



Best Practice Advice for Autumn

2016

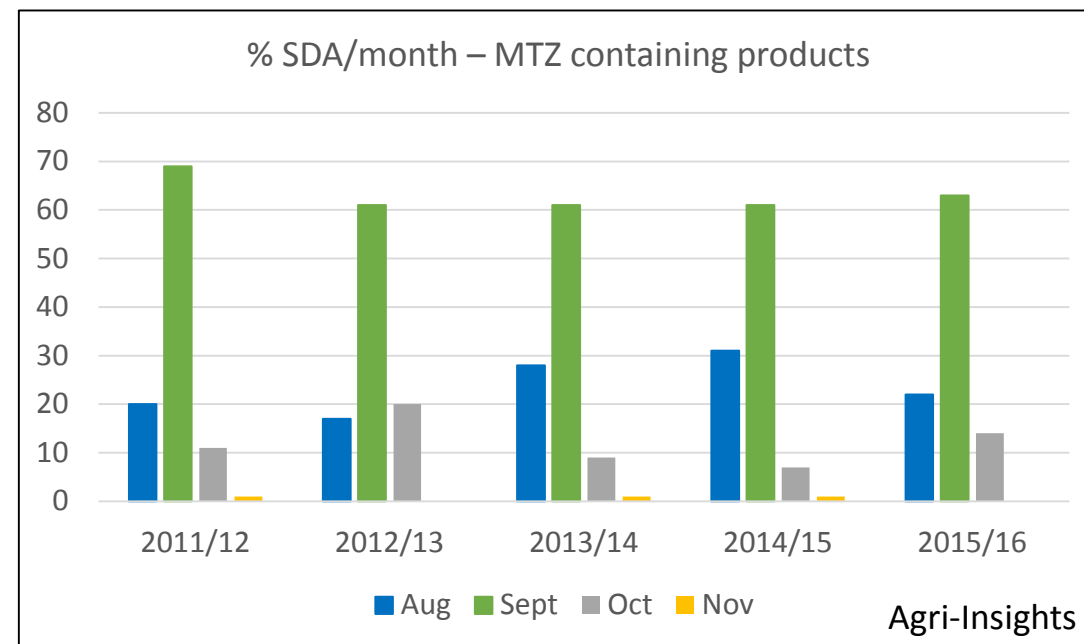
Winter Oilseed Rape

METAZACHLOR
MATTERS



WOSR – The Agronomic challenge

- WOSR remains a profitable break crop but input investment under scrutiny
- Growers limiting investment until crop is established
 - Problems with slugs
 - CSFB, loss of neonic treatments
- Move to early post emergence applications
- Potential risk to Surface Water is increased
 - Chemistry phys/chem properties
 - Environmental and field conditions, combined with calendar date



Be aware of the increased risk to water with slightly later use

Oilseed Rape Herbicides

- Metazachlor and Quinmerac - remain essential components of **EARLY** season herbicide programmes
- Background to chemistry and phys/chem properties

Active Ingredient	Metazachlor	Quinmerac
Solubility in water	446 mg/L	223 mg/L
Mobility in soil (K_{oc})	Moderately mobile (114)	Highly mobile (35)
Persistence in soil (DT_{50})	Low persistence (7 days)	Low persistence (10 days)

- Apply the products early and onto well structured seedbeds, they do their job and breakdown, minimising risk of movement to water later in the season



Why action is needed?



- Water Framework Directive
- Water Industry – ability and cost of treatment – Article 7 WFD
- DEFRA looking to mitigate infraction risk under WFD, concern around OSR Herbicides
- DEFRA Consultation delayed again, earliest autumn 2016. Outcomes earliest Autumn 2017
- CPA are launching ‘Oilseed Rape Stewardship’ initiative this July (2016/17 planning, 2017/18 implementation)



How can MTZ get into Water?

