

Extra Virgin Olive Oil Standards

Chemical Parameters	Definition	What is Measured	IOOC Extra Virgin Olive Oil	USDA – U.S. Extra Virgin Olive Oil	COOC California Extra Virgin Olive Oil	Australian Standards Extra Virgin Olive Oil	UP Standard
Free Fatty Acid	Free Fatty Acids are formed due to breakdown of the triacylglycerols in oils during extraction. Fatty acids are "free" when they are no longer bound to any other molecules.	An elevated level of FFA can indicate poor quality or mishandled fruit, too much time between harvesting and extraction, poor storage and/or high temperature during extraction.	≤ 0.8	≤ 0.8	≤ 0.5	≤ 0.8	≤ 0.3
Peroxide Value	Peroxides are primary oxidation products that are formed when oils are exposed to oxygen causing defective flavors and odors	Primary measurement of rancidity in oil. Higher peroxide levels indicate oxidized and/or poor quality oil & give an idea of the freshness & storage conditions.	≤ 20	≤ 20	≤ 20	≤ 20	≤ 9
Phenolic Content	Phenols are healthful anti-oxidant substances in olive oil which aid in slowing down the natural oxidative processes.	Phenolic content decreases over time and is an indicator of freshness, with higher amounts improving shelf-life and oxidative stability.	n/a	n/a	n/a	n/a	≥ 130
Oleic Acid (C18:1)	The major fatty acid in olive oil triacylglycerols is Oleic acid making up 55 to 85% of olive oil	The higher the oleic acid monounsaturated fat content translates to increased durability and shelf-life.	55.0 – 83.0	55.0 – 83.0	n/a	53.0 - 85.0	≥ 65
DAG	Fresh olive oil has a much higher proportion of 1,2-diacylglycerols to Total diacylglycerols while olive oil extracted from poor quality fruits and refined oils have a higher level of 1,3-diacylglycerols	The ratio of 1,2-diacylglycerols to the Total diacylglycerols are a useful indicator of fruit quality and acts as a snapshot of olive oil freshness. Low values can also indicate oxidized oil & sensory defects.	n/a	n/a	n/a	≤ 17	≥ *90
PPP	Upon thermal degradation of olive oil, chlorophyll pigments break down to pheophytins and then to pyropheophytins	The ratio of pyropheophytins to the total pheophytins is useful for distinguishing fresh olive oil from soft column refined, deodorized, or backblended oils.	n/a	n/a	n/a	≥ 35	≤ 5