

Food Chemistry

Papers Published in Volumes 43–45

CONTENTS OF VOLUME 43

Number 1

Editorial	1
Determination of Hydrophobicity and Reactive Groups in Proteins of Cod (<i>Gadus morhua</i>) Muscle During Frozen Storage	3
EILEEN L. LEBLANC & RAYNALD J. LEBLANC (Canada)	
Studies on Chemical Composition and Antinutritional Factors in Three Germplasm Seed Materials of the Tribal Pulse, <i>Mucuna pruriens</i> (L.) DC	13
R. MARY JOSEPHINE & K. JANARDHANAN (India)	
A Comparative Study of the Composition of Lipids Associated with Starch Granules from Various Botanical Sources	19
T. VASANTHAN & R. HOOVER (Canada)	
Nigerian Soup Condiments: Traditional Processing and Potential as Dietary Fibre Sources	29
H. N. ENE-OBONG (Nigeria) & E. CARNOVALE (Italy)	
Comparison of Changes in Headspace Volatiles of some Coffee Blends during Storage	35
MERJA LEINO, JUKKA KAITARANTA & HEIKKI KALLIO (Finland)	
The Effect of Calcium on Bovine α -Lactalbumin Conformational Transitions by Ultraviolet Difference and Fluorescence Spectrophotometry	41
R. K. OWUSU (UK)	
Research Note	
Occurrence in Leguminous Seeds, Resistance to Protease Digestion and Antigenicity of an α -Amylase Inhibitor	47
MAKOTO KOTARU, KIMIKAZU IWAMI, HUNG-YU YEH & FUMIO IBUKI (Japan)	

ANALYTICAL METHODS SECTION

A Sensitive Kinetic Assay for the Determination of Iodine in Foodstuffs	51
D. L. MAHESH, Y. G. DEOSTHALE & B. S. NARASINGA RAO (India)	
Investigation of the Conjugase Treatment Procedure in the Microbiological Assay of Folate	57
DEEPA M. GOLI & JOSEPH T. VANDERSLICE (USA)	
Determination of Reducing Sugars by the Neocuproine Method Using Flow Injection Analysis	65
MIGUEL PERIS-TORTAJADA, ROSA PUCHADES & ANGEL MAQUIERA (Spain)	
Steryl Ester Analysis as an Aid to the Identification of Oils in Blends	71
MICHAEL H. GORDON & ROSEMARY E. GRIFFITH (UK)	
Technical Note	
Comments on the Standard Fluorometric Determination of Riboflavin in Foods and Biological Tissues	79
L. F. RUSSELL & JOSEPH T. VANDERSLICE (USA)	
Bibliography on Analytical Food Chemistry	83

Number 2

Comparative performance of chemically and enzymatically modified whey proteins. J. LAKKIS & R. VILLOTA (USA)	93
The fate of some oligosaccharides during the preparation of wari, an Indian fermented food H. K. TEWARY & H. G. MULLER (UK)	107
Anthocyanins and other phenolic compounds in fruits of red-flesh apples G. MAZZA & Y. S. VELIOGLU (Canada)	113
Nutrient composition and antinutritional factors of rice bean (<i>Vigna umbellata</i>) DEEPINDER KAUR & A. C. KAPOOR (India)	119
Proposal of a novel formula to calculate dominant wavelength for colour of red wines F. J. HEREDIA & M. GUZMÁN CHOZAS (Spain)	125
Interactions between volatile and non-volatile compounds in the presence of water. M. LE THANH, P. THIBEAUDEAU, M. A. THIBAUT & A. VOILLEY (France)	129

ANALYTICAL METHODS SECTION

The determination of food colours by HPLC with on-line dialysis for sample preparation G. M. GREENWAY, N. KOMETÀ & R. MACRAE (UK)	137
Routine microbiological assay for carnitine activity in biological fluids and tissues HERMAN BAKER, BARBARA DEANGÉLIS, ELLIOTT R. BAKER, ALLURI S. REDDI, MARCELLE KHALIL & OSCAR FRANK (USA)	141
Study of the effect of heat (treatments) on meat protein denaturation as determined by ELISA MARÍA L. MARÍN, CARMEN CASAS, MARÍA I. CAMBERO & BERNABÉ SANZ (Spain)	147
Non-degradative extraction and simultaneous quantitation of riboflavin, flavin mononucleotide and flavin adenine dinucleotide in foods by HPLC L. F. RUSSELL & JOSEPH T. VANDERSLICE (USA)	151
Bibliography on analytical food chemistry	163

