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# Organic Plant & Soil Pro 2™ Picual Olives

## Picual Olives with Organic Plant & Soil Pro 2™ vs. the control group

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# Picual Olives Results

Olive groves cultivated the "Picual" variety in Almería, Spain. They were fertilized with Organic Plant & Soil Pro 2 to produce olive oil. After harvest, results were compared with neighboring groves using top inputs approved for organic production.

The olives treated with Organic Plant & Soil Pro 2 showed a significant improvement in both nutritional value and organoleptic qualities compared to those that did not use the product.

Picual Olives with Organic Plant & Soil Pro 2 have:

- Lower peroxide value
- Higher antioxidant capacity
- Higher content of total tocopherols
- Higher content of polyphenols in oil
- Higher yield

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# Conclusions

## Lower peroxide value

Olive groves fertilized with Organic Plant & Soil Pro 2 showed a significantly lower peroxide value, about 34% lower than groves using conventional fertilization. Peroxide value reflects the initial oxidation state of the oil and the degradation of natural antioxidants such as polyphenols and tocopherols (vitamin E). Because peroxide value is inversely related to antioxidant capacity, a lower value indicates higher antioxidant levels. This substantial reduction suggests that olives produced with Organic Plant & Soil Pro 2 are of significantly higher quality than those grown using conventional methods.

## Higher antioxidant capacity

In the olives trees fertilized with Organic Plant & Soil Pro 2 the antioxidant capacity has risen more than 1% given that this is essential to diminish the oxidative stress and the aging of organism cells.

## Higher content of total tocopherols

The antioxidant capacity is directly influenced by a higher content of total tocopherols (vitamin E) in the olives fertilized with Organic Plant & Soil Pro 2. The tocopherols are important natural antioxidant agents, that provide stability to the oil. In addition, the higher content of tocopherols provides biological benefits as it is an extremely important antioxidant.

## Higher content of polyphenols in oil

Also, to be highlighted is how the use of Organic Plant & Soil Pro 2 has favored the rise in polyphenol content in the olive with an increase of 6.47% vs. conventional fertilization.

The polyphenols also add a great benefit towards human health as they shown to decrease cholesterol oxidation and increase, what is called "good" cholesterol (HDL cholesterol).

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# Conclusions *(continued)*

## Higher fat content

Olives grown with Organic Plant & Soil Pro 2 have a higher fat content, together with lower humidity, which generally suggests a higher ripeness vs. olives that used conventional fertilization programs. The use of Organic Plant & Soil Pro 2 enables the grower to obtain oils with improved nutritional qualities in compared to the conventional fertilization.

## Higher yield

The use of Organic Plant & Soil Pro 2 produced larger fruit, with a 32% increase in equatorial diameter. (Photo 1) Picual Olives from treated trees also showed a higher fat content compared to those grown without the product.

The most important parameter for farmers is the theoretical industrial yield—the kilograms of oil produced per kilogram of milled olives. Analysis confirms that the yield was increased by 6% with the use of Organic Plant & Soil Pro 2.

*Please see the summary table with the most relevant data stated in this sheet of experiences.*

**Photo 1** Comparison between the size of the olive variety. "Picual" (Olea europea) produced with Organic Plant & Soil Pro 2 (above) and the one produced in a conventional way (below).

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# COMPARATIVE ANALYSIS

## Picual Olives fertilized with Organic Plant & Soil Pro 2 vs. conventional commercial fertilizing

| Fertilizer Used | Analyzed Parameter | Result | Unit | Difference (%) |
|---|---|---|---|---|
| Organic Plant & Soil Pro 2 | Peroxide value | 2.81 | meq/kg | **- 34.35** |
| Conventional | | 4.28 | | |
| Organic Plant & Soil Pro 2 | Polyphenols in oil | 957.48 | % | **+ 6.47** |
| Conventional | | 899.33 | | |
| Organic Plant & Soil Pro 2 | Antioxidant capacity | 51.58 | | **+ 1.36** |
| Conventional | | 50.89 | | |
| Organic Plant & Soil Pro 2 | Total tocopherols | 402.06 | mg/kg | **+ 1.37** |
| Conventional | | 396.63 | | |
| Organic Plant & Soil Pro 2 | Fat | 14.17 | % | **+ 5.58** |
| Conventional | | 13.99 | | |
| Organic Plant & Soil Pro 2 | Theoretical industrial yield | 12.07 | % | **+ 6.19** |
| Conventional | | 11.37 | | |
| Organic Plant & Soil Pro 2 | Equatorial diameter | 16.05 | mm | **+ 32** |
| Conventional | | 21.25 | | |