Managing forward crops of oilseed rape

Crop thickness and yield

Many autumn-sown oilseed rape crops produce pod canopies that are too thick, often due to early establishment, warm autumns and abundant soil nitrogen. Seed is often sown at high rates to minimise risks from winter kill, as well as slugs and pigeons.

Thick crops look productive, but are inefficient and more prone to disease and lodging. Such crops usually yield less than those with sparser canopies.

Remedies for thick crops

The conventional variety Apex and the hybrid Pronto were grown at ADAS Rosemaund and ADAS High Mowthorpe. Sowing dates and seed rates were varied to produce different canopy sizes.

Effects of triazole fungicides, tebuconazole (Folicur) and metconazole (Caramba), which have some plant growth regulator (PGR) activity, were tested. Non-triazole fungicides were also applied. Any effects of the triazoles on canopy size were therefore due to their PGR activity.

Targeting responsive crops

In 2000 and 2001, at both sites, trial plots of Apex or Pronto were sown in early September or early October at 60 or 120 seeds/m².

Tebuconazole or metconazole sprays were applied in March or April at full or half rates. Responses to both triazoles depended on crop size. Large crops from early sowing at high seed rates gave yield responses up to 0.7 t/ha in some trials. Small crops from late sowing at low seed rates responded less to treatment and sometimes there were yield losses (Figure 1).

Effects were related to green area index (GAI), the ratio of leaf green area to the area of ground on which the crop is growing, at

Figure 1. Responses (t/ha) of the hybrid Pronto to triazole sprays applied in March or April

<table>
<thead>
<tr>
<th></th>
<th>Early-sown, high seed rate</th>
<th>Early-sown, low seed rate</th>
<th>Late-sown, high seed rate</th>
<th>Late-sown, low seed rate</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tebuconazole</strong></td>
<td>0.5</td>
<td>0.3</td>
<td>0.2</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Metconazole</strong></td>
<td>0.4</td>
<td>0.2</td>
<td>0.1</td>
<td>0.0</td>
</tr>
<tr>
<td><strong>Average untreated yield</strong></td>
<td>3.8 t/ha</td>
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If you are unsure about any of the suggested actions, or want them interpreted for your local conditions, consult a professional agronomist.
spraying. Responses were often negative when GAI was less than 0.5 in March, or less than 1 in April.

The PGR effects of triazoles in northern Britain, or where light leaf spot is severe, are more variable. The disease often shortens the crop and where triazole fungicides are applied there are conflicting effects: disease control encourages a taller crop while the growth regulating effect of the triazole tends to shorten it. These effects may balance each other out in terms of canopy size.

**Identifying thick crops**

Methods of identifying crops that may benefit from spring treatment were assessed, based on comparison with photographs, height, fresh weight and dry weight. The aim was to estimate GAI.

The most practical methods were either to compare the crop with photographs (Figure 2) or to weigh the above-ground parts of the plant from a square metre of average crop. GAI (no units) can be roughly calculated as fresh weight (kg) x 0.8.

**Summary**

Many oilseed rape crops are too thick. Trials carried out jointly by ADAS and Nottingham University, and funded by HGCA, BASF, Bayer (and in kind by CPB Twyford) aimed to identify such crops in early spring and test effects of several treatments to reduce canopy size.

An application of tebuconazole or metconazole, applied in March or April, can reduce canopy size and disease incidence. This often leads to increased yield.

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**Topic Sheet 37**
Project Reports OS49 and OS64