



Professor Dr. Dirk Inze

AFFILIATION:
VIB-UGent Center for Plant Systems Biology

LINK TO WEBPAGE: <https://www.psb.ugent.be/>

TITLE OF PRESENTATION: ***Gene editing for crop improvement: the quest for a science based policy making***

Abstract of presentation

All that we eat does not occur in nature and is the product of plant breeding. For a long time this process was empirical. In the last centuries various innovations have accelerated the development of improved crops. These include, amongst others, the use of mutagenesis, hybrids, tissue culture, molecular markers, genomic selection and the introduction of novel traits by genetic engineering. Much of the recent advances were aided by the spectacular progress in understanding plant genomes and the molecular networks underlying important agronomic traits. In 2012 a new breeding technology, gene editing or CRISPR-Cas, emerged. This amazing, Nobel-Prize winning, method allows for making very specific changes in the genome of plants, ultimately indistinguishable from what can be obtained by conventional breeding. Whereas already a large number of countries adopted this technology for crop improvement, a ruling of the European Court of Justice (2018) classified plants obtained by gene editing as GMOs, hereby de facto jeopardizing the deployment of CRISPR-Cas in Europe. Importantly, scientists all over Europe have expressed deep concerns on the ECJ ruling and called for revisiting the use of gene editing for crop improvement, a process that is now ongoing in the EU. However, it is pivotal that the scientific community continues to emphasize the crucial role of gene editing for selection of climate resilient crop varieties with a reduced environmental foot print (less pesticides). There is an urgent need for more science-informed policy making!

Biographical note

Dirk Inzé is a global leader in plant biology. His research ambition is to obtain a holistic understanding of the molecular networks regulating plant organ growth and crop productivity. His work has opened up new perspectives for providing food security for the growing world population in a changing climate.

Dirk Inzé received his PhD at Ghent in 1984. In 1990, he was appointed Research Director of the French National Institute for Agricultural Research (INRA), where he initiated highly successful research programs on the plant cell cycle and growth control. In 1995, he became Professor at Ghent University and he was the scientific founder of the biotechnology company CropDesign, which was established in 1998 and acquired in 2006 by BASF Plant Science. In 2002, Dirk was appointed Director of the Center for Plant Systems Biology of the VIB. Under his directorship, the Center – currently employing approximately 300 individuals – became one of the world

leading centers for advanced plant sciences. Dirk's research was recognized by numerous awards and he is a member of several science advisory boards. He currently owns, for the second time, an advanced ERC grant and his work received >60,250 citations (H-factor 137). In 2017, Dirk was awarded with the prestigious World Agriculture Prize. In 2020 he was elected to be a member of Academia Europaea. In 2021, Dirk was appointed member of the Science Council of the ERC. He is the chairperson of EU-SAGE, a consortium of 142 European plant research institutes advocating for the use of Gene editing for a sustainable agriculture (www.eu-sage.com). responding.