



Genetic control of yield and yield components in winter oilseed rape (*Brassica napus* L.) grown under nitrogen limitation

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R��sum�� en anglais	<p>Despite its high nitrogen absorption capacity, oilseed rape (OSR) has a low apparent nitrogen use efficiency (NUE), which makes its production highly dependent on nitrogen fertilization. Improving NUE in OSR is therefore a main target in breeding. The objectives of the present work were to determine the genomic regions (QTLs) associated with yield and to assess their stability under contrasted nitrogen nutrition regimes. One mapping population, AM, was tested in a French location for three growing seasons (2011, 2012 and 2013), under two nitrogen conditions (optimal and low). Eight yield-related traits were scored and nitrogen-responsive traits were calculated. A total of 104 QTLs were detected of which 28 controlled flowering time and 76 were related to yield and yield components. Very few genotype \times nitrogen interactions were detected and the QTLs were highly stable between the nitrogen conditions. In contrast, only a few QTLs were stable across the years of the trial, suggesting a strong QTL \times year interaction. Finally, eleven critical genomic regions that were stable across nitrogen conditions and/or trial years were identified. One particular region located on the A5 linkage group appears to be a promising candidate for marker assisted selection programs. The different strategies for OSR breeding using the QTLs found in the present study are discussed.</p>

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