

Abstract

Genome editing using CRISPR/Cas9 is a tool with huge potential for basic plant science and plant breeding but the latter potential can only be realized if the plants generated would not fall under the definition of a genetically modified organism (GMO). The EU definition of GMOs could not readily be applied to genome-edited plants so their legal status has been unclear. To get a concrete test case, we used CRISPR/Cas9 to generate *Arabidopsis* plants lacking a photosynthetic protein, PsbS, and submitted a question whether they would fall under the GMO legislation. The Swedish Board of Agriculture argued that plants modified using CRISPR-Cas9 where DNA only has been deleted and no "foreign DNA" is present, should not be regulated as GMOs. This opened up the possibility to, in Sweden, grow such plants under the same conditions as "normal crops", i.e. without the supervision of any authority. The implications of this, and follow-up activities including the cultivation and cooking of *Brassica* plants in the summer of 2016, will be presented. Now, the decision of the ECJ on July 2017 may appear clear, but issues about practicalities and implementation remain, in particular intriguing questions around the fact that plants could be grown in parts of the world) where they are not covered by the GMO legislation, may be regulated in the EU although they in reality could not be traced.