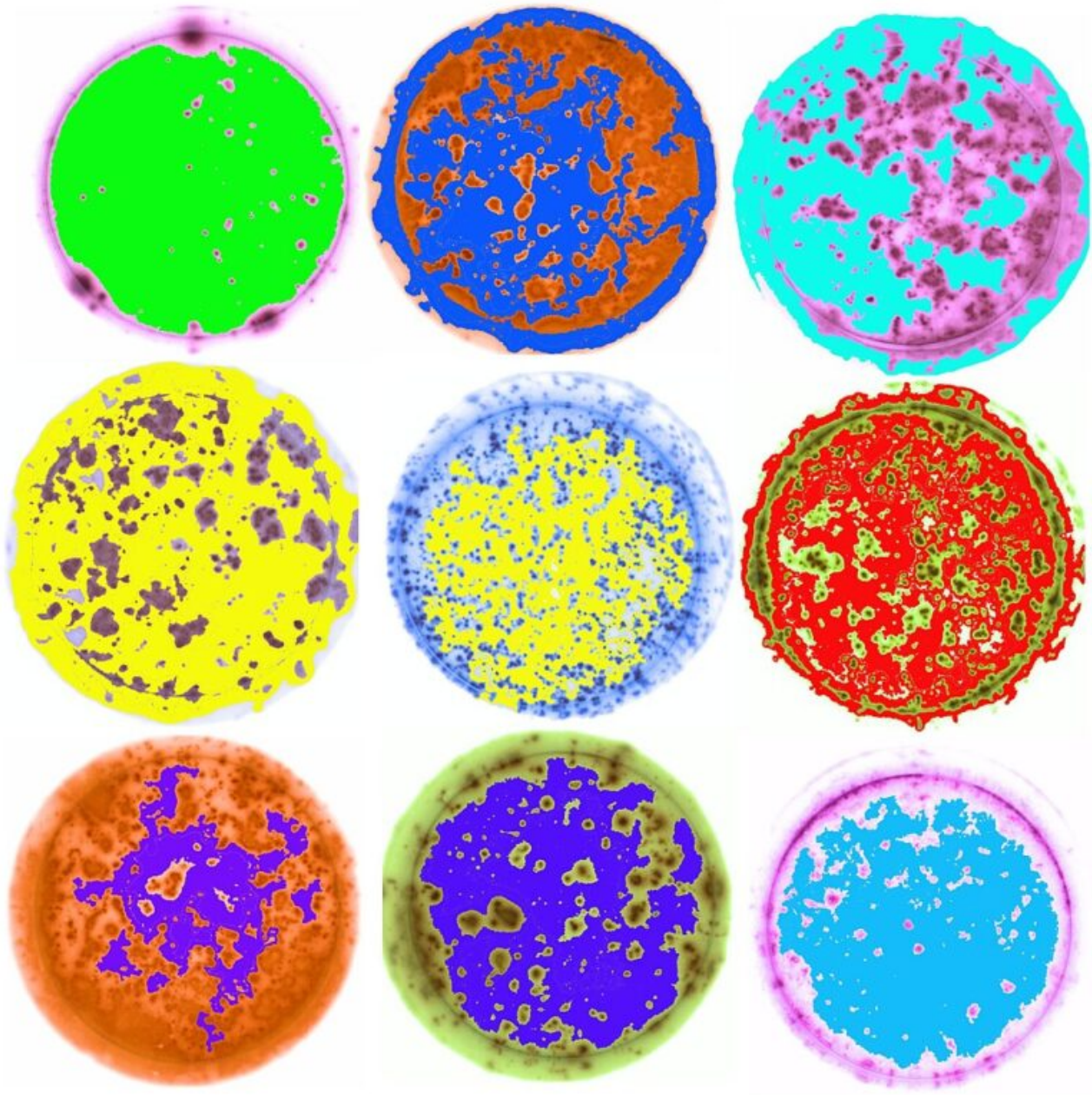
Veille citoyenne d'information sur les OGM et les semences

