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The international debate on the regulation of the new gene editing methods

The times of the old regulation on transgenic plants is over, we need new strategies to ensure the safety of the coming Gene Edited crops. Still, some few things we should be aware of:

a) The process of transgenesis and of natural mutation are identical, the whole war on basic differences in the making of transgenic crops was built on wrong science, this was known since decades, but the fascination of the new breeding possibilities with transgenic crops was so huge that people lost in their general view of GMOs and followed a scientifically flawed Genomic Misconception.

b) It is since more than two decades clear that regulators based their complex laws on false premises of definitions of transgenic crops, The EU legislation on "GMOs" is based in important parts between scientific nonsense and protectionism: An unfortunate and ongoing Schumpeterian chain of public choices.

c) Since decades there has not even a headache been reported as a negative health impact of transgenic plants, unless it was based on questionable statistics and selective data.

The regulation of new Gene Editing is much easier, since the most precise methods do not even contain foreign DNA, the alterations in the new crops are reduced to a few, precisely defined sequences of another crop species or crop variety, which will be advantageous for the new breed. These "oligo-mutated" crops need a minimum of regulation and according the US regulatory agency APHIS it should be not taken as GM plant to be regulated at all, but the US Environmental Office and European Regulatory units have not decided yet on the regulatory status, they are still in a tedious and long enduring process of scientific debates. The opposition of GM crop breeding is maintaining the resistance against Gene Editing, and wants not only to exclude it from their own ideas on crop breeding, but also include it together with the transgenic crops in a strict and costly regulatory process with strict political and weak scientific arguments.

The authors opinion can be summarized according to the ideas of Wolt and Podevin, they base their view on a *dynamically flexible regulatory system*, with a lowest category of short term regulation during a few years for the oligo-mutation breeds, ending on the highest level of regulation with the old transgenic crops.

Biography

Klaus Ammann is a Professor emeritus at University of Bern. Born: 6 December 1940 in Bern, Thesis: Vegetation and Glacier history, summa cum laude in 1972 Bern University. Assisting to Swiss Atlas of Plant Distribution, first Swiss research department on Lichenology (chemosystematics and bio-monitoring air pollution). Teaching in plant biodiversity and vegetation ecology, Director of the Bern Botanic Garden 1996-2006 and Prof. h.c. 2000. Sabbatical stays: Bergen, Norway, Duke University in North Carolina, University of the West Indies in Jamaica, and Missouri Botanical Garden in St. Louis. Emeritus 2006, guest prof. Delft University of Technology, Sabanci University in Istanbul and Tehran 2017. Moderating 'Berne Debates', early blog on plant biotechnology, ASK-FORCE at PRRI (Public Research and Regulation Initiative) FORUM at European Federation of Biotechnology, KLAUSBLOG at Black Sea Biotechnology Association and since 2017 frequent contributions for literature blog of Klaus Jany. Numerous committees: Chair European expert committee on plant conservation, Council of Europe, founding member Planta Europa, Swiss Biosafety Committee: Biodiversity Section of EFB. Several Swiss and European research projects on gene flow, plant conservation, lichen chemosystematics and monitoring air pollution. Publications on biogeography, vegetation history, vegetation ecology, plant systematics (monography on Bromus), gene flow of crops and their wild relatives and agricultural biodiversity. He also has a special interest in Pythagorean Harmonics science and holistic questions in evolution.

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