1. Farmyard sources

- Handling on farm (filling, cleaning, remnant management)
- Before / after spraying



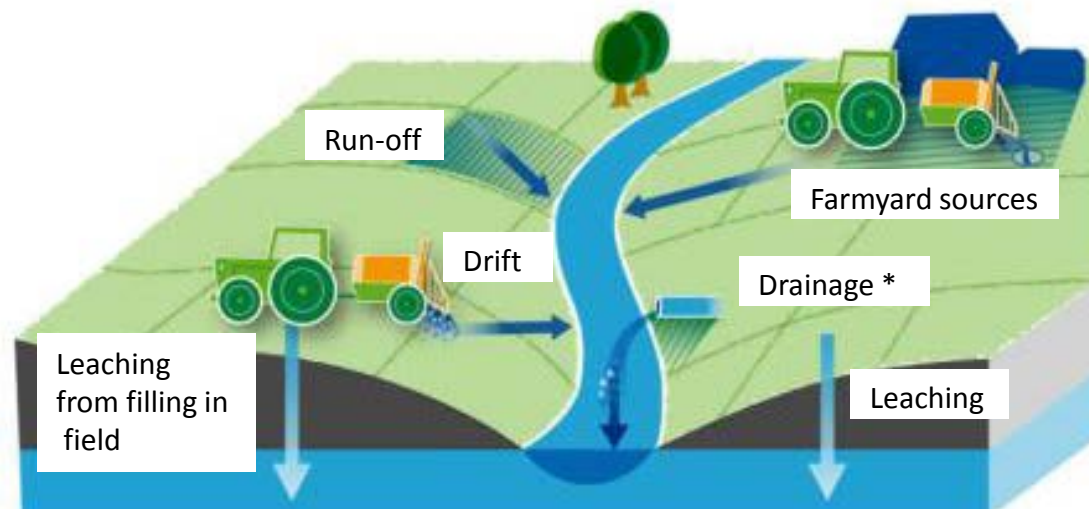
Can be avoided

2. Field sources

- Spray drift
- Field drainage
- Surface run-off
- Leaching

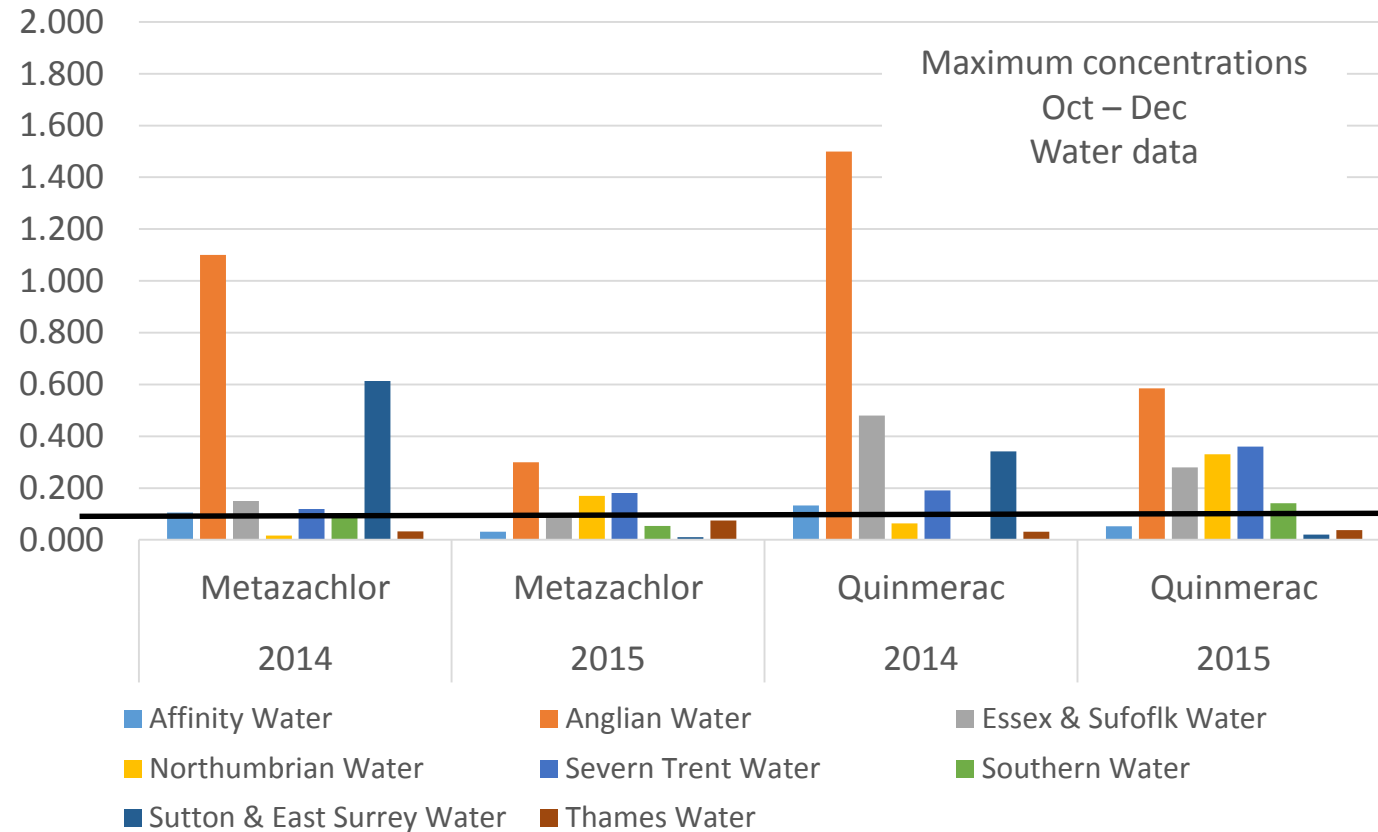


Can be minimised



How Successful have we been?

