

LOCAL ENVIRONMENT RISK ASSESSMENT FOR PESTICIDES  
(LERAP)

# HORIZONTAL BOOM SPRAYERS

A STEP-BY-STEP GUIDE TO REDUCING AQUATIC  
BUFFER ZONES IN THE ARABLE SECTOR

NEW GUIDANCE 2001

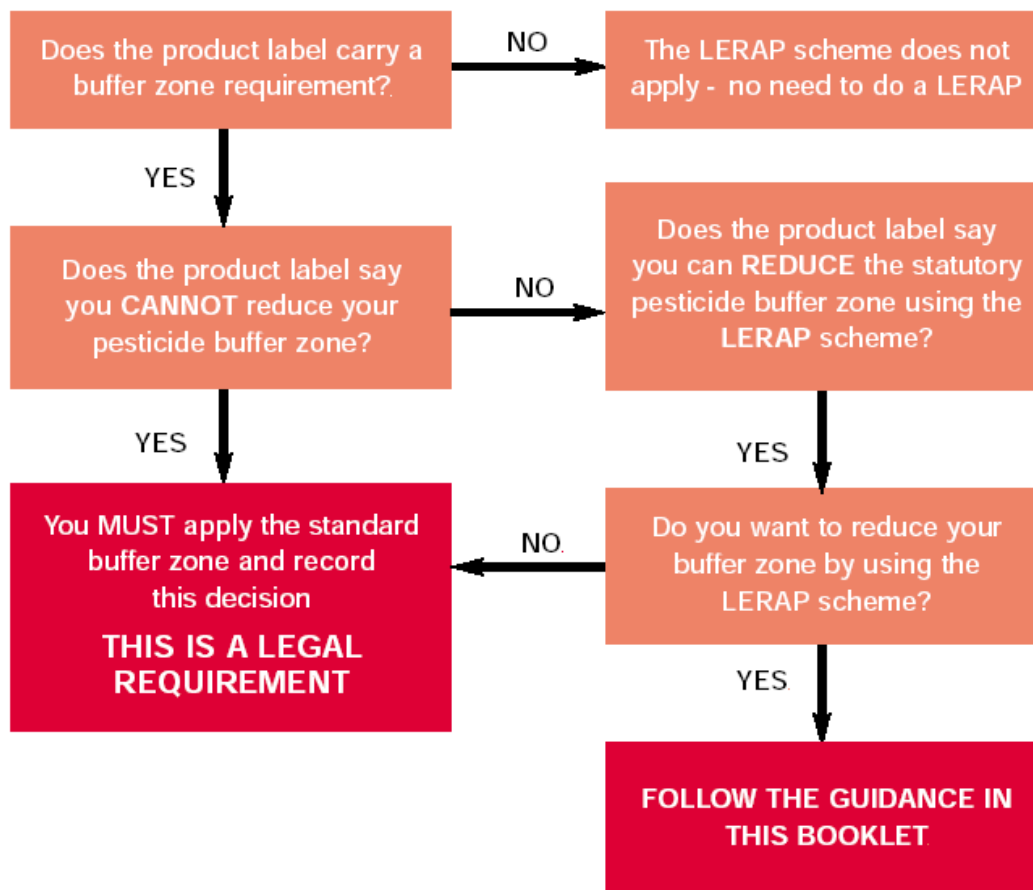
**DEFRA**  
Department for  
**Environment,**  
Food & Rural Affairs



## ***LERAP – The short version***

- You only need to do a LERAP if you are spraying near a watercourse and you want to reduce the buffer zone shown on the product label.
- If the watercourse is dry at the time of spraying, just apply a 1-metre buffer zone.
- If using a 3-star sprayer, just apply a 1-metre buffer zone.
- If using no more than  $\frac{1}{4}$  of the maximum permitted dose rate, just apply a 1 metre buffer zone.
- Consider using a pesticide with no buffer zone requirement, or designating the strip alongside the watercourse as set-aside.

*Follow the flow chart below to see if you can reduce the buffer zone of the product you want to use:*



# Introduction

This booklet applies to horizontal boom sprayers only. Different rules apply to broadcast air-assisted sprayers. The buffer zone for products applied by hand-held and knapsack sprayers is 1 metre from the top of the bank as long as the nozzle points down and is no more than 0.5 metres above the crop.

The booklet assumes that all necessary planning for the crop, the spray operation and product selection has been done in advance and that requirements of the Green Code are followed throughout. The LERAP scheme applies only to reducing the 5-metre buffer zones laid down to protect water. You cannot reduce buffer zones designed to safeguard hedges, field margins etc under the LERAP scheme.

