EFFECTS OF TOCOPHEROL ADDED TO PAPRIKA UPON COLOUR DURING CHORIZO PROCESSING

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SUMMARY

Recentely some "chorizos" showed fading during its processing and commercialization. Three "chorizo" batches were made with different tocopherol concentrations added to paprika (0, 100, 500 ppm). CIEL*a*b* during whole process were analized. The different tocopherol concentrations added to paprika did not affect colour Parameters evolution during the "Chorizo" process.

INTRODUCTION

"Chorizo" is the most popular Spanish dry fermented sausage. In its elaboration minced meat (pork and beef) With additives and spices are used. The most important stages in its processing are: fermentation and ripening. Temperature, relative humidity and air velocity in during stages are the principal parameters that affect the "Chorizo " quality. The most important spices used in this sausage is Paprika (Capsicum annum), which gives the special colour and flavour of "chorizo". The colour of this spice depends on its carotene content. Recentely some "chorizos" showed fading during its processing and commercialization. This effect it is not well known. The paprika industry, in order to avoid this problem, added natural antioxidants. The protective tocopherol effect on color retention during storage of paprika was demonstrated (Figueroa et al., 1993), but this effect on Paprika colour stability during the different "chorizo" processing stages was not studied.

The aim of this work was to study the effect on "chorizo" colour propierties of different tocopherol concentrations added to paprika during "chorizo" processing.

MATERIALS AND METHODS

Three "chorizo" batches (A,B,C), with 50 units each, in a meat pilot plant and according to traditional practice Were made. The "chorizo" composition was: 65.3 % lean pork meat, 27.9 % pork back fat, 2.14 % salt, 1.4 % ^{stnoked} paprika, 0.93 % sweet paprika, 0.93 % dextrose, 0.93 % lactose, 0.3 % phosphates, 0.06 % sodium shite glutamate, 0.047 % sodium ascorbate, 0.05 % marjoram, 0.03 % dehydrate garlic, 0.02 % potassium nitrate, 0.01 %sodium nitrite, 0.01 % white pepper, 0.01 % potassium sorbate. Whole dried and powdered paprika Was used. Commercial tocopherol with 15.7% richness was added. Each batch, with different tocopherol concentrations added to paprika was used: A without tocopherol, B with 100 ppm and C with 500 ppm. Meat and fat were ground and thoroughly mixed with the other ingredients in a bowl-chopper. Artificial casings artificial casings with 65 mm of diameter were filled with the mix. The weight of each "chorizo" was ^{aproximately 500} gr. The fermentation conditions were: 2 days, at 20-22 °C and 90-95 % RH, and the ripening conditions were: 2 days at 20-22 °C and 90-95 % RH, and the ripening conditions were at 1 b to be at 100 months. ^{conditions} were: 19 days, at 12-14 °C and 75-80 % RH. From each batch, at different times, the samples were collected are were: 19 days, at 12-14 °C and 75-80 % RH. collected: 0, 24, 36, 42, 48, 54 hrs.(fermentation) and 5, 8, 11, 12, 13, 14, 18, 21 days (ripening) after the beginn: beginning of the "chorizo" process.

Physico-chemical parameters were evaluated by the following standard methods: pH (Ministerio de Sanidad y Consume) moisture content (ISO/R1442), Consumo), aw (Novasina thermoconstanter TH2, work temperature 25°C), moisture content (ISO/R1442), residual to a content (ISO/R1442), residual nitrites (ISO/DIS 2918), %lactic acid (AOAC 1504).

The colour parameters under study: CIE L* a* b* (10°, D 65). L* (lightness), a* (redness), b* (yellowness), C* (cho C* (chroma), h° (hue) were measured by a Minolta CM1000 R Spectrophotometer

RESULTS AND DISCUSSIONS

The results of the parameters under study are reported in tables 1,2 and 3.

Significant statistical differences (P<0.01) for all parameters were not found between "Chorizos" mades with different tocopherol concentrations added to paprika.

Whole fermentation phase lightness was constant, but during ripening it increased in its values. This is in agreement with other works about "Chorizo" (Pagán et al. 1992). This increase can be due to transformation meat pigments (Palombo et al. 1989). The evolution of colour tone can be observed in figure 1. This colour tone at the beginning of the process is similar to that obtained for paprika (Figueroa et al. 1993). While at the end of the process the values are similar to that obtained for other dry-cured products (Ruiz. et al. 1994; Sánchez. et al. 1994). The redness (figure 2) and yellowness decreased during the whole "Chorizo" process. This behaviour for b* is similar to other dry-cured products (Ruiz. et al. 1994, Gago. et al. 1992). The highest a* and b* values found in "Chorizo" can be due to paprika pigments. Hue values during the fermentation phase are near by orange (Instituto de Racionalización, 1981) and they are similar to those for paprika (Figueroa et al. 1993). Ripening affects hue, decreasing its near by red values like another dry-cured products (Gago. et al. 1992, Ruiz. et al. 1994, Sánchez. et al. 1992). Ruiz. et al. 1994, Sánchez. et al. 1993, Ruiz. et al. 1994, Sánchez. et al. 1994).

CONCLUSIONS

The different tocopherol concentrations added to paprika did not affect colour parameters evolution during the "Chorizo" process. Colour tone changes from paprika to dry-cured meat product values. Hue reduces its values close to orange to red.

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