- Metazachlor Matters, running for 2 seasons
- 750g MTZ AI/ha
- Calendar date based on risk
- Trend is in the right direction but only needs one 'spike' to cause a problem
- Quinmerac now in focus



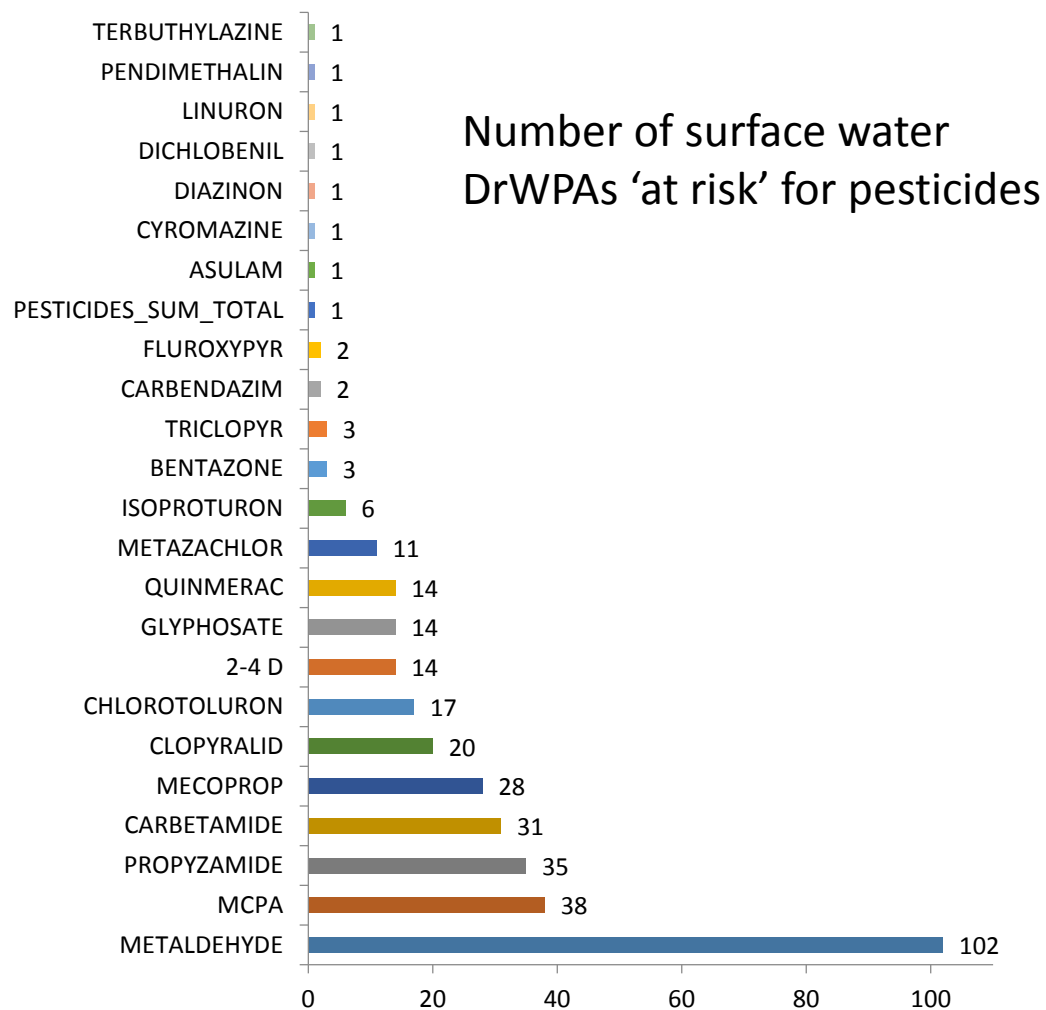
No change to Metazachlor Matters stewardship guidelines, summary



