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

<table>
<thead>
<tr>
<th>Active Ingredient</th>
<th>Metazachlor</th>
<th>Quinmerac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solubility in water</td>
<td>446 mg/L</td>
<td>223 mg/L</td>
</tr>
<tr>
<td>Mobility in soil ($K_{oc}$)</td>
<td>Moderately mobile (114)</td>
<td>Highly mobile (35)</td>
</tr>
<tr>
<td>Persistence in soil ($DT_{50}$)</td>
<td>Low persistence (7 days)</td>
<td>Low persistence (10 days)</td>
</tr>
</tbody>
</table>

• 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

2. Field sources
   • Spray drift
   • Field drainage
   • Surface run-off
   • Leaching

Can be avoided
Can be minimised
How Successful have we been?

- Metazachlor Matters, running for 2 seasons
- 750g MTZ Al/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
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

<table>
<thead>
<tr>
<th>Category</th>
<th>No. SW SGZs in England</th>
<th>Total land area covered by these SW SGZs (km²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 SW Safeguard Zones in England</td>
<td>125</td>
<td>37,454</td>
</tr>
<tr>
<td>2 SW Safeguard Zones with metaldehyde risk</td>
<td>80</td>
<td>31,682</td>
</tr>
<tr>
<td>3 SW Safeguard Zones with carbetamide risk</td>
<td>25</td>
<td>16,406</td>
</tr>
<tr>
<td>4 SW Safeguard Zones with propyzamide risk</td>
<td>31</td>
<td>17,895</td>
</tr>
<tr>
<td>5 SW Safeguard Zones with quinmerac risk</td>
<td>9</td>
<td>7,194</td>
</tr>
<tr>
<td>6 SW Safeguard Zones with metazachlor risk</td>
<td>7</td>
<td>8,044</td>
</tr>
<tr>
<td>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)</td>
<td>41</td>
<td>24,760</td>
</tr>
</tbody>
</table>

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)

<table>
<thead>
<tr>
<th>Safeguard Zone ID</th>
<th>Details</th>
<th>Contact Details</th>
<th>Other Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>SWSGZ2200</td>
<td>This surface water Safeguard Zone is for Pesticides (metaldehyde clopyralid, carboximide, pendimethalin, metazachlor, bentazon, mecoprop, MCPA, propyzamide, captan, propachlor, quinmerac)</td>
<td>Please call 03708 506 506 and ask to speak to the Surface Water Drinking contact for Staffordshire, Warwickshire and West Midlands Area</td>
<td>For advice on pesticides go to the Voluntary Initiative’s website</td>
</tr>
</tbody>
</table>
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 1\textsuperscript{st} Oct on drained land

• Think Water. Think Agronomically
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:-
1. Soils are moist and NOT dry, cracked or saturated.
2. Field drains are NOT flowing and are unlikely to flow within 7 days of application.
3. Field slope is less than 5% (a 5% gradient is 1 metre fall in 20 metres).
4. The field is NOT bordered by a watercourse.
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.
6. The field has 5m no-spray zone or 6m grass buffer strip adjacent to water.
7. The field has NOT been deep sub-soiled (below plough layer) in the preceding 6 months.
8. The crop has been established early with minimum tillage of only the top 4-6 cms or by direct drilling.
9. There is NO risk of heavy rainfall within 48 hours of application.

* See the Environment Agency’s “What’s in Your Backyard” (WIVBY) website

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For further information visit www.voluntaryinitiative.org.uk
**Autumn Pesticide Stewardship – Why Farmers Need to Take Action!**

- The Drinking Water Directive (DWD) EU deducing water limits for “total pesticides” in treated water is 6.5 ppb. For an individual pesticide is 0.1 ppb.
- Metachlor and Quinmerac 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.

**THE INDIVIDUAL PESTICIDE LIMIT IS EQUIVALENT TO:**

- 1 second in 320 years
- 1p in £100 million
- A grain of wheat in 390 tonnes

**THE COSTS OF REMOVING PESTICIDES FROM RAW WATER**

£3,942,198

**ThINK WATER. ThINK AGRONOMICALLY.**

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**Oilseed Rape Growers – Think Water This Autumn!**

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**EARLY ESTABLISHMENT IS KEY**

1. **Think Best Practice**
   - 1. In the farmyard
     - Clean barn and yard surfaces
   - 2. In the field
     - Use GPS, drainage and run-off

2. **Think Agronomically**
   - 1. Soil
     - Ensure good soil structure, remove compaction but don’t overwork
   - 2. Seeded
     - Ensure seed is in good condition, don’t sow too early or too late

3. **Establishment of oilseed rape**
   - 1. Establish oilseed rape from early growth onwards, not transplanted across the laps

4. **Application**
   - Pre- and early post emergence for best performance

**METAZACHLOR MATTERS STEWARDSHIP GUIDELINES**

- Maximum dose rate for winter oilseed rape is 750g/ha
- Land that is not drained – no draining restrictions
- Braeked land - Avoid applications after 1st October
- If seedbeds are favourable and rains are not flowing, applications can continue until 15th October
- Braeked land in drinking water safety zones – no applications after 1st October
- Go to www.metachlor matters.co.uk for more details

**ThINK WATER. ThINK AGRONOMICALLY.**