INTRODUCTION

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Flavour chemistry has become an important area of specialization in the last 35 years, particularly with the advent of sophisticated instrumentation and separation techniques that permitted identification of trace quantities of different materials. Interesting information on meat flavour began to appear in the early beginning of 1960. The chemistry of meat flavour being temperature dependant, more likely resembles that of coffee or bread than fruits or vegetables. The large variety of chemicals composing the animal tissue might be involved in flavour development. Although the chemical composition of the tissue might remain essentially constant, yet small quantitative and qualitative changes could greatly affect the flavour. Thus, in dealing with the chemistry of meat flavours, we should note some factors influencing their potential precursors. Species differences in flavour precursors must be a major factor in view of the characteristic flavours of beef, pork, lamb and chicken meat. Flavour characteristics may vary according to the strain of the animal. Meat flavour is probably the result of a number of volatiles from different chemical classes including sulphur containing components present in particular quantitative proportions.

Meat flavourings are required in the manufacture of many convenient processed foods which are at present increasingly forming a large proportion of the normal common

diet. They are needed to render the meat analogues based on textured vegetable proteins acceptable. Although not matching up to predicted demands, they are now widely used as a nutritional supplement to more conventional sources of protein, not only to lower the price but also to contribute in lowering lipid and cholesterol intake.

The needs of the stuff manufactures for imitation of meat flavouring materials, have raised considerable interest towards studying flavour components of various model systems incorporating thermal treatment of amino acids and sugars, in addition to their degradation products. These model systems are generally categorized under the common name of the Maillard (browning) reaction. Interest in a study of model systems is based on the fact that the precursors of flavour components are usually included in a more concentrated form than in natural products. This helps to understand the mechanism of formation of the key compounds in natural products and, consequently, to predict the composition of model systems leading to the desired results when conducting the reaction. One of the most important precursors of sulphur containing compounds is cysteine, widely accepted to obtain concentrates with a meaty flavour.

The flavour of meat is of great academic as well as practical importance. The chemistry of meat flavour formation has been extensively investigated and reviewed.

Current interest in the composition of meat flavour is for the purpose of producing high quality extracts or synthesizing better meat flavours. This will be useful in imparting meat flavours to non-meat protein analogues intensifying meat flavour in products made with extenders or in products whose flavour has been attenuated by processing and in supplying a desirable flavour for use in other than meat products. Locally, the traditionally ground meat products are made primarily from beef and vegetable proteins. However, other meat species such as camel can be used to make acceptable ground meat products. Camel meat, as one of the consumed meat in Egypt, is relatively inexpensive.

Soybean proteins are widely used in food industry because it is the most available, nutritional and inexpensive vegetable protein, throughout the world-functional properties and palatability characteristics associated with the use of soybean protein in ground beef formulation, it is well documented concerning the change in the chemical and physical properties. However, there is a shortage in literature dealing with the change in meat flavour after

adding soybean protein, while research with actual meat preparation yield more meaningful data. Many studies are carried out with precursor compounds that are, or may be, found in meat and under conditions that presumably occur during cooking. It is, of course, questionable whether all compounds formed in model systems have meaty odour, or whether they are even found in meat aroma, but much interesting chemistry has developed from model systems and they have provided informations about potential reactions that might occur in meat.