



New Genetic Techniques (NTGs) and their Perspectives for Geographical Indications Sustainability.

Innovations in the Grapevine sector.

Alessandra Narciso, PhD

alessandra.narciso@cnr.it

Immacolata Caruso, PhD

immacolata-caruso@cnr.it

Challenges of GIs & NGTs



Premises

- Climate change, biodiversity loss, landscape degradation, and migration—along with the loss of traditional knowledge—pose risks to the long-term sustainability of grapevine GIs, potentially undermining their resilience and authenticity.
- On 13 May 2024, the new EU Regulation on GIs recognises sustainable practices: “producers will now be able to valorise their actions regarding environmental, economic, or social sustainability”.
- The current grapevines genotypes are not able to adjust to the rapid changes needed.

- NGTs are new advanced biotechnological techniques.
- They allow DNA to be edited more precisely and more quickly than conventional breeding methods or established genomic techniques (EFSA).
- NGTs are distinguished between two main categories (NGT1+2) according to the level and type of editing/mutation.

Traditional genetic improvement in grapevines can introduce new characteristics in the resulting hybrids, potentially leading to the loss of unique varietal traits typical of GIs.

Instead, NGTs (1 in particular) allow for the preservation of the original genotype and better adaptability to biotic and abiotic stresses.

Legislative and policy development



Italy

- Proactive approach to NGT to overcome the legislative vacuum at EU level through an amendment to a Legislative Decree. (Art. 9-bis, Legislative Decree after Law 13 June 2023, n. 68, G.U. 13/06/2023, n. 136). The decree allows to experiment NGTs in the field (until December 31, 2025).
- Studies are ongoing on some well-known wine varieties (Chardonnay, Nebbiolo, Valpolicella, etc.) to ameliorate the tolerance to fungal pathogens without intervening on the organoleptic qualities, and other appreciated characteristics.
- On January 31, 2025. *Manifesto* of major Italian Agricultural Trade Unions.

European Union

- July 2023: EC proposes a NGT regulatory framework.
- The EU Council and the European Parliament approved it.
- Member states negotiations: ongoing.

Conclusion



The deregulation of NGTs (Category 1) by the European Union and Italy represents a pivotal shift towards more flexible and innovative approaches in grapevine breeding.

- NGTs could be used to increase GIs sustainability and safeguard them.
- The complexity of the matter, including public prejudices and confusion with GMOs, and the intrinsic nature of grapevines should be factors to be considered.

N.B. Closely monitor the outcomes of the ongoing field experiments on grapevines and ensure that the benefits are aligned with both environmental and consumer safety standards.
If field experiments confirm the success of NGTs, their applicability to GIs could be further developed and regulated.

Our ongoing study conducted with a questionnaire among Italian researchers and producers in the grapevine sector is starting to show the difficulty of communicating what NGTs really are.

Thank you
for your kind attention!

E-mails:

immacolata.caruso@cnr.it

alessandra.narciso@cnr.it