- Dose – 750 g ai/ha
- No drains – no timing restrictions
- Drained fields, including temporary – aim for 1st Oct, cut off 15th Oct
 - Applications after the 1st Oct can be made as long as soil, seedbed conditions are good and drains are not flowing
- Drained fields in Drinking Water Safeguard Zones cut off 1st Oct



WFD / DrWPAs and Safeguard Zones



- Drinking Water Protected Areas (DrWPAs) are WFD water bodies with abstraction of >10m³ /day or serving > 50 people
- Article 7.3 WFD: Member states are required to implement measures in DrWPAs with the aim of preventing further deterioration of raw water quality.
- There are 486 surface water DrWPAs in England, 42% (202 of 486) of which are currently 'at risk' – extra treatment has already been required or there is real risk it will be needed.
- The biggest issue is pesticides which cause risk in 25% (no=122) of DrWPAs.



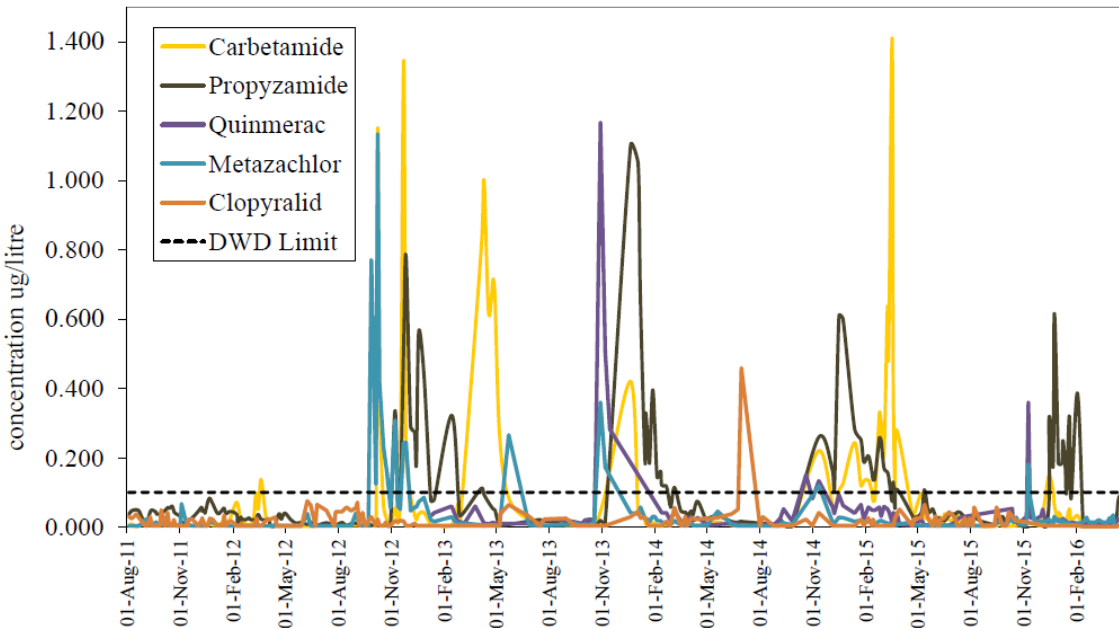
MTZ and QMC – Scale of the problem?



