

**Working Group on Biochemical and Molecular Techniques
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TEST OF THE POTENTIAL USE OF SNPS MARKERS ON OILSEED RAPE VARIETIES*Document prepared by an expert from France**Disclaimer: this document does not represent UPOV policies or guidance*

With the development in the breeding of winter oilseed rape, number of varieties of common knowledge is increasing significantly. This together with the fact that more and more hybrids are being bred has led to a substantial increase in the size of the reference collection. All the Examination Offices (EOs) in Europe who conduct DUS tests on oilseed rape (OSR) have experienced difficulties due to the increased workload and the need for more space when conducting the trials. Following the recommendations and conclusions of the project CPV5766 co funded by the CPVO on the use of molecular markers (SSR) on oilseed rape varieties, a new project was proposed in 2016, using another type of molecular markers (SNP). The aim of this project is to test the potential use of SNP markers to reduce the number of varieties to include in DUS trials on OSR. Before assessing this new type of molecular marker on a large number of varieties, more knowledge and background were needed. It was necessary to know whether these markers could be used without difficulty for DUS purpose on partially out-crossing allotetraploid species such as WOSR, and whether a bulking strategy could be considered. Two laboratories from two different countries (France and United Kingdom) participated in this pilot project also co funded by the CPVO. A set of 500 SNPs was selected and tested on different matrices. This study was designed to assess the feasibility of bulk sampling strategy and to determine optimum bulk sizes based on preliminary estimations of allele frequencies. A crucial deliverable of this pilot project was that working in bulk of seeds is possible which will be less time and money consuming. From this pilot project, SNP set and primer design for KasPAR assay have been developed and are now available to work on the possibilities of DUS use on oilseed rape species in a follow up project.

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