Number 3

A comparison of the proximate, mineral and amino acid composition of some known and lesser known legumes in Nigeria H. N. ENE-OBONG (Nigeria) & E. CARNOVALE (Italy)	169
Effects of synthetic antioxidants (BHA, BHT and PG) on the mutagenicity of IQ-like compounds CHIHOUNG CHEN, A. M. PEARSON & J. I. GRAY (USA)	177
Nitrite-free meat curing systems: Update and review. FEREIDOON SHAHIDI & RONALD B. PEGG (Canada)	185
Relationship between anthocyanins and sugars during the ripening of grape berries M. L. GONZÁLEZ-SAN JOSÉ & C. DIEZ (Spain)	193
Technical Note Fatty acids composition and distribution in the free lipid fraction of major types of wheat flour and bread consumed in Kuwait N. B. KASHLAN, A. S. HASSAN, V. P. SRIVASTAVA & N. A. MOHANNA (Kuwait)	199

ANALYTICAL METHODS SECTION

(Papers in this section were presented at *Micronutrients and Health II—Trace Elements* held
at AFRC Institute of Food Research, Norwich on 25–26 March 1991)

Absorption, excretion and storage of trace elements: studies over 50 years ELSIE M. WIDDOWSON (UK)	203
---	-----

Papers Published in Volumes 43–45

Dietary intake of nutrient trace elements DAVID H. BUSS & HELEN J. ROSE (UK)	209
Bioavailability of trace elements SUSAN J. FAIRWEATHER-TAIT (UK)	213
Trace element deficiency in man: classifications and methods of assessment BRIAN A. WHARTON (UK)	219
Trace element requirements and DRVs R. W. WENLOCK (UK)	225
Physiological role of zinc M. J. JACKSON & N. M. LOWE (UK)	233
The physiological roles of copper COLIN F. MILLS (UK)	239
Bibliography on analytical food chemistry	241

Number 4

Effect of added pentosans on some properties of wheat bread J. MICHNIEWICZ, C. G. BILIADERIS & W. BUSHUK (Canada)	251
--	-----

Chemical composition and nutritive value of various breads in Saudi Arabia E. I. MOUSA, I. S. AL-MOHIZEA & M. A. AL-KANHAL (Saudi Arabia)	259
--	-----

Acidity, microbial, organic and free amino acids development during fermentation of skinned milk, Kishk. A. A. DAMIR, A. A. SALAMA & M. SAFWAT MOHAMED (Egypt)	265
---	-----

Loss of active principles of common spices during domestic cooking K. SRINIVASAN, K. SAMBAIAH & N. CHANDRASEKHARA (India)	271
--	-----

Research note

Nucleic acid content of seal meat JOSEF SYNOWIECKI & FEREIDOON SHAHIDI (Canada)	275
--	-----

ANALYTICAL METHODS SECTION

(Papers in this section were presented at *Micronutrients and Health II—Trace Elements* held at AFRC Institute of Food Research, Norwich on 25–26 March 1991)

Sample preparation and handling H. T. DELVES (UK)	277
--	-----

Determination of atrazine in milk by immunoassay RODNEY J. BUSHWAY, LEWIS B. PERKINS, HEATHER L. HURST & BRUCE S. FERGUSON (USA)	283
---	-----

Trace elements: databases and food composition compilations D. A. T. SOUTHGATE (UK)	289
--	-----

Study of dietary fibre content in cucumber by gravimetric and spectrophotometric methods MA. D. RODRIGUEZ, A. REDONDO & MA. J. VILLANUEVA (Spain)	295
--	-----

Trace elements in autopsy tissue T. D. B. LYON & G. S. FELL (UK)	299
---	-----

Use of reference materials in trace element analysis of foodstuffs RITA CORNELIS (Belgium)	307
---	-----

Speciation of trace metals, with special reference to intestinal iron absorption T. J. PETERS, K. B. RAJA & R. J. SIMPSON (UK)	315
---	-----

