

Seeds grinding for GMOs analysis using the Precellys® Evolution

CONTEXT

Genetically modified organisms (GMOs) are increasing worldwide and the task of the laboratories in charge of the tests compliance of food, feed or seed samples with their relevant regulations are increasing as well. Protein and DNA-based methods are widely applied in the GMO analysis. The first step is the homogenization/grinding of raw material and food ingredients before extraction of protein or DNA from those given samples.

MATERIAL

- Precellys® Evolution homogenizer.
- Precellys® Lysing Kit: CKMix50_7mL (KT03961-1-306.7).
- Sample: 1g of seeds (Sunflower, Cashew nuts, Whole peppercorns, Coffee beans, Flax seeds, Black lentils).
- No buffer (Dry grinding).

PROTOCOL

- Precellys® Evolution:
Sunflower seeds: 6800rpm, 1x20sec.
Cashew nuts, Whole peppercorns, Coffee beans: 7200rpm, 1x10sec.
Flax seeds, Black lentils: 7200rpm, 1x30sec.
- Usually, 100mg or 200mg of grinding sample material was extracted.
- Analysis: protein-based testing methods (western blot, ELISA....) or DNA-based testing methods (Southern blot, quantitative real-time PCR....).



RESULTS

With the Precellys® Evolution, 1g of seeds are efficiently grinded under dry conditions in 7mL Precellys lysing kit before DNA or protein extraction (Figure 1) in less than 30s.

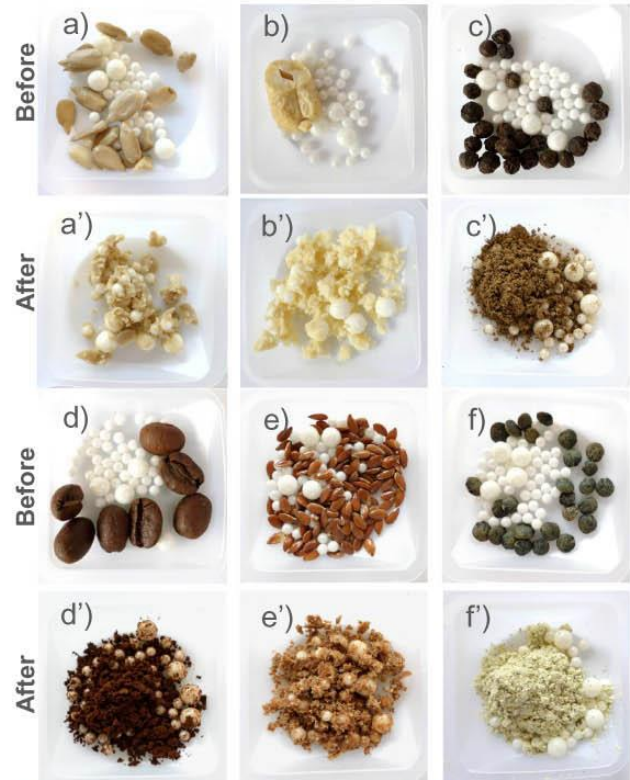


Figure 1: a) Sunflower, b) Cashew nuts, c) Whole peppercorns, d) Coffee beans, e) Flax seeds, f) Black lentils before/after (') grinding using Precellys® Evolution

CONCLUSION

Precellys® Evolution homogenizer is the ideal tool to quickly grind **seeds samples under dry condition and avoiding cross-contamination** before DNA or Protein extraction. 1 to 12 prep (1g/7mL tube) can be homogenized at the same time, in less than 30sec.

Precellys® Evolution is a versatile and efficient **high-throughput** homogenizer for labs performing **GMOs testing**.

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【Precellys Evolutions を用いた GMO 検出のための種子の破砕 (ヒマワリ、カシューナッツ、胡椒、コーヒー豆、亜麻種子、毛茛小豆)】

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