Effects of sodium ascorbate on lamb vertebral marrow and longissimus colour

Practical importance
Surface discolouration (including both muscle and bone marrow) of lamb loin chops packaged in PVC can be minimised by topical application of 1.0 and 1.5% sodium ascorbate. Reducing agents can function as both an antioxidant and a preservative. Therefore, the authors recommend that sodium ascorbate should be given to concentration when selecting a topical ascorbate treatment. Minimising oxidation of both myoglobin and haemoglobin will improve the colour stability of bone-in lamb chops.

Research & Development
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Table: Effects of topical sodium ascorbate solutions on the surface whiteness (I*) of lamb bone- in loin chops over-wrapped with PVC and stored at 2°C

<table>
<thead>
<tr>
<th>Storage Time (d)</th>
<th>0</th>
<th>3</th>
<th>5</th>
<th>7</th>
<th>10</th>
<th>14</th>
<th>17</th>
</tr>
</thead>
<tbody>
<tr>
<td>Control (1)</td>
<td>29.0 ± 2.64</td>
<td>25.9 ± 2.25</td>
<td>22.6 ± 2.24</td>
<td>20.6 ± 2.54</td>
<td>18.5 ± 2.23</td>
<td>15.6 ± 2.30</td>
<td>13.2 ± 0.58</td>
</tr>
<tr>
<td>Ascorbate (1%)</td>
<td>29.0 ± 2.64</td>
<td>25.9 ± 2.25</td>
<td>22.6 ± 2.24</td>
<td>20.6 ± 2.54</td>
<td>18.5 ± 2.23</td>
<td>15.6 ± 2.30</td>
<td>13.2 ± 0.58</td>
</tr>
<tr>
<td>Ascorbate (1.5%)</td>
<td>29.0 ± 2.64</td>
<td>25.9 ± 2.25</td>
<td>22.6 ± 2.24</td>
<td>20.6 ± 2.54</td>
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</table>

Authors’ addresses
K. Mencinger (PhD) and M. Durovic (PhD) from the Research and Development Institute, ZGUD-UM, Ljubljana, Slovenia, analysed the effects of sodium ascorbate on lamb bone-in loin chops and longissimus muscle colour.

Reference

Improving quality in Iberian "Chourico Grosso" using antiochthonous startiure cultures

By M. Elias, A.C. Aguilheiro-Santos and A.V. Carnacasa

"Chourico Grosso" is a traditional and high quality Portuguese sausage made from meat of a rustic and fatty Alentejano pig breed in the south east region of Portugal. At a traditional factory, 4 batches, with 25 kg each, were prepared to produce "Chourico Grosso" using different starter cultures with 103 CFU g⁻¹ of Lactobacillus sakei and 106 CFU g⁻¹ of Staphylococcus xylosus, 2 with 109 CFU g⁻¹ of Lactobacillus sakei, 3 with 106 CFU g⁻¹ of Staphylococcus xylosus, 4 - control, not inoculated.

Using five samples from each batch of cured sausages (n=5), some chemical and physical analyses (pH, a°, chromatic coordinates L*, a* and b*), rheological tests (texture profile analysis and cutting test), sensory evaluation (colour intensity, off odour, aroma, aroma intensity, off odours, texture, tenderness, juiciness and global evaluation) and microbiological analysis (mesophbic aerobic counts, psychrotrophs, yeasts, lactic acid bacteria, Micrococccaeae, Enter-

Traditional Portuguese sausages made from raw material of Alentejano pig breed are high quality products. This quality is mostly due to the unique environmental characteristics of the products and their richness in oleic acid. In fact, fat could contain up to 56% of oleic acid, considering the total amount of free fatty acids. The production of Alentejano sausages is a small enterprise, located in the Alentejano region, south east of Portugal. In these small enterprises, procedures aren't yet efficiently controlled, which results in a wide variability in the range of products from the same producer. Thus, in order to achieve a constant quality, the use of starter cultures is recommended. The role of starter cultures mentioned in previous research works (Hogan et al., 1997, Arrieta et al., 2001, Hou et al., 2003) showed that increasing the number of mesophbic acid and sensory characteristics of "Chourico Grosso". This study is part of a pioneer and larger research work concerning the use of starter cultures in sausages from Alentejano pig breed.

Materials and methods
Sausage technology and sampling

At a traditional factory, 100 kg of meat, rich in intramuscular fat thus favourable for the production of such kind of sausages, was prepared in order to produce "Chourico Grosso" (dry-cured sausage with cylindrical shape around 5 cm diameter and about 30 cm long made with meat and intramuscular fat from Alentejano pig breed, an Iberian pig breed in Portugal). Cubic portions of meat, each one with 2.5 cm, were mixed with pimento (Cayucan anulata L) powder (4%), garlic (Allium sativum L) powder (4%), black pepper (Piper nigrum L) powder (1%), paprika (Capsicum annuum L) powder (4%), salt (2%), and spices (1%). Five batches containing each 25 kg of this sausage mixture were prepared, and inoculated with 106 CFU g⁻¹ of Lactobacillus sakei and 10⁶ CFU g⁻¹ of Staphylococcus xylosus, a second batch was inoculated with 10⁸ CFU g⁻¹ of Staphylococcus xylosus, a second batch was inoculated with 10⁶ CFU g⁻¹ of Staphylococcus xylosus.