## WHAT IS A LERAP AND WHY IS IT IMPORTANT?

- A LERAP HELPS PROTECT AQUATIC LIFE FROM PESTICIDE CONTAMINATION BY KEEPING PESTICIDE SPRAYS OUT OF WATER
- A LERAP ALLOWS YOU TO REDUCE PESTICIDE BUFFER ZONES ACCORDING TO YOUR LOCAL CIRCUMSTANCES
- THE CONTINUING APPROVAL OF SOME PRODUCTS MAY DEPEND ON YOU FULLY COMPLYING WITH THE LERAP SCHEME

## CAN YOU APPLY A LERAP TO YOUR CHOSEN PESTICIDE PRODUCT?

- YES if the pesticide carries a buffer zone requirement AND the product's label clearly states that the product qualifies for inclusion in the LERAP scheme (i.e. classified by PSD as a 'category B' product). In this case you can choose between applying the full buffer zone on the label OR reducing it by following the LERAP process below.

- NO if the "Precautions" section of the label says "DO NOT ALLOW DIRECT SPRAY..." to fall within certain distances of surface waters or ditches, AND that the product is "NOT ELIGIBLE FOR BUFFER ZONE REDUCTION UNDER THE LERAP SCHEME." (i.e. classified by PSD as a 'category A' product)

**NB:** If you are using a pesticide that does not carry a buffer zone restriction, there are no LERAP requirements.

You can find details of the products that fall into categories A or B on the PSD Website (see back cover for details). Your agronomist or chemicals supplier should also be able to tell you whether a product is category 'A' or 'B'. The product label will indicate this by the phrases quoted under the 'No' and 'Yes' paragraphs above.

## SITES OF SPECIAL SCIENTIFIC INTEREST (SSSI)

Before using a pesticide within an SSSI, you must consult the appropriate conservation agency. In view of the sensitivity of such sites, you should also consider the potential impact of applying a pesticide next to an SSSI. If you are not sure about the adequacy of the LERAP or no spray zone to protect the site, you should ask the appropriate conservation agency (contact details are on the back cover).

# How to carry out a LERAP

If you choose to use a LERAP qualifying product, the following 4 steps will guide you in carrying out a full LERAP and show you if and by how much you can reduce the statutory pesticide buffer zone.

## Step 1

### *You will need to gather some information:*

#### **Will you be spraying near a watercourse?**

The size of the buffer zone reduction may depend on the width of the watercourse so you will need to measure this. Measure it at its narrowest point next to the spray area; you only need to find out if the narrowest point is less than 3 metres, between 3 and 6 metres, or wider than 6 metres at the time of spraying. You must record this measurement as part of the LERAP record. If it helps you, you can mark it on your field or farm map but this is not compulsory. You do not need to measure watercourses every time you spray if the width of the water has not increased or decreased. Figure 1 on page 6 explains in a diagram the buffer zone, watercourse widths and measurements.

#### **What dose of pesticide will you use?**

The need for a buffer zone is assessed using the maximum permitted dose for a single application to any crop. If you intend to use less than the maximum dose then you may be able to reduce the buffer zone. If unsure, seek advice on the most appropriate dose to control the target weed, pest or disease.

Calculate the dose you intend to use as a percentage of the maximum dose shown on the label for any crop. For the purposes of a LERAP: 0-25% is considered to be  $\frac{1}{4}$  rate; 25.1-50% is considered to be  $\frac{1}{2}$  rate; 50.1-75% is considered to be  $\frac{3}{4}$  rate and 75.1-100% is considered to be full rate.

Using a  $\frac{1}{4}$  rate of any category B product allows you to apply the minimum buffer zone of 1m for all types of equipment and all watercourses.

If you use a reduced dose rate to reduce the buffer zone you cannot repeat an application of that product within 48hrs on that same area.

#### **Will you use a 'LERAP-Low Drift' sprayer?**

Manufacturers of ground crop sprayers can apply to have their equipment granted an official star rating for 'LERAP-Low Drift' status. Equipment that offers the greatest reduction in spray drift gets a 3-star rating. You must use the equipment according to the conditions applied to the official grading, which are usually a standard forward speed and boom height with certain pressure limits (refer to the operating instructions supplied with individual types of equipment).

Using 3-star equipment always allows you to apply the minimum buffer zone of 1 metre for all Category 'B' products alongside all watercourses regardless of their width.

Don't forget to record the LERAP-Low Drift star rating as part of your LERAP record. A list of spray equipment that has achieved a star rating is on the Pesticides Safety Directorate's web page (web address is on the back cover). It may be sufficient just to change the nozzles, but always check with your adviser.

## Step 2

### *Work out the width of the buffer zone for your intended spraying operation*

Using the information from Step 1, you can now work out what unsprayed buffer zone reduction may be allowed. If you intend to use a LERAP Low-Drift 3-Star-rated sprayer, apply a 1-metre buffer zone for all dose rates regardless of the width of watercourse or pond. In this case you don't need to refer to the tables. If a ditch is dry at the time of application simply apply a 1-metre unsprayed buffer zone .

