropriate Certificates of Competence issued by the National Proficiency Test Council (NPTC). In addition, anybody applying pesticides on land that is not their own or that they occupy, or their employer's, such as a contractor, should also have a Certificate.

In the first instance, all those who are eligible require a PA1 certificate, which covers aspects such as safe handling of chemicals, safe storage, appropriate clothing and legislation, etc.

Having gained this, a second certificate dependent upon the type of sprayer being used is then required, which covers calibration and safe use of the sprayer. For greenkeepers this will either be a PA2, which covers tractor-mounted and pedestrian sprayers, or a PA6 for those using hand-held applicators, including knapsacks, compression sprayers and granular applicators.

Any sprayer operator is also required to wear appropriate safety clothing. This should include lightweight Tyvek disposable overalls, a face shield or goggles and ideally rubber footwear. In addition an operator should also use an apron when mixing chemical, because if any is spilled on the apron it can be quickly washed off, whereas if chemical is spilled on overalls they will have to be disposed of immediately. In addition rubber or Nitrile gloves must also be worn, not rigger-type gloves which are sometimes sold for chemical handling, as these contain absorbent cloth.

THE GREEN CODE AND LERAP

To protect aquatic life from pesticide contamination by keeping harmful pesticide sprays out of watercourses, under the Green Code certain pesticides can only be used near watercourses if a Buffer Zone of generally five metres is left unsprayed. This information, clearly marked on the product label, applies to both tractor and hand-held sprayers.

LERAPS or, to give it its proper name, Local Environmental Risk Assessment for Pesticides Scheme, came into effect in 1999 as a supplement to the Green Code.

For certain pesticides, this allows for the statutory Buffer Zone to be reduced so long as the spraying equipment used has been proven to reduce spray drift and given a 1, 2 or 3 Star rating.

This determines by how much the Buffer Zone can be reduced, with 3 Star being the highest which allows the Buffer Zone to be reduced to one metre.

Generally this applies to specific nozzles. The exception is the Hardi Defender shrouded boom, the only spray boom to have a 3 Star rating.

Under LERAP, any pesticide requiring a Buffer Zone will be divided into one of two categories that are clearly stated on the product label. Category A pesticides are those that contain organophosphates or synthetic pyrethroid insecticides for which no reduction is allowed. Category B are those that don't. Therefore they can be applied closer to watercourses so long as a LERAP is conducted.

It must be noted that, where a product carrying a Buffer Zone is used near a watercourse, it is a legal obligation to conduct a LERAP, even if it is a Category A product and no reduction is allowed. The LERAP has to be done before the area is sprayed and follows a set procedure taking into account information such as the site, flora and reason for treatment, plus the product used, sprayer, weather conditions and time of application. From this the Buffer Zone can be calculated.

SHROUDED BOOMS

The introduction of shrouded booms for amenity sprayers, such as the Hardi Defender, have LERAP benefits and provide numerous other management advantages too.

One of the biggest benefits for users from totally enclosing the spray boom in a protective shroud is the ability to spray in conditions that normally would not allow the use of an open boom. The ability to better plan spraying operations for first thing in the morning without being dependent upon still conditions ensures improved timeliness.

Also, because spray drift is virtually eliminated, spray rates can be reduced. In addition, containing spray in a protective shroud gives considerable Health and Safety benefits to the operator and also any bystanders or neighbouring properties.

GROUNDWATER REGULATIONS

Enforced by the Environment Agency, the Groundwater Regulations are designed to provide enhanced protection for groundwater. Basically they make it an offence to dispose of certain substances, including sprayer washings, in a way that may result in groundwater pollution, or to knowingly permit this to happen.

This means essentially that no longer can spray operators just flush spray washings down the drain or onto waste ground.

Under these regulations, unless a specific wash system is fitted to the sprayer, when rinsing out the sprayer the operator must fully-fill the tank with water and then dispose of these washings in a responsible manner – either into purpose-

All new sprayers are required to have a chemical induction hopper. Sprayers above 15-litres capacity must also have a clean water tank.



Shrouded boom sprayers allow spraying to be carried out in a controlled manner.

built holding tanks or sprayed back out over the area already sprayed.

To fully-fill the tank and respray an area such as a fairway is obviously time-consuming and inconvenient. However, using a purpose-built washing system, such as the tank flushing nozzle that Hardi fits to larger amenity sprayers, it is possible to use only 10 per cent of the tank capacity for flushing, so saving time, water and need of an area for spraying-out.

SPRAYER SAFETY

In addition to the introduction of environmental and operator safety regulations, tighter rules have also come into operation covering sprayers themselves.

Purchasers should be aware that any new sprayer sold in the UK now has to meet the requirements of BS EN907, which lays down what safety features should be fitted to new sprayers as standard and not as optional extras.

Among these is a requirement that all new sprayers must be fitted with a chemical induction hopper that avoids the need for the operator to have to stretch over the sprayer tank to pour chemical into the filling hole. Where this is not possible, for instance on smaller sprayers, the height from ground to filling hole should be no more than 150cm and horizontal reach no more than 30cm.

The standard also requires that any sprayer with a tank capacity of more than 15 litres must also be fitted with a clean water tank of at least 15 litres capacity.

Additionally, tests are currently being conducted with a view to introducing an international standard to improve knapsack-sprayer safety. This standard will cover aspects such as sprayer stability when filling; leakage both when upright or when the sprayer is on its side; avoiding spillage when filling; and reduction of internal residues and external surface deposits.

Clearly an article like this can only cover the various regulations in broad-brush terms. Course managers and greenkeepers wanting more details can contact the following organisations:

The Voluntary Initiative: www.voluntaryinitiative.org.uk

Sprayer Testing: www.aea.uk.com

National Proficiency Tests Council: www.nptc.org.uk

LERAP: www.defra.gov.uk

Groundwater Regulations: www.defra.gov.uk

To protect aquatic life, the Green Code states that a Buffer Zone of five metres must be left alongside watercourses. Under LERAP this can be reduced to 1m so long as a 3 Star approved sprayer such as the Hardi Defender is used.