Bibliography on analytical food chemistry	321
---	-----

Number 5

Sesquiterpene hydrocarbons in processed stored carrot sticks	331
ERIC D. LUND & JOSEPH H. BRUEMMER (USA)	
Sensory study on the character-impact flavour compounds of dill herb (<i>Anethum graveolens</i> L.)	337
IMRE BLANK, ALINA SEN & WERNER GROSCH (FRG)	
Changes in organic acids during ripening of Port Salut Argentino cheese.	345
A. E. BEVILACQUA & A. N. CALIFANO (Argentina)	
Determination of free carbohydrates and Amadori compounds formed at the early stages of non-enzymic browning	351
A. OLANO, G. SANTA-MARIA, N. CORZO, M. M. CALVO, I. MARTINEZ-CASTRO & M. L. JIMENO (Spain)	
Melanoidins from glucose and glycine: composition, characteristics and reactivity towards sulphite ion	359
B. L. WEDZICHA & M. T. KAPUTO (UK)	
Characteristics of invertase immobilized on three different types of supports	369
HANAA A. ABDELLAH, TAISEER M. ABOU BAKER, LAILA A. SHEKIB & SAMIR M. EL-IRAQI (Egypt)	
Bioavailability in the rat of zinc and iron from the basic salts $Zn_5(OH)_8Cl_2 \cdot H_2O$, $Fe(OH)SO_4$ and $Fe_4(OH)_{11}NO_3 \cdot 2H_2O$	377
MAGDELENA GÁLVEZ-MORROS, O. GARCIA-MARTINEZ (Spain), A. J. A. WRIGHT & SUSAN SOUTHON (UK)	
Research Note	
Effect of processing and cooking on the antinutritional factors of faba bean (<i>Vicia faba</i>).	383
ALKA SHARMA & SALIL SEHGAL (India)	
ANALYTICAL METHODS SECTION	
Gas chromatographic determination of cholesterol in processed foods	387
FRANZ ULBERTH & HERMINE REICH (Austria)	
Comparison of AOAC and high-performance liquid chromatographic methods for thiamin determination in foods	393
ZAKIA M. ABDEL-KADER (Egypt)	
An improved colorimetric method for the estimation of lactulose in lactose-lactulose mixtures	399
R. NAGENDRA & S. VENKAT RAO (India)	
Technical Note	
Analytical quality assurance for analysis of aflatoxins in agricultural export produce	403
R. B. SASHIDHAR, H. V. V. MURTHY & V. RAMESH BHAT (India)	
Bibliography on analytical food chemistry	407

CONTENTS OF VOLUME 44

Number 1

Estimation of dietary calcium utilization in rats using a biomechanical functional test	1
Y. V. YUAN & D. D. KITTS (Canada)	
Studies of food value and contaminants in canned foods	9
CHIKE F. ODUOZA (Nigeria)	
Seed protein of millets: amino acid composition, proteinase inhibitors and in-vitro protein digestibility	13
G. RAVINDRAN (Sri Lanka)	

Papers Published in Volumes 43–45

Compositional profiles of fruit juice concentrates and sweeteners LETICIA S. PILANDO & RONALD E. WROLSTAD (USA)	19
Size as source of variance in lipid composition of pea M. A. MURCIA & F. RINCÓN (Spain)	29
Stability of anthocyanic pigments from <i>Panicum melinis</i> PAULO C. STRINGHETA, PAULO A. BOBBIO & FLORINDA O. BOBBIO (Brazil)	37
Chemical composition and fatty acid profiles of cereals in Nigeria A. ADEYEYE & K. AJEWOLE (Nigeria)	41
Post-harvest treatment of wild mango (<i>Irvingia gabonensis</i>) for improved shelf life KOLADE JOSEPH & O. C. AWORH (Nigeria)	45
Technical Note Examples of direct and indirect effects of technological treatments on ascorbic acid, folate and thiamine L. PIZZOFERRATO (Italy)	49
ANALYTICAL METHODS SECTION	
Determination of phenolic compounds in virgin olive by reversed-phase HPLC with emphasis on UV detection M. TSIMIDOU, G. PAPADOPOULOS & D. BOSKOU (Greece)	53
An improved analytical method for the determination of carotenes and xanthophylls in dried plant materials and mixed feeds B. H. CHEN & S. H. YANG (Taiwan)	61
Simultaneous liquid chromatographic analysis of 5-(hydroxymethyl)-2-furaldehyde and methyl anthranilate in honey P. VIÑAS, N. CAMPILLO, HERNÁNDEZ CÓRDOBA & M. E. CANDELA (Spain)	67
Bibliography on analytical food chemistry	73

