

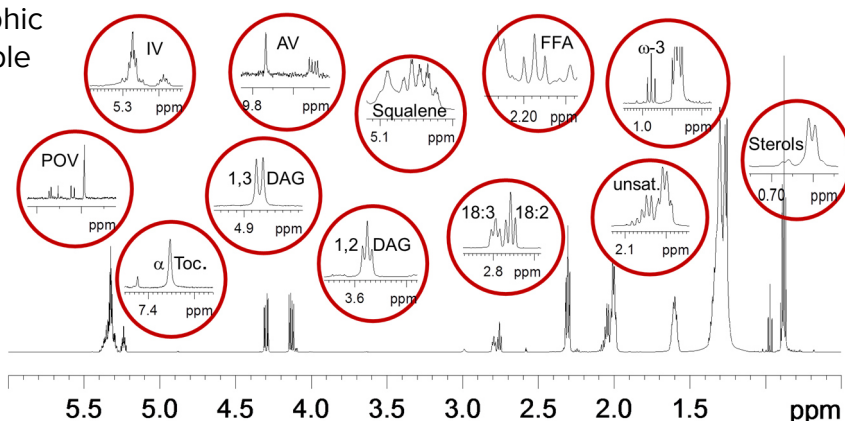
Holistic Control of Edible Oils by NMR Analysis

¹H-NMR spectroscopy offers a **fast, accurate, and comprehensive alternative** to chromatographic and volumetric techniques, analyzing multiple quality parameters in **one single run**.

What we analyze:

- **Free fatty acids**
 - Indicator of oil freshness and quality
- **Iodine, peroxide & anisidine values**
 - Key oxidation and stability markers
- **Diglycerides (DAG) & triglyceride (TAG) composition**
 - Essential for authenticity verification
- **Omega-3 fatty acids, sterols & tocopherols**
 - Nutritional profile assessment
- **Characteristic markers** – e.g. squalene in olive oil, thymoquinone in black seed oil.

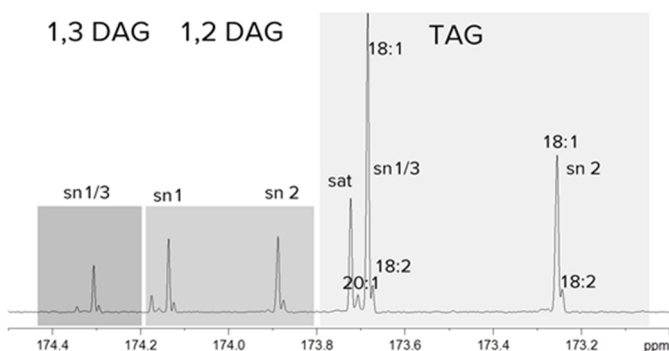
¹H-NMR spectrum of olive oil.



Over 10 Quality Parameters
in Just 5 Minutes

Why Choose ¹H-NMR Over Traditional Methods?

- ✓ **Simultaneous multi-parameter analysis**
 - No need for multiple tests
- ✓ **No additional sample preparation**
 - Direct measurement of 200 mg of sample
- ✓ **Faster results**
 - Complete analysis in just 5 minutes
- ✓ **Higher accuracy & reproducibility**
 - No reliance on multiple analytical steps
- ✓ **Cost-effective & environmentally friendly**
 - Reduces chemical and solvent usage



¹³C-NMR spectrum, assignment of DAG and TAG in sn 1/3- and sn-2-position.

Advanced ¹³C-NMR for Structural Analysis

Additional ¹³C-NMR spectroscopy provides in-depth insights into the **position of saturated, mono-, and polyunsaturated fatty acids** in TAGs, offering a comprehensive oil characterization.

Contact us

