

# NIR-report Olive oil Screening

Date/ Datum  
Your sign/ Ihr Zeichen  
Packing/ Verpackung  
Our sign/ Unser Zeichen  
Origin/ Ursprungsangabe  
Date of analysis/ Tag der Untersuchung

23.11.2021  
Sizilien; kaltgepresst; Ernte: 21.10.2021  
150ml Glasflasche  
2021-5891  
Italien  
23.11.2021

Flavor Profile/ Aroma-Profil (measured by NIRS)	
Fruitiness/ Fruchtigkeit (Range 0-10) *According COI -2020	5,5
Bitterness/ Bitternote (Range 0-10)	3,1
Pungency/ Schärfe (Range 0-10)	3,6
Harmony/ Harmonie (Range 0-10)	8,0
Green (Intensity)/ Grün	100 %
Ripe (Intensity)/ Reif	0 %
Probability of occurring <b>sensory</b> defects/ Wahrscheinlichkeit des Auftretens sensorischer Defekte	LOW
Probability of <b>fermentative</b> defects/ Wahrscheinlichkeit des Auftretens fermentativer Fehler	
Probability of <b>oxidative</b> defects/ Wahrscheinlichkeit des Auftretens oxidativer Fehler	
Detection of Adulterated Olive Oil	
Probability of detecting adulterated olive oil	LOW
Probability of deodorisation (unpermitted thermal treatment (70°C- 130 °C) or addition of soft deodorized oils	
Probability of blending extra virgin olive oil with refined vegetable oil, refined olive oil or pomace oils	
Quality/ Qualität (measured by NIRS)	
Free Fatty Acids/ freie Fettsäuren (FFA) (%)	0,24
Peroxide Value/ Peroxidzahl (meq O2/kg)	12,4
Spectrometry K232-Value/ K232	1,90
Spectrometry K270-Value/ K270	0,13
Pyropheophytins/ Pyropheophytine (%)	1,7
1,2-Diglycerides/ 1,2 Diglyceride (%)	80,8
Anisidine Value/ Anisidinzahl	6,8
Alkyl Esters/ Alkylester (mg/kg)	103
Total Sterol Content/ Sterolgehalt (mg/kg)	1720
Phenolics (Tyrosol)/ Phenole (mg/kg)	245
Fatty acid composition/ Fettsäurezusammensetzung, % (NIRS); extracted	
Mono-unsaturated fatty acids/ einfach ungesättigte Fettsäuren	69,6
Poly-unsaturated fatty acids/ mehrfach ungesättigte Fettsäuren	11,3
Saturated fatty acids/ gesättigte Fettsäuren	19,1
Iodine Value/ Jodzahl	81,7
<b>Classification/ Klassifizierung</b>	<b>Extra Virgin</b>
<b>Geographical origin (region)/ Ursprungsland* (Region)</b>	<b>Italien (Sizilien)</b>
<b>Cultivar/ Sorte</b>	<b>Biancolilla Carolea Tonda Iblea Nocellara Etnea</b>
Age/ Alter (months/ Monate; biological age/ Biolog. Alter - Storage at dark/ Dunkle Lagerung, 15-18 °C)	3
Remaining storage life at 20°C/ Rest-MHD (months/ Monate) (if no defects/ wenn kein Defekt)	17
<b>Overall quality - Range 1 (=very bad) to 8 (=Premium) (if no defects!!!) Qualitätseinstufung - Skala 1(=sehr schlecht) bis 8 (Premium) (wenn kein Defekt!!!)</b>	<b>Premium quality (8)</b>

Without Correct on U \* Uncertainty of the result/ Messunsicherheit

±0,17 Note: Some panels reduce the intensities of  
±0,12 fruitiness, if a defect occurs. Harmony is set  
±0,12 to zero. Medium fruitiness: 3,0 - 6,0 and  
±0,34 Intense fruitiness: > 6,0

**Green**

fusty, MS, musty, winey, grubby, frostbitten  
rancid, burnt, rough

±0,05 Legal Limit: 0,8 %  
±2,0 Legal Limit: 20 meq O2/kg  
±0,17 Legal Limit: 2,5  
±0,01 Legal Limit: 0,22  
±0,5 Should be lower than 12 %  
±2,5 Should be higher than 45 %  
±0,5  
±7,9 Legal Limit: 150 mg/kg  
±5,0 Legal Limit - Minimum 1000 mg/kg  
±24 Health Claim: >250 mg/kg\*  
\*EU 2017/2373 (14.12.2017)

±0,7  
±0,6  
±0,5  
±0,3

±0,6

**Range of quality/ Qualitätsskala:**  
Very bad quality/ sehr schlecht  
Low quality/ niedrige Qualität  
Low standard quality/ untere Standard  
Qualität Standard/ Standard/ Standard  
Qualität  
Good quality/ Gute Qualität  
Very good quality/ Sehr gute Qualität  
High quality (excellent)/ Hohe Qualität  
Premium quality/ Premiumqualität

Remarks: All results of this report are based on the statistical evaluation of the NIRS measurements. In general these results correlate well with the corresponding laboratory values. It may happen that they are not identical or equal.  
The results are only representative for the analyzed sample. This report has been automatically generated.  
Die Resultate sind nur repräsentativ für die gemessene Probe. Der Bericht wurde automatisch generiert.  
(Software Version 20-10-2021; Validation)

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**References/ Referenzen:**

I.Willenberg, B.-Matthäus, C.Gertz, A New Statistical Approach to Describe the Quality of Extra Virgin Olive Oils Using Near Infrared Spectroscopy (NIR) and Traditional Analytical Parameters, Eur. J. Lipid Sci. Technol. 2018, 1800361

C.Gertz, A.Gertz, B.Matthäus, I.Willenberg A Systematic Chemometric Approach to Identify the Geographical Origin of Olive Oils, Eur. J. Lipid Sci. Technol. 2019, Eur. J. Lipid Sci. Technol. 2019, 1900281

C.Gertz, B.Matthäus, I.Willenberg, Detection of Adulterated Extra Virgin Olive Oil Using Near Infrared Spectroscopy (NIR) and Traditional Analytical Parameters, Eur. J. Lipid Sci. Technol. 2020.

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