#### **In other cases:**

1. Identify the appropriate table. This will depend on the star rating of the equipment you intend to use.
2. From the first downward column of the table, identify the size of the watercourse.
3. Reading across the top row of the table, identify which column applies to the dose rate you intend to use.
4. The box at which the row and the column crosses, gives the width of the buffer zone in metres.

If you are applying more than one product in a tank mix the product with the widest buffer zone requirement will determine the buffer zone for the tank mix as a whole. You do not have to add the buffer zones of the individual products together.

**Table 1 Standard Reference Sprayer**

Dose Rate \ Size of watercourse	Full Rate (75.1-100%)	$\frac{3}{4}$ Rate (50.1-75%)	$\frac{1}{2}$ Rate (25.1-50%)	$\frac{1}{4}$ Rate (0-25%)
less than 3 metres	5m	4m	2m	1m
3-6 metres	3m	2m	1m	1m
6 metres or wider	2m	1m	1m	1m
dry ditch	1m	1m	1m	1m

**Table 2 LERAP Low-Drift 1-star Sprayer**

Dose Rate \ Size of watercourse	Full Rate (75.1-100%)	$\frac{3}{4}$ Rate (50.1-75%)	$\frac{1}{2}$ Rate (25.1-50%)	$\frac{1}{4}$ Rate (0-25%)
less than 3 metres	4m	2m	1m	1m
3-6 metres	2m	1m	1m	1m
6 metres or wider	1m	1m	1m	1m
dry ditch	1m	1m	1m	1m

**Table 3 LERAP Low-Drift 2-star Sprayer**

Dose Rate \ Size of watercourse	Full Rate (75.1-100%)	$\frac{3}{4}$ Rate (50.1-75%)	$\frac{1}{2}$ Rate (25.1-50%)	$\frac{1}{4}$ Rate (0-25%)
less than 3 metres	2m	2m	1m	1m
3-6 metres	1m	1m	1m	1m
6 metres or wider	1m	1m	1m	1m
dry ditch	1m	1m	1m	1m

## Step 3

### *Record your LERAP decision*

The LERAP scheme legally requires you to record each LERAP you conduct. Even if you decide merely to apply the standard 5-metre buffer zone, you **must** still record this decision.

Your LERAP record must include the following information as a minimum:

- date of assessment
- type of sprayer used (in particular any LERAP-Low Drift star rating)
- the pesticide product you applied
- the dose at which it was applied
- the result of the LERAP decision (i.e. the width of unsprayed buffer zone set )
- the name of the person who carried out the LERAP
- width of the watercourse

You will already be recording much of this information as part of your standard operating procedures for applying pesticides anyway, as recommended in Part 4 of the Green Code. An example record layout is shown at figure 1, which you could photocopy and use if you wish.

You **must** keep all records of LERAPs conducted on your land for 3 years from the date of the spray operation for inspection because it is a legal requirement to do so (see Part 4 of the Green Code 'Record Keeping' for further details).

**However you decide to apply the pesticide, you are legally required to RECORD YOUR DECISION.**

## Step 4

### *Carry out the spray operation*

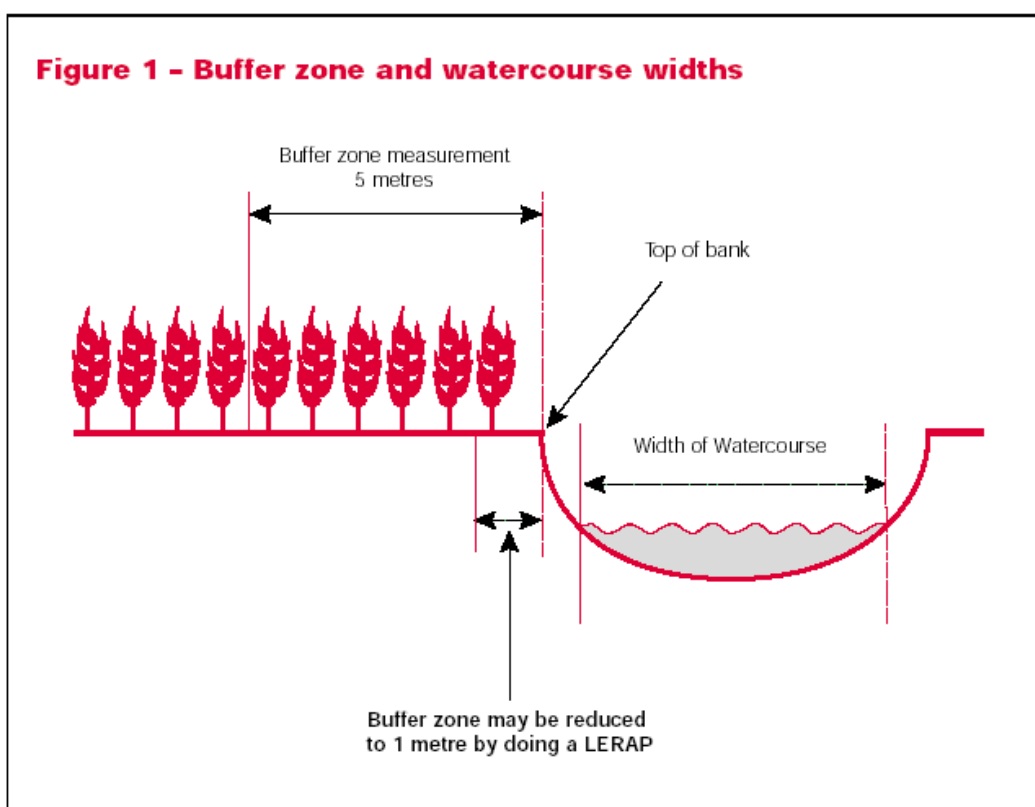
Check that the spray operation is carried out according to the results of your LERAP and that the spray operator knows the width of the unsprayed buffer zone to be used.

