

**Working Group on Biochemical and Molecular Techniques  
and DNA-Profiling in Particular****BMT/17/9****Seventeenth Session  
Montevideo, Uruguay, September 10 to 13, 2018****Original:** English  
**Date:** September 5, 2018**DO NEW BREEDING TECHNIQUES LEAD TO ESSENTIALLY DERIVED VARIETIES?**

*Document prepared by an expert from the International Community of Breeders of Asexually Reproduced Ornamental and Fruit-Tree Varieties (CIOPORA)*

*Disclaimer: this document does not represent UPOV policies or guidance*

The implementation of New Breeding Techniques (NBT) is creating a new source of potential Essentially Derived Varieties (EDVs) in asexually reproduced crops, compared to natural and induced mutations and classic GMOs. For CIOPORA, the international community of breeders of asexually reproduced ornamental and fruit plants, the introduction of the EDV concept in the UPOV 1991 act has always served a dual purpose: 1. to promote the exploitation of true novelties introduced or found in an Initial Variety (IV); and, 2. to guarantee a fair return on investment for the breeder of the IV. Under the current system, the breeder of an EDV needs the authorization for commercialization of the breeder of the IV in case the IV is protected.

Apart of the large players, CIOPORA is aware that NBT enables also to consortia of small and medium sized (breeding) companies, universities and research institutes to introduce very valuable characteristics into existing varieties; often traits are to be tackled that cannot be addressed by conventional breeding. There can be a high input needed of knowledge and technology that deserves a fair return on investment. A NBT variety is not supposed to be plagiaristic i.e. aimed to copy an existing variety being distinct only from the IV in minor characteristics as a major improvement is supposed to be intended due to the developmental costs. Nevertheless, when a player in the field decides to make use of a protected variety to develop by NBT a new trait, one can argue that such development also aims at retaining the essential characteristics of the protected variety. For those reasons, CIOPORA claims it is fair to consider all first generation varieties resulting from NBT to be EDVs.

In the contribution to the BMT in a short way, a comparison will be made between natural and induced mutations and the use of NBT, especially the use of Site-Directed Nucleases (including CRISPR/Cas). Arguments will be raised to proof that the first generation varieties resulting from NBT cannot be discriminated from natural mutations or conventional GMOs. Common feature of all first generation varieties resulting from NBT is that they retain virtually the whole genome of the IV. In this view, the detection of first generation NBT varieties by use of molecular techniques will not be different than the EDV detection tools being developed for classic mutants.

[End of document]