Number 2

Study of some factors affecting intensity/time characteristics of sweetness MARIE-ODILE PORTMANN, SAMIRA SERGHAT & MOHAMED MATHLOUTHI (France)	83
Ultrafiltration as a valuable method in calcium-binding studies with milk proteins CHRISTOPHOROS P. PAPPAS (Greece) & JAMES ROTHWELL (UK)	93
Studies on commercially canned juices produced locally in Saudi Arabia: Part 3— Physicochemical, organoleptic and microbiological assessment E. H. EWAIDAH (Saudi Arabia)	103
A study of soluble proteins from four potato varieties used in the Swedish starch industry INGER AHLDÉN & GUN TRÄGÅRDH (Sweden)	113
Antioxidant properties of extracts from tanshen (<i>Salvia miltiorrhiza</i> Bunge) M. H. GORDON & X. C. WENG (UK)	119
Extraction of soybean (<i>Glycine max.</i>) with hexane-acetic acid: Effect on oil quality S. BHAGYA & H. SRINIVAS (India)	123
Chemical composition of the muscle tissue of ray (<i>Raja radiata</i>) from Terranova L. PASTORIZA & G. SAMPEDRO (Spain)	127
Variations in cyanogen content of cassava during village processing in Cameroon G. M. O'BRIEN (UK), L. MBOME (Cameroon), A. J. TAYLOR & N. H. POULTER (UK)	131

Technical Note

- Production of improved cassava fufu, 'akpu', through controlled fermentation 137
 N. P. OKOLIE, I. N. IBEH & E. N. UGOCHUKWU (Nigeria)

ANALYTICAL METHODS SECTION

- Determination of ascorbic acid in fruit and vegetables using normal polarography 141
 FERHUNDE ŞAHBAZ & GÜLER SÖMER (Turkey)
- The use of HPLC protein profiles in fish species identification 147
 SHARYN G. ARMSTRONG, DAVID N. LEACH &
 S. GRANT WYLLIE (Australia)
- Bibliography on analytical food chemistry 157

Number 3

- Infrared and ultraviolet spectra of sulphur(IV) oxospecies in water-non-electrolyte mixtures 165
 B. L. WEDZICHA, I. R. BELLION & S. J. GODDARD (UK)
- Fibre fraction carbohydrates in *Olea europaea* (Gordal and Manzanilla var.) 173
 RAFAEL GUILLÉN, ANTONIA HEREDIA, BLANCA FELIZÓN,
 ANA JIMÉNEZ, ALFREDO MONTAÑO &
 JUÁN FERNÁNDEZ-BOLAÑOS (Spain)
- Accelerated ripening of Ras cheese using freeze-shocked mutant strains of *Lactobacillus casei* 179
 M. A. EL-SODA, A. A. HANTIRÀ, N. I. EZZAT &
 H. K. EL-SHAFEI (Egypt)
- Purification and separation of oenocyanin anthocyanins on sulphonyethylcellulose 185
 G. SPAGNA & P. G. PIFFERI (Italy)
- Thermodynamic analysis of the effect of calcium on bovine alpha-lactalbumin conformational stability 189
 R. K. OWUSU (UK)
- Growth of young rats on diets based on fish silage with different degrees of hydrolysis 195
 MARIT ESPE, HERBORG HAALAND, LEIF R. NJAA & JAN RAA (Norway)
- A kinetic model for the reaction of tryptophan with glucose and mannose—the role of diglycation in the Maillard reaction 201
 V. A. YAYLAYAN & N. G. FORAGE (Canada)
- Effect of storage and insect infestation on protein and starch digestibility of cereal grains 209
 SUDESH JOOD & A. C. KAPOOR (India)

ANALYTICAL METHODS SECTION

- Zinc determination in human milk by flameless atomic absorption spectrometry after dry ashing 213
 JOSIANE ARNAUD, MARIE CHRISTINE BOUILLET,
 JOSETTE ALARY & ALAIN FAVIER (France)
- A spectrofluorimetric procedure for the determination of α -tocopherol in nutritional supplement products 221
 IBRAHIM B. RAZAGUI, PHILIP J. BARLOW & KEITH D. A. TAYLOR (UK)
- Isolation and partial characterization of a porcine thyroglobulin-binding *Phaseolus vulgaris* L. lectin 227
 WILLIAM R. BONORDEN & BARRY G. SWANSON (USA)
- Bibliography on analytical food chemistry 235

