

# [The sufficient for the dehydration of either the](https://assignbuster.com/the-sufficient-for-the-dehydration-of-either-the/)

The same sunflower oil usedfor the bleaching test was heated at 180 ? C, under vacuum, to simulate theprocess of deodorization. There were no significant differences between thetrienes and dienes concentrations before and after deodorization, indicating thatheating at 180 °C for 1 h was a condition not sufficient for the dehydration ofeither the hydroxysterols or sterols. Moreover, recoveries of thehydroxysterols were quantitative with no decomposition reactions, whereas therecovery of 7-keto-?-sitosterol was ~80%, similar to the recoveries obtained afterbleaching. The authors concluded that dehydration of the hydroxysterols wouldoccur at higher temperatures (135). Effect of chemical interesterificationof a blend of refined olive oil and palm stearin on POP content has beeninvestigated. Generally, chemical interesterification had no effects on the POPcontent of the starting oil blend.

These results show that processing ofvegetable oils at the temperature used for interesterification (90–120 ? C), along with catalysis and other steps to produce interesterified fats, does notgenerate POP (113). The issue of authenticity is becomingincreasingly important in vegetable oils. Adulteration is generally motivatedby the maximizing benefit by replacing an expensive vegetable oil with acheaper one (162). To detect edible oils and fats adulteration, it is possible to use both major andminor components as detection tool. Since each oil and fat may have an especialcomponent at a known level, their presence and amounts should be considered asa detection tool. The sterol profile can be used as a means of differentiatingbetween vegetable oils or detecting possible adulteration (18, 163). In addition, it is even possibleto determine the geographical origins of olive oils using minor constituents, such as cycloartenol and tocopherols (164).

Hazelnut oil is used to adulterate oliveoil due to its similar composition of triacylglycerols, fatty acids and majorsterols (24, 165, 166). However, hazelnut oils have lowercontents of ? 5-avenasterol but higher levels of ? 7-stigmastenolthan olive oils (167). Some esterified 4-desmethyl sterols (campesterol, ? 7-stigmastenoland ? 7-avenasterol) have been used to detect olive oil adulterationwith hazelnut oil using the Mariani ratio (RMAR1). Fornon-adulterated olive oil, RMAR is not more than 1.

This method canbe used to detect adulteration at a level of 10% (168, 169).