MTZ and QMC are found in raw surface water sources, levels vary across the country, e.g.

Numbers of Surface Water Safeguard Zones for metaldehyde and OSR herbicides

OSR Herbicides in the River Leam at Willes Meadow



	Category	No. SW SGZs in England	Total land area covered by these SW SGZs (km2) ¹
1	SW Safeguard Zones in England	125	37,454
2	SW Safeguard Zones with metaldehyde risk	80	31,682
3	SW Safeguard Zones with carbetamide risk	25	16,406
4	SW Safeguard Zones with propyzamide risk	31	17,895
5	SW Safeguard Zones with quinmerac risk	9	7,194
6	SW Safeguard Zones with metazachlor risk	7	8,044
7	Total with carbetamide, propyzamide, quinmerac and metazachlor risk (less than sum of rows 3-6 as there are several SGZs where more than one of these herbicides cause risk)	41	24,760

¹ = Where two SGZs overlap the area covered is only counted once

A Safeguard Zone may cover more than one abstraction so numbers of Safeguard Zones will not match numbers of 'at risk' DrWPAs.



Which SW Safeguard Zones are currently impacted or considered to be 'at risk' from MTZ & QMC?

Metazachlor (n = 7)

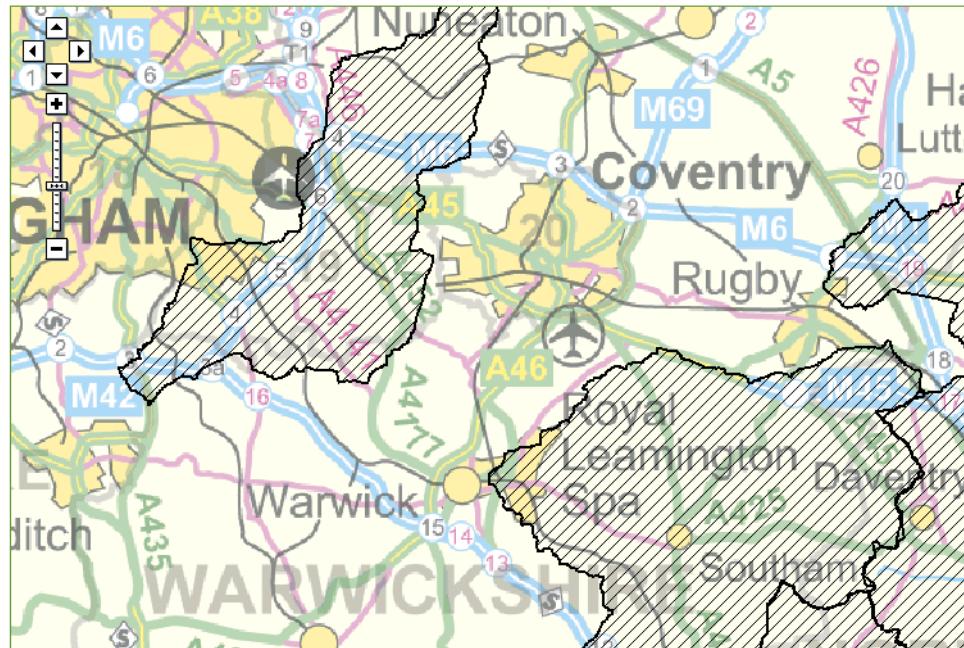


Quinmerac (n = 9)



Am I in a Safeguard Zone?

