

Developments in oilseed rape varietal assessment

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Abstract

Analysis of HGCA Recommended Lists' trials results has demonstrated that in recent years there have been significant differences in performance between varieties grown in Scotland and the north of England and those grown further south, making a UK recommendation misleading in many cases. This is probably mainly due to the difference in disease pressure between the two regions. Light leaf spot (*Pyrenopeziza brassicae*) is a serious disease nearly every year in the north but in the south stem canker (*Leptosphaeria maculans*) is the most important disease. In the 2009/10 Recommended List, varieties are recommended for the North (i.e. Scotland and the north of England) or East & West (i.e. the southern part of the UK). Only varieties recommended for both regions individually can have a UK recommendation.

Key words: variety evaluation, oilseed rape, light leaf spot, stem canker

Introduction

The HGCA, which is the cereals and oilseeds division of the UK Agriculture and Horticulture Development Board, funds independent trials of oilseed rape (*Brassica napus*) varieties. Only those varieties which meet specified criteria are 'Recommended' and added to the HGCA Recommended List (Anon., 2009). This follows extensive trialling and recording over three seasons, with over 40 trials in total (Jellis & McVittie, 2007). Until 2009 the main recommendation was for the whole of the UK, based on the complete trials set, but in recent years this has been found to be unsatisfactory.

Regional Differences

The UK has, in the past, been divided into two regions (Figure 1) for assessing varietal performance but a UK recommendation was based on the mean of all trials. Regional recommendations were possible if a variety performed well in just the North Region or East & West Region.



Figure 1. Division of UK into two regions for assessing oilseed rape variety performance.

However, in the past few years the performance of varieties in the two regions has been significantly different, making a mean across all trial sites increasingly irrelevant (Figure 2).

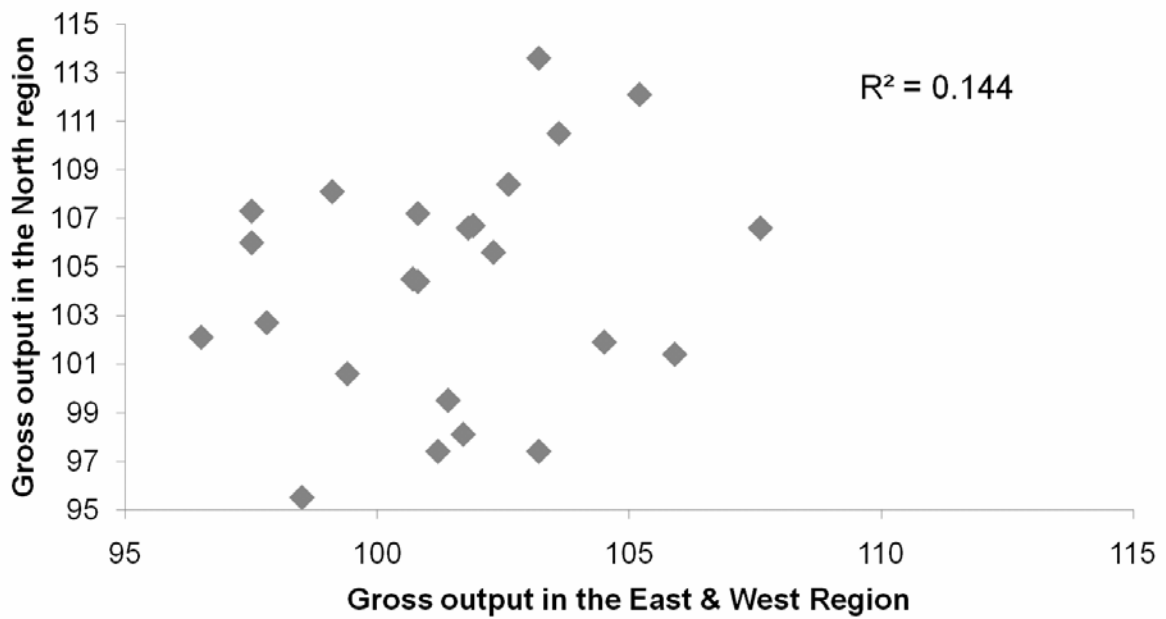


Figure 2. Differences in gross output (yield adjusted for oil content) between regions.

The main difference between the two regions in relation to oilseed rape cropping is disease pressure. In the north, light leaf spot (*Pyrenopeziza brassicae*) is a serious disease nearly every year and this has a major impact on yields. However, further south the impact of the disease is much more erratic, and losses from light leaf spot have decreased in this region in recent years ((Fitt *et al.*, 2006). Conversely, stem canker (*Leptosphaeria maculans*) rarely occurs in the north but is the most important disease of oilseed rape in the southern part of the UK. Estimates of losses from this disease have increased from c. €14M per season in the late 1980s to €56M per season in 2000-2002 (Fitt *et al.*, 2006).

Recently there have been a significant number of varieties submitted for testing with high resistance to light leaf spot. These varieties are not the highest yielding in situations where disease pressure is low but their disease resistance is a clear advantage in the northern region.

New Recommendation System

The lack of consistency between trial sites in the North region and East & West Region led to a decision in 2008 to produce separate recommendations for the two regions. Only varieties recommended for both regions individually can have a UK recommendation. The two regions have some recommended varieties in common but a number which are unique to one region. It is noticeable that, in particular, the Recommended List for the North includes a number of varieties with high resistance to light leaf spot, which are not present in the East & West List (Anon., 2009 and Table1).

Discussion

The reduction in light leaf spot in the southern part (East & West Region) of the UK and the introduction of varieties which are highly resistant to this disease are probably the main factors leading to a major difference in varietal performance in the two regions. The separation of the Recommended Lists has resulted in a shorter, more focused list for each region, enabling growers to select varieties most suitable for their situation. Growers also have the opportunity to use an interactive module called *Varieties on your farm* on the HGCA website, www.hgca.com, which allows them to interrogate those trials closest to their farm (Jellis & McVittie, 2007)

Table 1. The six highest yielding varieties in the North and East & West Regions

Variety	Region in which variety Recommended	Treated gross output ¹	Light leaf spot resistance ²	Stem canker resistance ²
Catana	North	114	7	4
Flash	North	112	6	5
	East and West	105	6	5
Cuillin	North	111	9	4
PR46W21	East & West	111	5	4
Emerson	North	108	9	4
Temple	North	108	7	5
Dimension	East & West	108	6	5
NKVictory	North	107	6	4
Vision	East & West	106	6	6
Hammer	East & West	105	6	7
Castille	East & West	103	5	6

1. Fungicide treated yield adjusted for oil content, as percentage of control.

2. Resistance rating on 1-9 scale, where 9 is highly resistant. Ratings of 7 and above are shown in bold.

References

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