

# ANALYSIS OF THE PHENOLIC COMPOUNDS OF DIFFERENT PEPPER VARIETIES. EFFECT OF COOKING

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## INTRODUCTION:

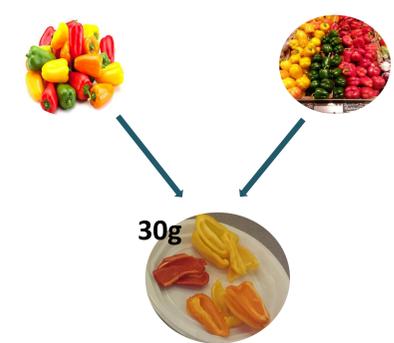
Peppers have a high amount of phenolic compounds, especially flavonoids. It is well known the high thermal sensitivity of these compounds, and the difficulties at the time of the incorporation of these bioactive compounds of pepper in our body. Therefore, it was hypothesized that the method is the best to maintain the integrity of these compounds.

## OBJETIVE:

The objective was analyze the concentration of flavonols of different pepper varieties of different sizes and colors, (red, green and yellow and large and small size), and observe the effect of different cooking techniques (boiled, grilled, steam and microwave).

## MATERIALES Y MÉTODOS:

### SAMPLE PREPARING

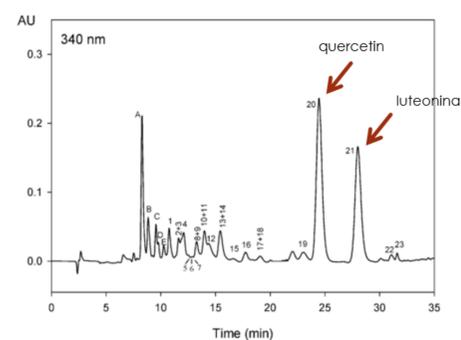


1. MUESTRA FRESCO.
2. VAPOR: Mini (20 min) Grandes (25 min)
3. PLANCHA: sartén 160°C + 2 ml aceite. Aprox 20 min.
4. MICROONDAS: 5 min a 567W
5. HERVIDO: agua > 100°C Mini (20 min) Grandes (25 min)

muestras de pimiento se procesaron por triplicado

### DETERMINATION OF PHENOLIC COMPOUNDS

The determination of the compounds was carried out by high performance liquid chromatography (HPLC) at 360 nm. Before HPLC analysis, samples were filtered through a 0.45 µm filter (type Millex HV13, Millipore Corp, Bedford, MA)



HOMOGENEIZACIÓN  
24.000 rpm, 60 segundos.



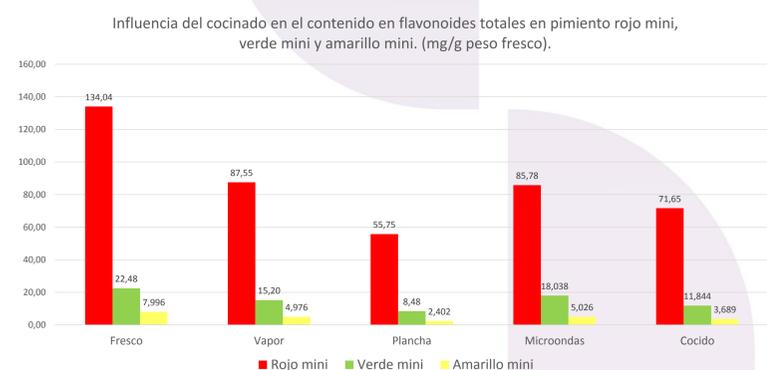
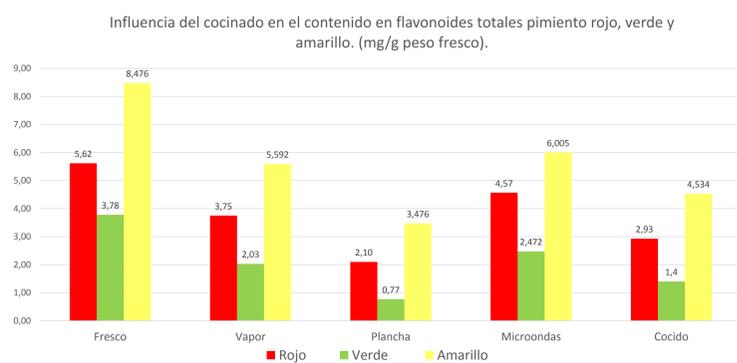
ADICION 10 mL de EXTRACTANTE  
(70% metanol-30% agua)



REFRIGERACIÓN 24h a 5°C, → CENTRIFUGACIÓN 400rpm, 5 minutos, → FILTRADO SOBRENADANTE, filtros de 0.45 µm.



## RESULTADOS:



## RESULTS AND DISCUSSION:

The contents in total phenolic compounds of the samples of small fresh pepper have values significantly higher than the large ones, except the yellow peppers, which do not show significant differences. The concentration of total phenolic compounds is higher in small red peppers and larger green peppers have a higher amount of phenolic compounds.

The phenolic compounds that present higher values in fresh pepper samples are the quercetin derivatives: quercetin glucoside and quercetin rhamnoside, except in the case of mini green peppers that, on the contrary, have higher values of luteonin.

The samples of red peppers have values of phenolic compounds significantly higher than green peppers because the concentration of bioactive compounds with antioxidant capacity increases with the degree of fruit ripening. Higher losses are observed in the peppers cooked on the grill, followed by boiling in aqueous medium, steam and finally the microwave. These results are justified by the temperatures reached and / or the degree of leaching produced by the contact with the cooking water.

## RELATED REFERENCE:

Marín, A., Ferreres, F., Tomás-Barberán, F. A., & Gil, M. I. (2004). Characterization and quantitation of antioxidant constituents of sweet pepper (*Capsicum annuum* L.). *Journal of agricultural and food chemistry*, 52(12), 3861-3869.