If you use LERAP Low-Drift spraying equipment to reduce the width of a buffer zone, the same equipment must be used to spray the 12 metres nearest to the watercourse measured from the top of the bank.

# Record Keeping

Extra paperwork can be a burden, but this can be reduced as follows:

- If the watercourse is a dry ditch, you may use and record an unsprayed buffer zone width of 1 metre for all pesticides covered by the LERAP scheme regardless of the rating of the sprayer.
- If using LERAP-Low Drift 3-star equipment for category 'B' products only, use and record an unsprayed buffer zone width of 1 metre regardless of the width of the watercourse.
- If applying a product at 1/4 of the maximum dose rate for category 'B' products only, record a buffer zone width of 1 metre regardless of the width of the watercourse.
- If applying the same pesticide, at the same dose rate, using the same equipment on subsequent sprays in the same area, there is no need to recalculate the LERAP unless the width of the watercourse changes but you must still record the spray operation and the LERAP decision.
- If you want to stick to the standard 5-metre unsprayed buffer zone rather than using a LERAP to reduce it, just make a single entry of this LERAP decision in the spray records for that area.



If you applied the standard 5-metre pesticide buffer zone complete **Section A only**.

**Section A**

Date	<input type="text"/>
Field name or number	<input type="text"/>
Crop to be treated	<input type="text"/>
Reason	<input type="text"/>
Product used	<input type="text"/>
Weather conditions	<input type="text"/>
Standard 5-metre buffer Y/N?	<input type="checkbox"/>

If you used a LERAP to reduce your pesticide buffer zone please complete Section B as well.

**Section B**

Dose	Full <input type="checkbox"/>	$\frac{3}{4}$ <input type="checkbox"/>	$\frac{1}{2}$ <input type="checkbox"/>	$\frac{1}{4}$ <input type="checkbox"/>
Sprayer	Standard <input type="checkbox"/>	1-star <input type="checkbox"/>	2-star <input type="checkbox"/>	3-star <input type="checkbox"/>
Watercourse width	Dry ditch <input type="checkbox"/>	$\leq 3m$ <input type="checkbox"/>	3-6 m <input type="checkbox"/>	$\geq 6m$ <input type="checkbox"/>
Width of buffer zone after LERAP	1m <input type="checkbox"/>	2m <input type="checkbox"/>	3m <input type="checkbox"/>	4m <input type="checkbox"/>
Date of LERAP	<input type="text"/>			
Name of person who carried out LERAP	<input type="text"/>			

# Further Information & Contacts

## Further Information

<b>Title</b>	<b>Reference</b>	<b>Available From</b>	<b>Cost</b>
Code of Practice for the Safe Use of Pesticides on Farms and Holdings (The Green Code)	PB 3528	DEFRA Publications ADMAL 6000 London SW1A 2XX Tel: 0645 556 000	Free
Pesticides and Integrated Farming	PB 2489	as above	Free
The Pesticides Monitor		The Stationery Office PO Box 29 Norwich NR3 1GN  Tel orders: 0870 600 5522 Fax orders: 0870 600 5533	Annual Subscription £85.00  Single Issue £7.95

## Contacts

### Sites of Special Scientific Interest (SSSIs)

#### The local offices of:

for England:	English Nature
for Scotland:	Scottish Natural Heritage
for Wales:	Countryside Council for Wales
for ASSIs in Northern Ireland:	The Environment and Heritage Service of the Department of the Environment

### Lists of Category 'A' and 'B' Products

The Pesticides Safety Directorate's LERAP internet page at: <http://www.pesticides.gov.uk>

Updates are also available monthly from the Pesticides Monitor(see above).

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