chemical studies on flaour of meat and meat products

magda abdel_monem abdel_mageed

This thesis comprises a general introduction whichgives interesting information on the importance of studyingmeat flavour in producing meat products.Flavour chemistry has become an important area ofspecialization in the last years. However the literatureis mostly devoid of references on work done on aromaof adulterated beef meat with HSP and camel rreat.The review of literature systematize the investigationof meat flavour components. Several studies had been doneconcerning the volatile constituents of mea': from differentspecies of animals. Meat flavours are produced by cookingraw meat and they vary not only with respect to types ofmeat (e.C). beef, pork, chicken) but also with respect tomethod ofcooking(e.g., stewing, simnering, ::rying androasting). Various compounds in raw meat are convertedinto volatiles as a result of chemical chang.~sby heating.Nany investigations showed that the flavour desirabilityof beef products containing other inexpensive but stillnutritional proteins, (soybean protein, mechanicallydeboned meat and others) decreased by increasing theadded protein. Attempts of many authors in studyingMaillard reaction and some model syscems to simulatethe aroma of cooked meat had been reviewed.The experimental part includes information aboutthe materials utilized in the studies. The differentexperimental procedures and techniques adopn ed are alsoexplained, these include the preparation of aroma concentratesfrom the following samples.1. Roasted beef meat.2. Roasted camel meat.3. Roasted beef meat containing 10-90% camel meat.4~ Roasted hydrolyzed 'soybean protein.S. Roasted beef meat containing 10-305~ HSP.6. Roasted beef meat containing different ratios of camelmeat and HSP.7.Roasted three commercial samples of beef containing HSPavailable from the local market.8. Three different model systems.The aroma concentr~ddeveloped from roasted beefmeat and camel meat were fractionated into their neutralacidic and basic fractions. The aroma concentrates mentionedabove were subjected to GLC analysis. The obtaineddata are illustrated by 12 figures and 14 tables. Thevolatile components which had been identified in theneutral-acidic and basic fraction of beef and camelmeat were compared. Different classes of volatilecomponents were identified such as carbonyls, alcoholslactones, esters, furans, pyrazines, oxazoles and threesulphur_containing compounds. Some remarkable variationswere detected between the aroma constituents in bothroasted beef and camel meat. Comparative study on theflavour of the beef meat and beef meat ad~lterated with10-90% camel meat had been done in terms of the changein the total area percentage of the

different classes ofvolatile components. Some proportional relations cou~dbe derived by the admixing of camel meat with beef meat.The change in the concentration of triethyl r.yrazine isconsidered as the best criteria for predicting the percentageof added camel meat to beef meat. The volatile componentsdeveloped from roasting beef meat were compared withthat of beef meat containing 10-30% HSP. ThE! short chainaldehydes were represented in higher concentration inroasted HSP than in beef and so the samples of beef containing10-30% soybean protein showed oon s.i.deazb Le concentrationof these components. The volatile componerrcs of theadulterated roa~ted beef with camel meat and HSP were alsostudied.