THE DIETETIC VALUE OF OSTRICH MEAT

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Background

Today the nutritional and dietetics necessity induced at research of new aliments to introduce in the daily diet. While in under-developed countries the need of survival obliges the people to use any animal or vegetal aliments, the Occidental countries show the difficulty of adaptation about no traditional aliments. The breeding of the ostrich (Struthio Camelus) is begun in the 1990 in South Africa where this animal lives in the groups thick. The ostrich meat presents important nutritional characteristics: a low content of cholesterol and lipids in general, low content of connective tissue and then it is very soft, a good rate of proteins, and finally an interesting rate of creatine and carnitine.

Objectives

For evaluation of nutritional characteristics our research is focused on analysis of lipidic and protein fractions by HPLC, GC-MS, FAB-MS, EI-MS.

Methods

Samples of ostrich meat are trited and analysed by different methods.
Total proteins determination by Kjeldhal method (AOAC, 1980).
Aminoacids determination by HPLC (Noyes, 1983) G 5 of meat finely trited are hydrolised with 50 ml of HCl 6 N. After filtration and remotion of solvent, the residue weighed g 0,3926.It is solved in 78,52 ml of HCl 0,01 N (for to obtain a solution of 50mg/10 ml) .
After purification by Dowex sulphonic column (Baumann et al, 1987) the isolated aminoacids are mixed thoroughly with 250 µl of triethylamine acetic buffer and 250 µl phenyl isothiocyanate solution in acetone and left in a closed vessel for 2 ½ h on a water bath at 25°C.The solvent is removed and the residue is taken up in 100 µl of water and 200 µl of acetic acid satured with HCl,and the resulting solution maintained 6h on a water bath at 25°C. (Jones et al, 1981; Dowing et al, 1976; Zimmermann et al, 1977). After the solvent remotion , the PTH-amino acids are analysed by HPLC (Pucci et al, 1983) using a column Ultracarb 5 µ ODS (20), solvent $NaCH_3COO/CH_3COOH$ 0,01M (pH4,8) acetonitrile (from 68 : 32 to 10 90); detector UV/VIS to wavelength of 254 nm.
GC-MS of lipidic fraction is performed on residue from Soxhlet extraction. The extraction is performed using a mixture of chloroform and methanol 90: 10 (Folch method).

Results and discussion

The meat of ostrich shows the characteristics that make it unique regard to the other meats. The composition of ash shows high concentration of K (550mg/100g), Mg (13 mg/100g), P (200mg/100g) and Fe (3,8 mg/100 g), but low concentration of Na (43 mg/100g). The value of L-carnitine (needful for the intercellular metabolism of lipids and scarce as in the fishes as in all white meats), is the higher than all meats of domestic animals. The highest value of Fe makes this meat very important for the nutrition of girls, pregnant women and for nursing. The analysis of amino acids by HPLC shows the presence of 15 essential aminoacids: glutammic acid, asparagin, serin, threonin. Glycin, glutamin, hystidin, alanin, arginin, valin lysin, prolin, phenylalanin, isoleucin , leucin. In the lipidic fraction is very small the concentration of cholesterol, while the concentration of unsaturated fatty acids is very high and specially Omega 3. Recently new researches have showed that the unsaturated acids are able to decrease the arterial pressure and to make better the arterial elasticity.

Pertinent literature

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