Environment Agency – what’s in your backyard?



Surface Water Safeguard Zones (Grid reference: X: 443,310.38; Y: 265,406)

Although there may be a risk of needing increased purification treatment there is no risk to our tap water. Tap water supplied by water companies in England is robustly regulated by the Drinking Water Inspectorate to ensure that it meets the required drinking water quality standards.

Page 1 of 1 (1 result for selected location)

Safeguard Zone ID	Details	Contact Details	Other information	
SWSGZ2200	This surface water Safeguard Zone is for Pesticides (metaldehyde, clopyralid, carbetamide, pendamethalin, metazachlor, bentazone, mecoprop, MCPA, propyzamide, captan, propachlor, quinmerac)	Please call 03708 506 506 and ask to speak to the Surface Water Drinking contact for Staffordshire Warwickshire and West Midlands Area	For advice on pesticides go to the Voluntary Initiative's website	View map



Summary



- There is a trend from pre-em to early post emergence application due to agronomic challenges and when investment in weed control is justifiable – potential to increase risk of movement to water
 - Get the agronomy right, stewardship will follow
 - Apply MTZ and QMC early - aim to have applied before the 1st Oct on drained land
- **Think Water. Think Agronomically**





Updated July 2016



Metazachlor and Quinmerac



Introduction

Metazachlor and quinmerac have been detected in drinking water sources, and unless extra care is taken to reduce the risks to water there is a serious risk that their use may be restricted.

Metazachlor is moderately mobile and quinmerac highly mobile so field losses from run-off and drain flow matter as does good practice during application and when filling and cleaning the sprayer.

Field drainage

Many autumn and winter applied pesticides are lost from the field when drains are running so drained land is much more likely to pose a greater risk to water than undrained land. To reduce this risk on drained land including mole-drained, avoid use of metazachlor or quinmerac after 30th September and do not use after 15th October.

In high risk areas, i.e. drained fields in Safeguard Zones (see advice on right), do not use metazachlor or quinmerac after 30th September.

Follow VI best practice to protect water

- Fill sprayer in a bunded area and clear up any spills immediately
- Ensure there is a 6m grass buffer strip next to water courses
- Wash sprayer down in the field or in a bunded area
- Do not apply when soils are cracked, dry or saturated, or if drains are flowing.
- Do not apply if heavy rainfall is expected within 48 hours of application as this can lead to significantly higher losses to water.

Maximum dose: 750g metazachlor/ha*, 250g quinmerac/ha

- Lower dose rates reduce the risk of movement to water and can give equivalent control especially when applied in combination with other herbicides. Check required dose with your BASIS-registered adviser.

High Risk Areas

Drained fields including mole-drained in Surface Water Drinking Water Safeguard Zones# for metazachlor and/or quinmerac

Do NOT apply metazachlor or quinmerac after 30th September.

Reducing the risk (applications before 1st October)

Ensure at least 6 of the following criteria are met as the risk to water will be significantly reduced:-

- | | ✓ or X |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| 1. Soils are moist and NOT dry, cracked or saturated. | <input type="checkbox"/> |
| 2. Field drains are NOT flowing and are unlikely to flow within 7 days of application. | <input type="checkbox"/> |
| 3. Field slope is less than 5% (a 5% gradient is 1 metre fall in 20 metres). | <input type="checkbox"/> |
| 4. The field is NOT bordered by a watercourse. | <input type="checkbox"/> |
| 5. Metazachlor* is applied at less than 750g ai/ha or quinmerac at less than 250g ai/ha, especially in combination with other herbicides. Check required dose with your BASIS-registered adviser. | <input type="checkbox"/> |
| 6. The field has a 5m no-spray zone or 6m grass buffer strip adjacent to water. | <input type="checkbox"/> |
| 7. The field has NOT been deep sub-soiled (below plough layer) in the preceding 6 months. | <input type="checkbox"/> |
| 8. The crop has been established early with minimum tillage of only the top 4-6 cms or by direct drilling. | <input type="checkbox"/> |
| 9. There is NO risk of heavy rainfall within 48 hours of application. | <input type="checkbox"/> |