In 2020, France believed it was possible to distinguish GMOs/NGTs

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If the European Commission manages to convince the European Council and Parliament to accept its legislative proposal, many GMOs could be deregulated in Europe. Since the 2010s, it has been argued that these GMOs produced using new techniques (GMOs/NGTs) cannot be distinguished from organisms that have arisen naturally or through conventional breeding. Yet, in 2020, France explained in detail how to make this differentiation technically possible. A fact that the French government seems to have forgotten since…



UCSF Photo/Dr. Sonja Schrepfer, Xiaomeng Hu, and Dr. Dong Wang

It was 2020 when the French government responded to a questionnaire from the European Commission on GMOs/NGTs[i] . The Commission was then consulting EU Member States on their practices and views to prepare what would become, in 2023, its proposal to deregulate these GMOs. However, in the introductory remarks of this text, the Commission states that *"in some cases, products containing or consisting of plants with genetic modifications introduced by NGTs cannot be differentiated from products containing or consisting of plants bred with conventional breeding methods by analytical methods*"[ii] . This point is all the more significant given that these *"some cases*" will be extended to all GMOs/NGTs and will therefore form the basis for the proposal to deregulate virtually all of them. Whilst *Inf'OGM* has on several occasions highlighted the feasibility of identifying and distinguishing these GMOs, the French government had already reached the same conclusion as early as 2020.

Are GMOs/NGTs really untraceable?

As the French government noted in 2020, the initial observation is very basic, but deserves to be explained. As things stand, current European legislation on GMOs requires authorisations to be issued before any GMOs are released onto the European market. These authorisations are conditional upon applicants providing analytical methods to detect and identify their GMOs. France states that *“NGT products authorised at European level in future should logically comply with this obligation, thus providing the competent authorities with the analytical tools needed to perform checks*”. With such methods at its disposal, France explains that it has identified *“no particular difficulties [...] to implementing NGT product traceability, as it will be possible to verify the documentary traceability information given by analytical testing*".

However, quite logically, it is subsequently clarified that in the case of unauthorised NGT products, the difficulty arises as to whether they would be detectable and identifiable in the event of their illegal presence in Europe. At this stage, France identifies two cases in which the question of the ability or inability to detect and identify these GMOs arises.

The first concerns organisms modified by the insertion of genetic sequences *“that do not contain the sequences routinely screened for and for which no prior information is available on the sequences introduced*”. In response to these cases, which do not appear to be the most difficult to resolve, as demonstrated by the work of the Co-Extra network in Europe on unknown transgenic GMOs[iii], France states that *“exploratory research is being conducted by ANSES*” (detection of exogenous sequences using high-throughput sequencing methods and statistical analysis, for example). Taking a cautious approach, France stated that “*it would be premature at this stage to comment on the possibility of using this method for the detection of plant products derived from NGTs containing DNA insertions*”.

The second difficult case that could arise concerns *“NGT products which have mutations without DNA having been inserted*”. In this regard, the government states that *“the detection of mutations is theoretically possible when information is available on the modified sequences or their precise location*”, with, once again, work by ANSES enabling such mutation detection at a rate of *“single-nucleotide mutations*”. It adds elsewhere in its response that, for these cases, *“a multidisciplinary approach involving laboratories carrying out basic research into genome plasticity, GMO-detection laboratories and IT specialists could be explored. This would enable the information available concerning the modifications which may be made to genomes to be collected and processed so as to translate it into molecular tools for detecting those modifications*”. Whilst the government considers that this approach would not make it possible to determine whether the modifications occurred naturally or were obtained by NGT, it nevertheless states that by *“mounting a profile on a set of genome positions, it would be possible to assess the likelihood of a given profile occurring naturally*”. It is worth noting here, in addition, that reviewing patents can also provide information on the genetic modification processes used.

At national level, France explains that ANSES *“wishes bring together research teams for this approach, but such research requires substantial funding – obtained, for example, through a call for expressions of interest*”. The European Commission could also play a role since, *“to supplement the information available on NGT products placed on the market or developed around the world, the Commission could initiate discussions with non-EU countries in order to identify more specifically the conditions in which the data needed to detect such products could be transmitted to the European authorities. Indeed, some non-EU countries have set up a procedure whereby before they determine the legal status of products obtained from new techniques, those products are subject to examination on the basis of a file. This means that data is available from the authorities of these countries even for products not covered by the regulations”*.

