

PRACTICE ABSTRACT n° 44

Co-malaxation of olives with ginger powder

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To produce virgin olive oils, **olives** (good quality picked fruits, stored in small, perforated boxes in a cool room for a maximum of 48 hours before processing) are **washed and milled to obtain the olive paste**. Next, the olive paste is kneaded (**malaxation phase**) and **centrifuged** to separate the olive oil from water and solids. The **temperature** is a key factor during the milling process; it affects both quality and yield. Temperatures below 30°C can be considered a good compromise between the oil yield and minor compounds enrichment (in terms of phenolic and volatile molecules). Also, **centrifugation systems** could impact phenolic content, usually higher in oils produced with a **two-phase decanter** (in comparison with a three-phase decanter in which water is added in significant amount to olive paste producing a loss of phenolic polar compounds in water). Nowadays, oil clarification is generally carried out by vertical centrifugation or/and natural settling (to remove suspended particles and impurities). Then, the virgin olive oil remains cloudy due to emulsion dispersed as microdroplets. **Filtration** is performed to separate the micro-emulsion.



The objective is the **production of a flavoured olive oil by using ginger powder in a sustainable view**.

Lab scale



1%: 1 kg olives + 10 g ginger powder

*Other concentration percentages have been studied:
1.5% 1 kg olives + 15 g ginger powder
3%: 1 kg olives + 30 g ginger powder

Small scale mill



Industrial scale



1%: 100 kg olives + 1 Kg ginger powder

*Other concentration percentages have been studied:
1.5% 100 kg olives + 1.5 Kg ginger powder
2%: 100 kg olives + 2 Kg ginger powder

Malaxing phase: two phase decanter
60 min at ~ 29°C



Centrifugation



Decantation

Supplement clarification (filtration)

