

# Olive Maturity Index

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Not all the fruit in an orchard, or even on the same tree, will ripen and turn color at the exact same time, so a maturity index was developed to help producers numerically categorize their fruit's maturity level. A maturity index number allows producers to evaluate their varieties under their own specific growing conditions over a number of years. This helps determine when each variety should be harvested in order to obtain the oil style the producer wants. If a particularly good oil was produced, a maturity index number can help the grower repeat that oil style in successive years by harvesting at the same fruit maturity index each time. An oil's flavor is not due to fruit maturity alone, and the maturity index is not perfect, but it is a simple way of documenting the level of fruit maturity from year to year.

This is how to determine the maturity index (MI):

- Take a random sample of about 2 pounds of fruit from several trees of the same variety in the area where harvest is imminent. The fruit should be selected from high and low in the trees and from all sides. Collect all the fruit from a branch here and there rather than individual fruits; this helps make the sample more random.
- Randomly select 100 fruit out of the sample bucket. Repeat 3-10 times until all the fruit is gone.
- Separate each 100 fruit sample into eight color categories based on the color chart below:
  - 0 = Skin color deep green – fruit hard
  - 1 = Skin color yellow-green – fruit starting to soften
  - 2 = Skin with < half the fruit surface turning red, purple, or black
  - 3 = Skin color with > half the surface turning red, purple, or black
  - 4 = Skin color all purple or black with all white or green flesh
  - 5 = Skin color all purple or black with < half the flesh turning purple
  - 6 = Skin color all purple or black with > half the flesh turning purple
  - 7 = Skin color all purple or black with all the flesh purple to the pit
- Multiply the number of fruits in each color category by the number of that color category (0 to 7).
- Add all the numbers together and divide by 100

$$MI = \frac{A \times 0 + B \times 1 + C \times 2 + D \times 3 + E \times 4 + F \times 5 + G \times 6 + H \times 7}{100}$$

*Letters (A-H) = number of fruit in each category*

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The fruit in this photo breaks down as follows:

- A: 5 green x 0 = 0
- B: 20 yellow-green x 1 = 20
- C: 20 < ½ color x 2 = 40
- D: 28 > ½ color x 3 = 84
- E: 12 black/white flesh x 4 = 48
- F: 8 black/< ½ purple flesh x 5 = 40
- G: 5 black/> ½ purple flesh x 6 = 30
- H: 2 black flesh to pit x 7 = 14

$$0 + 20 + 40 + 84 + 48 + 40 + 30 + 14 = 276$$

$$\frac{276}{100} = 2.76 \text{ Maturity Index}$$



## MATURITY INDEX



0

hard green



1

yellow-green



2

color < ½



3

color > ½



4

white



5

purple < ½



6

purple > ½



7

purple to pit