

ANSES WORKING GROUP ON THE EVALUATION OF PLANTS OBTAINED BY NEW GENOMIC TECHNIQUES

Dylan CHERRIER – Scientific coordinator
EFSA - 89th Advisory Forum meeting

Context and objectives

European Commission study on
new genomic techniques (April
2021)



REFERRAL PROCEDURE FROM
THE FRENCH MINISTRIES OF
ENVIRONMENT AND
AGRICULTURE



Working group launched in
October 2022

Determine whether (and how) the
current requirements regarding
**sanitary and environmental risk
assessment** should be adapted for
plants obtained by **directed
mutagenesis**



Document and analyze the **social
and economic stakes** associated
with new genomic techniques in
plants



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Questions

1

Document the **current scientific knowledge** on potentiel **undesired genetic effects** of CRISPR-Cas on modified plants genomes (both on-target and off-target)

2

Determine whether **new specific requirements** regarding sanitary and environmental risk assessment should be asked for plants obtained by directed mutagenesis

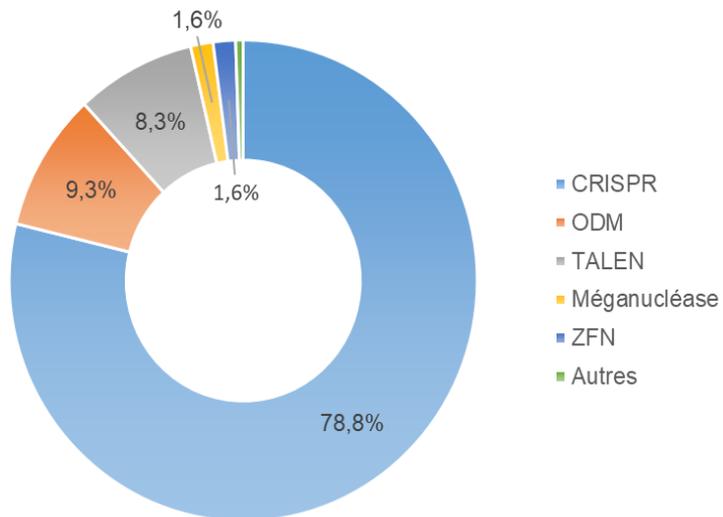
3

Determine whether part of the **current requirements** regarding sanitary and environmental risk assessment could be **simplified or suppressed** for plants obtained by directed mutagenesis

4

Provide a **decision tree** regarding the sanitary and environmental risk assessment of plants obtained by directed mutagenesis

NGT and plants



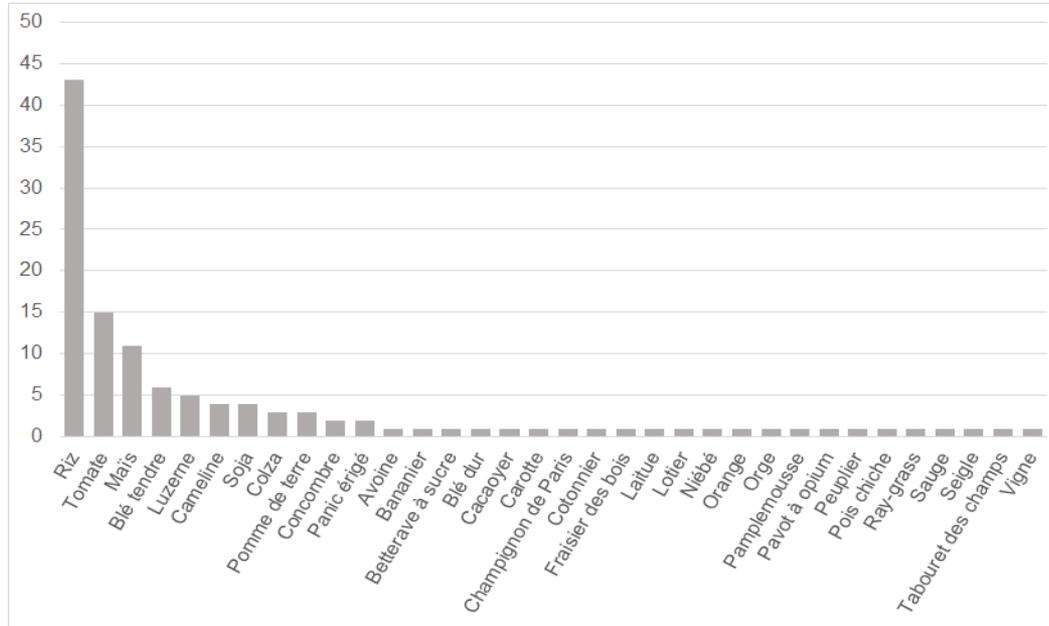
NGT techniques used for plant modifications
(adapted from Parisi et Rodríguez-Cerezo, 2021)

More than 3/4 of referenced NGT applications on plants are done with a **CRISPR-Cas system**, and a large majority of them consists in **short indels**



**MAIN WORK FOCUS ON
PLANTS OBTAINED BY
DIRECTED MUTAGENESIS
USING A CRISPR-CAS SYSTEM**

NGT and plants



Plant species modified by CRISPR

Starting point for the
working group



Inventory of CRISPR-Cas
applications in plants and
analysis of species and
« modified trait » diversity
(not exhaustive)

In theory, **much higher
diversity** compared with
what is on the market for
transgenesis

Ongoing work

1

On-target and off-target undesired effect
Systematic review of the literature

2

Adaptation of the requirements regarding sanitary and environmental risk assessment
Analysis of current requirements and **case study** of plants obtained by NGT

3

End of mandate in December 2023
SCIENTIFIC OPINION PUBLICATION EXPECTED EARLY 2024



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*Liberté
Égalité
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anses

THANKS / QUESTIONS