See the Environment Agency's "What's in Your Backyard" (WIYBY) website

*Label restrictions still apply. A maximum total dose of not more than 1000g metazachlor/hectare may be applied in a 3-year period on the same field.



- The Drinking Water Directive (DWD) EU drinking water limit for 'total pesticides' in treated water is 0.5 µg/l. For an individual pesticide is 0.1 µg/l.
- Water Framework Directive (WFD) requires all water bodies to reach "Good Status" - both chemical and biological by 2027.
- Pesticides are the biggest issue for the UK meeting the WFD.
- Metololoxyl is the number one target for stewardship. Autumn applied herbicides are less of an issue, but are on the water companies' radar.
- Herbicide active substances appearing in raw water include metazachlor, quinmenac, carbamides and propanilic and are key targets for improved product stewardship.

THE INDIVIDUAL PESTICIDE LIMIT IS EQUIVALENT TO:



1 second in 320 years




1p in £100 million




A grain of wheat in 390 tonnes

DRINKING WATER PROTECTED AREAS (DWPAs)

DWPAs ensure protection from water quality deterioration and that water treatment meets the Drinking Water Directive. There are 651 in total in 2013 includes surface water and groundwater.



There are 488 surface water DWPAs in England, 42% (202 of 488) of which are currently 'at risk' - extra treatment has already been required or there is real risk it will be needed.



The biggest issue is pesticides which cause risk in 25% (over 122) of DWPAs.



Metazachlor is an issue in surface water, affecting 11 DWPAs

THE COSTS OF REMOVING PESTICIDES FROM RAW WATER

£3,942,198

An average cost of £150 per Mega litre (ML) of water, an average site will treat around 26,000 ML of water per year which gives a total treatment cost of £3,942,198 per year per site.

www.metazachlorfarmatters.co.uk

Metazachlor and Quinmenac are fundamental to early season weed control in oilseed rape. However, the frequency and magnitude of concentrations in raw surface water represent a real risk to restrictions being placed on these active ingredients. Time for action is NOW.

EARLY ESTABLISHMENT IS KEY

<h3>Think Best Practice</h3>	<h3>Think Agronomically</h3>	<h3>3. Establishment</h3> <p>Drill oilseed rape from mid-August onwards. Run trawlers across the slope if possible.</p> 
<h3>1. In the farmyard</h3> <p>Prevent sprayer filling spillage, container rinsing, disposal of rags & containers.</p> 	<h3>1. Soil</h3> <p>Ensure good soil structure, remove compaction but don't overwork.</p> 	<h3>4. Apply herbicides</h3> <p>Pre and early post-emergence for best performance.</p> 
<h3>2. In the field</h3> <p>Via drift, drainage and run-off.</p> 	<h3>2. Seedbed</h3> <p>Ensure good seed to soil contact. Don't make seed beds too fine but do consolidate.</p> 	<h3>5. Application</h3> <p>Follow stewardship guidelines. Avoid cracked or water logged soils. Ideal for weather forecasts.</p> 

METAZACHLOR MATTERS STEWARDSHIP GUIDELINES

- Maximum dose rate for winter oilseed rape is 750g/ha
- Land that is not drained - no timing restrictions.
- Drained land - Avoid applications after 1st October
 - if soil seedbed are favourable and drains are not flowing, applications can continue until 15th October
- Drained land in Drinking Water Safeguard Zones - no applications after 1st October
- Go to www.oilseychlorfarmatters.co.uk for spring details

* Latest restrictions effective

It's a crime to use Metazachlor in DWPAs

www.oilseychlorfarmatters.co.uk