Updated (January 2026) FoodDrinkEurope views on the use of Precautionary Allergen Labelling (PAL) for mustard on products containing wheat.

FoodDrinkEurope is aware of the fact that analyses have indicated potential cross-contamination with mustard of wheat-containing materials mainly sourced from Italy. This issue was first reported by the Irish contact point of the RASFF. The alert was related to wheat which was reported as contaminated with mustard. The wheat in question was produced in countries of the northern hemisphere including and in particular in Italy (harvest of 2021). However, presently, there is no concrete evidence of genuine mustard cross-contamination in the 2021 durum wheat crop, and the positive results seem to be related to uncertainties around testing methods.

We were also informed by our members that the Italian competent authorities (CAs) have indicated that they were going to conduct further research to identify the most suitable analytical method and protocol to follow to accurately test for the alleged presence of mustard in wheat. In fact, the Italian Ministry of Health relevant circular at the time clarified that, there were no reference methods available in the country for detecting the allergen mustard in food. Samples taken during official controls by the CAs are analysed by official laboratories using methods which are internally validated and which are accredited by the Italian Accreditation Body (Accredia). Consequently, the National Reference Centre for the detection of substances and products causing allergies or intolerances in food (CdR CRENARIA) together with the Department of Food Safety, Nutrition and Public Health of the Istituto Superiore di Sanità (ISS) have agreed to carry out an experimental evaluation of commercially available ELISA and PCR kits for the detection of mustard in cereal matrices, in order to identify the most suitable analytical method and protocol to follow. In the meantime, the Italian ministry recommended that, where the accidental presence of mustard in the finished product cannot be excluded, Food Business Operators (FBOs) utilise labelling warnings such as 'may contain traces of mustard'. Furthermore, the Italian CAs also informed that while studies and assessments of accurate analytical methods are pending, it is suggested that official sampling for the detection of mustard in flour and wheat-derived products be avoided, in order to avoid foreseeable and unnecessary disputes.

FoodDrinkEurope considers that Precautionary Allergen Labelling (PAL) has an important role to play in protecting allergic consumers, but in order to fulfill that role, it needs to be applied consistently, in a circumspect manner and in accordance with defined and agreed principles. We support a risk-based approach with appropriate testing via reliable methods, as we indicated in our non-paper on 'Precautionary Allergen Labelling (PAL): a science-based approach based on Quantitative Risk Assessment'[1]. Such an approach would greatly strengthen the protection of allergic consumers by making PAL meaningful and transparent.

There is no definition of mustard from a regulatory perspective, however the botanical identities of the plants commonly used in food are *Brassica juncea* (brown mustard), *Brassica nigra* (black mustard)

[1] https://www.fooddrinkeurope.eu/wp-content/uploads/2021/05/Precautionary-Allergen-Labelling.pdf

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and *Sinapis alba* (white or yellow mustard) and foods of these origins are by precedent associated with the legal requirement for allergen declaration of mustard. However, there are closely related plants of the Brassicaceae genus that may cross contact wheat, including the weed found in wheat fields, *Sinapis arvensis* (wild mustard), and the commercial crop, *Brassica napus* (rapeseed and canola depending on the variety). There are reports of cases of presumed cross-contamination of wheat with mustard where samples that have tested positive for mustard when analysed using an ELISA, have subsequently been determined to be false positives owing to cross-reactivity with proteins from other plant species from the same family as mustard, notably rapeseed[2]. Similar findings were also found by Health Canada[3] after investigating the possibility that a proportion of certain cereal grains could be cross-contaminated with low amounts of mustard in 2016. More recent scientific data have since confirmed that it is a related plant species, canola, rather than mustard that is detected at low levels in some cereal grains[4]

FoodDrinkEurope reiterates that allergen cross-contact hazards, which have been assessed as significant, must be clearly identified with PAL, including any confirmed and significant allergen mustard cross-contamination hazards. However, in the present situation, due to the lack of evidence of significant mustard cross-contamination in grains, FoodDrinkEurope does not recommend the systematic use of PAL. We believe that a well-defined analytical approach is required to accurately quantify any proteins from mustard (*Brassica juncea*, *Brassica nigra*, *Sinapis alba*) present in wheat, or other grain-based materials, with subsequent use of the data in a risk assessment to determine whether or not PAL should be applied to the final product containing the wheat in question. In this regard, we see a role for PCR testing in identifying, with sufficient sensitivity, a specific mustard signal and, based on the result, we would recommend having a follow-up with a quantitative PCR kit to quantify the allergen and provision of this data through the supply chain such that the final product producer can undertake a PAL risk assessment. We believe it is important for operators who are aware of a risk of cross-contamination to proceed with a similar risk-assessment procedure.

UPDATE January 2026:

Building on the considerations above, recent experimental work coordinated by the Italian National Reference Centre for Allergens (CReNaRiA), together with the Istituto Superiore di Sanità (ISS), has further confirmed the practical challenges associated with the detection of mustard in cereal-based products and the limitations of currently available methods. While several methods exist to detect mustard and differentiate between Brassica species, obtaining pure reference material from known sub-species remains difficult, as seeds intended for sowing are often mixed. Moreover, not all analytical methods are fully validated across the wide diversity of Brassicaceae species occurring in agricultural environments, which goes beyond *Sinapis arvensis, Brassica napus or Brassica rapa*. Additional species such as *Raphanus raphanistrum* have also been shown to cause cross-reactivity in several detection methods. Furthermore, a number of more advanced analytical approaches are not accessible to food business operators through routine commercial laboratories, limiting their practical applicability for supply chain verification. These analytical limitations do not prevent food business operators from performing risk assessments based on supply chain knowledge, agronomic context

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[2] Frigerio et al. Genes (Basel) 2019 Mar; 10(3): 234. 'Development of a DNA Barcoding-Like Approach to Detect Mustard Allergens in Wheat Flours'

[3] https://www.canada.ca/en/health-canada/services/food-nutrition/food-safety/food-allergies-intolerances/food-allergies/update-mustard.html

and available data; however, they illustrate why analytical results at very low levels must be interpreted with caution and should not, on their own, trigger the systematic use of PAL.

Experience gained from the use of commercial tests, including analyses performed on reference seeds from scientific collections, shows that both general and species-specific PCR, as well as LC-MS, may encounter difficulties with one or more related plant species. In routine practice, PCR results in wheat flour typically do not exceed low ppm levels. Even in the hypothetical case that these signals were attributable to mustard, the resulting mustard protein levels would remain extremely low. These observations, together with the ongoing need for further method development and harmonisation, further support the previous conclusions of our FoodDrinkEurope paper not to systematically apply PAL for mustard on wheat-based products in the absence of demonstrated and significant allergen risk.