

Deterioration of Bleachability Index (DOBI) Analysis

A spectrophotometer can easily determine the DOBI of palm oil by measuring the absorbance of a test solution at 446 nm and 269 nm and then applying the following equation:

$$\text{DOBI} = A_{446} / A_{269}$$

The palm oil grade can then be determined using the ranges shown in table

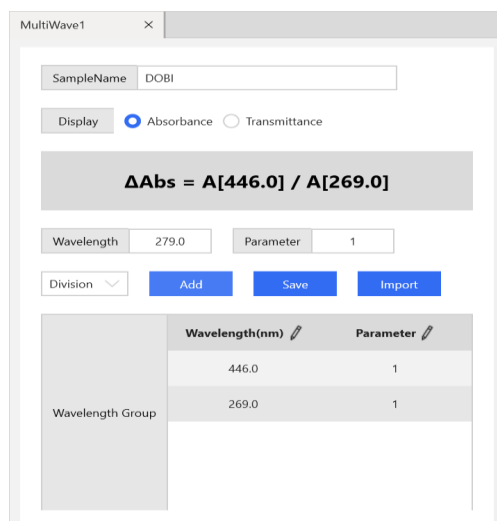
DOBI value	Grade
1.68-2.30	Poor
2.31-1.92	Fair
2.93-3.24	Good
>3.24	Excellent





Instrument: UV 600E Spectrophotometer
Wavelength range: 190 – 1100 nm
Spectral bandwidth: 1.8 nm

1. Open  in computer (**UVProfessional**), then select  and add the wavelengths 446 nm and 269 nm using the division formula.



MultiWave1

SampleName: DOBI

Display: ☒ Absorbance ☐ Transmittance

$\Delta Abs = A[446.0] / A[269.0]$

Wavelength: 279.0 Parameter: 1

Division: Add Save Import

Wavelength Group	Wavelength(nm)	Parameter
	446.0	1
	269.0	1

2. Remove the blank value by placing a blank cuvette into the holder and pressing  (ZERO).
3. Insert the palm oil sample into the cuvette in the holder, then press  Start measure.
4. The result will be an absorbance value obtained by dividing according to the equation, which represents the DOBI value.

	SampleName	Abs [446.0nm]	Abs [269.0nm]	ΔAbs	Transmittance(%T)	TestTime
1	DOBI	1.217	0.787	1.546	2.8	2025/07/23 14:38
2	DOBI	1.202	0.766	1.569	2.7	2025/07/23 14:39
3	DOBI	1.212	0.777	1.560	2.8	2025/07/23 14:42