



CHANGE IN TOTAL PHENOLIC COMPOUNDS IN VANILLA PODS (*Vanilla planifolia*; ORCHIDACEAE), DURING THE TRADITIONAL CURING REALIZED IN MEXICO

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Introduction. Mexican vanilla is appreciated for its aromatic qualities (1). The flavor and aroma are developed during the curing, as a result of a series of chemical and biochemical changes (2). In Mexico, the curing of vanilla is performed in the traditional manner. It has been reported that natural extracts exert antioxidant activities (3), which provides to these products a high commercial potential additionally to their aromatic characteristics. The aim of this work was to quantify the present phenolic compounds in vanilla pods during the traditional curing process carried out in Mexico.

Methods. A tour in the region of Totonacapan, Mexico, was performed monitoring the traditional curing of vanilla pods in Papantla de Olarte, Veracruz. The extraction of phenolic compounds was performed by means of the Abdel-Aal and Hucl method and the total phenolic compounds were quantified by Folin-Ciocalteu method (4).

Results. The curing process practiced in Papantla de Olarte, Veracruz, Mexico, including pod selection, killing by hot water immersion (90°C, 6-7 seconds), sweating, sun drying, conditioning and vacuum packaging (Figure 1).



Fig.1 Vanilla pods curing process. Papantla de Olarte, Veracruz, México.

Total phenolic concentrations in vanilla pods showed a significant difference ($p \leq 0.05$) in each stage of the traditional curing process, total phenolic concentration varied between the set off and completion of the process, showing 582 ± 12.3 mg gallic acid equivalents/100g sample in mature green vanilla pods (GV) and 1923 ± 23.06 mg gallic acid equivalents/100g sample in the

conditioning stage (C), while in the final stage a slight increase of 1341 mg gallic acid equivalents/100g sample was observed (Table 1).

Table 1. Total phenolic compounds in vanilla pods during the traditional curing process carried out in Mexico.

Traditional curing stages	Total phenolic compounds*
GV	582 ± 12.03^a
KV	865 ± 35.53^b
1 SS	1039 ± 38.79^c
5 SS	1141 ± 17.18^d
10 SS	2460 ± 37.11^g
15 SS	3128 ± 34.17^h
20 SS	2367 ± 21.19^i
C	1923 ± 23.06^e

* mg gallic acid equivalents/100 g sample (wb). a-h different letters in the same column indicate statistical difference ($P < 0.05$). The average value of five repetitions \pm S.D.

During 1 sunning-sweating cycles (1 SS) and until 15 sunning-sweating cycles (15 SS) the total phenolic concentrations present in vanilla pods showed a sharp increase, exhibiting at the final stage the highest concentration during the complete process (3128 ± 34.17 mg acid gallic equivalents/100g sample).

Conclusions. The knowledge provided about the content of total phenolic compounds presented in vanilla pods during the traditional curing process, offers essential scientific bases to understand the contribution of these compounds to the antioxidant activity presented in vanilla pods.

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