

## What to Look For In a Quality Oil

There are certain quality parameters that should be tested when manufacturing high quality fats and oils. These parameters should be tested by a third party laboratory and recorded on a certificate of analysis to prove that the oil meets industry standards for purity and quality. The following are quality parameters that should be measured.

**Peroxide value** is tested as an indicator of oil freshness and quality. When the double bonds of unsaturated fats become oxidized, peroxides are among the oxidation products formed. High peroxide values are an indicator of oxidation and the greater the peroxide value, the more oxidized the oil has become. Acceptable levels for plant oils are below 10 meq/kg (measured in milli equivalents per kilogram).

**AOCS Official Method Cd 8-53**

**Acid value** is a measure of the free fatty acids in oil. Normally, fatty acids are found in the triglyceride form, however, during processing the fatty acids may get hydrolyzed into the free fatty acid form. The higher the acid value found, the higher the level of free fatty acids which translates into decreased oil quality. Acceptable levels should be below 4 mg KOH/g (measured in potassium hydroxide per gram).

**AOCS Official Method Cd 3a-63**

**p-Anisidine value** is an indicator of secondary oxidation products, including ketones and aldehydes that negatively affect oil quality. High anisidine levels usually indicate harsh or excessive processing. For plant-based oils, industry guidelines/recommendations for anisidine levels do not exist; however, some suppliers will test for anisidine as a “double check” for oxidation even though peroxide may have already been tested. Acceptable levels are generally zero to five.

**AOCS Official Method Cd 18-90**

**Heavy metals** are naturally occurring elements that are present throughout the environment and in plants and animals. In excess, these heavy metals can have potentially harmful health effects. Acceptable levels for metals such as lead, mercury, cadmium and arsenic in plant oils should be below 10 ppm (measured in parts per million).

**ICP Method (inductively coupled plasma)**

**Iodine value** is an index of the number of double bonds in a fat. It is a term that can quantify the degree of unsaturation of a fat. A high iodine value indicates high unsaturation. Iodine value is reported in terms of the grams of iodine that will react with 100 g of fat or oil under specified conditions.

**AOCS Official Method Tg 1a-64**



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