However, the government maintains the view that *“for products that are not declared or for which no information is provided on the genetic modification, no solution has been identified to enable their detection and therefore the implementation of controls*”. The information available on GMOs/NGTs that are likely to be placed on the market *“is very incomplete*”. Above all, *“in the event that a mutation were detected, no method would allow a distinction to be made between a natural mutation, a mutation resulting from random mutagenesis or a mutation resulting from a NGT, in the absence of a specific trace in the genome*”. But solutions do exist, and the French government lists some of them for the European Commission.

France highlights solutions, some of which are already in place!

One of the solutions highlighted by France was analytical traceability (which relies on laboratory analyses). This is essential as a complement to documentary traceability to avoid *“distortions in competition between, for the one part, European producers using NGTs for which it would be possible to check the proper implementation of documentary traceability and, for the other part, non-EU country*
producers using NGTs for which the inspection authorities would be forced to accept import certificates
without any means of checking their validity”.

To overcome the difficulties involved in carrying out such analyses in cases of GMOs for which no detection or differentiation methods exist, France proposed several avenues to the European Commission. It stated that the establishment of a major European research programme *“could enable progress to be made on the issue of the traceability of NGTs*”. This programme could focus on avenues such as *“research on the characteristics of techniques that can provide information on genetic modifications to products*”, or on the fact that *“changes obtained by genome-editing techniques may have different characteristics to those generated by mutagens or occurring naturally in nature. They may affect areas of the genome not normally subject to mutations, or occur on all or part of the copies of the gene”.*

In addition to this European research programme – which will ultimately not be implemented by the Commission – France highlights ongoing initiatives which it suggests are useful. This includes the Europol programme combating counterfeiting through its *"OPSON on seeds, plants and intellectual property rights*" operation. France points out that this programme *“organises the collection and exchange of information between national anti-fraud agencies. 1 500 institutions in networks are able to react to the slightest alert, including the units of DG SANTE responsible for seeds*”. On 6 March 2020, representatives of this programme were questioned about the identification of counterfeit products *“derived from NGTs, which are often presented as indistinguishable from non-counterfeit products derived from traditional breeding processes*”. According to the French government, their response was that Europol has *“never needed to carry out a DNA analysis. The documentation, along with surveillance of the internet and the dark web, had up to now always been sufficient. According to Europol, it is not impossible to identify and distinguish new GMOs which have not been declared or identified as such*”. For Europol, the need to carry out DNA analyses is a possibility that should not be ruled out.

Another possibility suggested concerns the implementation of a so-called matrix approach. This would involve combining *“documentary approaches providing convergent bodies of indirect knowledge, presumptions and evidence with analytical approaches. Databases and decision-making support tools could assist the analyst in routine work formalised in advance by research*”.

Finally, in 2020, the French government did not rule out the possibility of a regulatory framework for GMOs/NGTs, since the issues related to their detection and differentiation could be overcome by combining existing research programmes at the time, surveillance operations already in place such as Europol, or by setting up new research programmes. Although, according to the government, this approach would be costly, it is nonetheless not impossible. Paradoxically, whilst, at the end of 2025, France's representative in Brussels argued in favour of deregulating these numerous GMOs, the government wrote in 2020 that it considered that *"in general, while it is true that detection methods are currently not available for all NGTs, the French authorities consider that this should not prevent the implementation of regulations to govern these new techniques"*...

i French Government, "Questionnaire on new genomic techniques to contribute to the study requested by the Council and endorsed by the Joint Working Group of GMO competent authorities on new genomic techniques on 15 January 2020", 3 July 2020.

ii European Commission, "Proposal for a REGULATION OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on plants obtained by certain new genomic techniques and their food and feed, and amending Regulation (EU) 2017/625", 5 July 2023.

iii Eric Meunier, "Nouveaux OGM : leur traçabilité confirmée", *Inf'OGM*, 12 August 2021.

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