Organic animal production implies that livestock feed should be composed of ingredients that come from organic farming, avoiding the use of certain additives and medication. We tested whether feeding a local commercial certified organic concentrate (ORG, n 11) from weaning to slaughter (41 days) affected animal performance and product quality compared with a local commercial conventional concentrate (CON, n 13). Both concentrates were based on barley, maize and soya; but they differed in the type of dietary components (i.e. in CON, maize and soya were genetically modified) and some additives, which were only present in one group (i.e. ORG contained diatomaceous earth, whereas CON included a synthetic antioxidant). A general linear model was used, with diet as the fixed factor. Animal performance, pH, meat colour and cooking losses were similar between the two groups (p>.05). Carcass conformation scores were higher ($p<.05$) with the organic feed (O to O+) compared to the CON group (P- to P), but fatness remained unchanged (-2 to +2, p>.05), according to the European carcass classification. A sensory panel of 12 trained members found ORG meat more tender ($p<.001$), juicier ($p<.01$) and with less residue ($p<.001$) than CON, but the groups did not differ in odour and flavour intensities (p>.05). Supporting the sensory results, shear force values tended ($p=.069$) to be higher for CON animals. With regard to fatty acid composition (% of total fatty acids), n-3 fatty acids were higher in ORG meat ($p<.01$), including long chain fatty acids (eicosapentaenoic and docosahexaenoic acids) and α- and γ- linolenic acids. Consequently, PUFA: SFA and n-6/n-3 ratios were higher and lower in ORG *vs* CON, respectively. In general, the organic concentrate enhanced carcass and meat texture and provided a healthier fatty acid profile of the meat. Most of the differences are thought to come from differences in the dietary components of the both commercial concentrates.

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Beef colour measurement with an RGB camera

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Spectrocolorimeters are the most commonly used instruments for measuring meat colour because they provide readings in the device independent CIE$L^*a^*b^*$ colour space which corresponds well with the colour perception by humans. These instruments, that can accurately measure colour surface of a sample uniform and rather small, cannot completely represent the surface characteristics when it is not uniform and highly textured, as in case of the meat. In recent years, digital cameras have been used to measure meat colour since they provide some advantages over a conventional colorimeter, namely, the possibility of analysing the entire surface of meat. As the digital cameras use the RGB colour model, which is a device dependent colour space, it is necessary to derive a conversion matrix to estimate CIE$L^*a^*b^*$ parameters from RGB measurements. Eighty *longissimus thoracis* steaks were cut into 5×5×4 cm samples. After blooming, the samples were photographed using a NIKON 3100 digital camera. All the images were captured under controlled conditions with a reference grayscale target, used to correct white balance. The RGB colours of meat were measured from JPEG images using ImageJ software. An area of 3.0 cm^2 at the centre of each sample was evaluated. Immediately after, the true colour of each sample was measured by a MINOLTA CM-600d spectrocolorimeter and the results were expressed in the CIE$L^*a^*b^*$ space model. The conversion of RGB colour values to $L^*a^*b^*$ values was carried out using a quadratic model which considers the influence of the square of R, G and B variables on the estimation of $L^*a^*b^*$ values. R-square, root mean square error and the mean normalized error were used for measurement of differences between the values achieved with ImageJ and the spectrocolorimeter. Moreover, the predicted colorimeter colour coordinates from digital images were compared to real colorimeter values using CIE colour difference equation (ΔE^*). The real and estimated values showed coefficients of determination of 0.67, 0.41 and 0.33 for L^*, a^*, and b^*, respectively. The root mean square error between ImageJ and spectrocolorimeter was 1.48, 1.11 and 0.80 for L^*, a^* and b^* values, respectively. The model showed an error of 1.16% and a standard deviation of 0.92. The ΔE^* was equal to 2.5. The proposed method achieves a promising performance, however the acquisition of the images need some adjustments to improve the accuracy of the model.

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