

Are cleistogamous oilseed rape lines an effective confinement strategy for reducing the outcrossing potential via pollen?

Kerstin Dowideit¹, Michel Renard² and Alexandra Hüsken¹

¹ Julius Kuehn Institute, Federal Research Centre for Cultivated Plants (JKI), Institute for Biosafety of Genetically Modified Plants, Messeweg 11/12, D-38104 Braunschweig, Germany

² INRA-ENSAR UMR Amélioration des Plantes et Biotechnologies Végétales, BP 35327, 35653 Le Rheu, France

Oilseed rape (*Brassica napus* L.) has a high potential for outcrossing as its pollen can be dispersed over long distances through wind and insects. Therefore, the cultivation of genetically modified oilseed rape might lead to a distribution of new introduced genes in the environment. One possible approach to restrict this unintended pollen-mediated gene flow might be the cultivation of cleistogamous oilseed rape lines in which permanently closed, self-pollinated flowers are produced. Cleistogamous plants do not exist naturally among the genetic resources of oilseed rape species, but a cleistogamous line was obtained by chemical induced mutation at the national institute for agronomic research in France (INRA Rennes; Patent FR 97 15768). In 2009 and 2010 ring field experiments were conducted under practical cultivation conditions at two and five different locations in Germany, respectively, to quantify the outcrossing rates of cleistogamous oilseed rape.

We will present data about the stability and reliability of the cleistogamous trait as a biological confinement strategy in oilseed rape. The development of a PCR method to quantify the level of outcrossing of cleistogamous rapeseed lines will be discussed as well.

Cleistogamous oilseed rape, biological confinement, outcrossing