Number 4

Model reactions of roast aroma formation: X. Amino acid-specific products after roasting of tryptophan with reducing sugars and sugar degradation products EBERHARD KNOCH & WERNER BALTES (FDR)	243
Influence of pH treatment on pectic substances and firmness of blanched carrots NOACH BEN-SHALOM, DAVID PLAT, AHARON LEVI & RIVKA PINTO (Israel)	251
Variation in physical and chemical composition during maturation of umbu (<i>Spondias tuberosa</i>) fruits NARENDRA NARAIN, PUSHKAR S. BORA, HEINZ J. HOLSCUH & MARGARIDA ANGELICA DA S. VASCONCELOS (Brazil)	255
Heat inactivation of lipase from psychrotropic <i>Pseudomonas fluorescens</i> P38: activation parameters and enzyme stability at low or ultra-high temperatures R. K. OWUSU, A. MAKHZOUN & J. S. KNAPP (UK)	261
Sorbitol and free sugar contents in plums E. FORNI, M. L. ERBA, A. MAESTRELLI & A. POLESELLO (Italy)	269
Nutrient composition and anti-nutritional factors in vegetable soybean: II. Oil, fatty acids, sterols, and lipoxygenase activity A. I. MOHAMED & M. RANGAPPA (USA)	277

Research Notes

Insensitivity of the amino acids of canola and rapeseed to methanol-ammonia extraction and commercial processing F. SHAHIDI, M. NACZK, D. HALL & J. SYNOWIECKI (Canada)	283
Effect of supercritical carbon dioxide on arginine JÜRGEN K. P. WEDER, MARIA V. BOKER (FDR) & MERVYN P. HEGARTY (Australia)	287

ANALYTICAL METHODS SECTION

Phosphate determination in foodstuffs using a plant tissue electrode L. CAMPANELLA, M. CORDATORE, F. MAZZEI, M. TOMASSETTI & G. VOLPE (Italy)	291
Quantitative analysis of sugar solutions using infrared spectroscopy E. K. KEMSLEY, LI ZHUO, M. K. HAMMOURI & R. H. WILSON (UK)	299
Comparative study by gas chromatography-mass spectrometry of methods for the extraction of sulfur compounds in <i>Allium cepa</i> L. R. ARTACHO MARTÍN-LAGOS, M. F. OLEA SERRANO & M. D. RUIZ-LÓPEZ (Spain)	305

Technical Note

A chemical clean-up procedure to reduce trace metal contamination from laboratory blenders IBRAHIM B. RAZAGUI & PHILIP J. BARLOW (UK)	309
Bibliography on Analytical Food Chemistry	313

Number 5

The effect of a single oral dose of polyphenols obtained from the outercoat of the fruit of <i>Treculia africana</i> in protein-deficient rats R. O. LAWAL (Nigeria)	321
Bile acid activity in the presence of dietary fibres, casein, calcium, phospholipid, fatty acid and cholesterol: factorial experiments <i>in vitro</i> JOHN A. MONRO, JULIAN LEE & BRUCE R. SINCLAIR (New Zealand)	325

A comparison of the methods for the <i>in vitro</i> determination of the effects of tea on iron availability from foods DIVINAGRACIA H. VALDÉZ, JENNIFER M. GEE, SUSAN J. FAIRWEATHER-TAIT & IAN T. JOHNSON (UK)	331
Determination of apparent molar volumes (AMV) and capacity factors (k_w) for sweet and non-sweet sulphamates, correlation between AMV values, and Corey-Pauling-Koltun volumes and relative sweetness correlations WILLIAM J. SPILLANE, GABRIELLA MORINI & GORDON G. BIRCH (UK)	336
Folic acid stability in hydrogen peroxide-potassium thiocyanate-treated milk MOHIUDDIN M. TAHER & N. LAKSHMAIAH (India)	343
On manganese-induced reddening of florets from dyer's saffron capitula KOSHI SAITO & MASATOSHI KATSUKURA (Japan)	349
Comparison of oxidation of sucrose octaesters and triacylglycerols derived from olive oil J. J. RIOS, M. C. PÉREZ-CAMINO, G. MÁRQUEZ-RUÍZ & M. C. DOBARGANES (Spain)	357
ANALYTICAL METHODS SECTION	
Spectrophotometric assay using <i>o</i> -phthaldialdehyde for determination of reactive lysine in dairy products M. S. VIGO, L. S. MALEC, R. G. GOMEZ & R. A. LLOSA (Argentina)	363
A new, modified acid phosphatase assay for determining the extent of heat treatment in canned hams L. KÖRMENDY, GABRIELLA ZSARNÓCZAY & VILMA MIHÁLYI (Hungary)	367
Selected ion monitoring of tert-butyldimethylsilyl cholesterol ethers for determination of total cholesterol content in foods GALE STEWART, CLAUDE GOSELLIN & SITHIAN PANDIAN (Canada)	377
The effect of xylose on the generation of volatiles from heated thiamine ODILE HINCELIN (France), JENNIFER M. AMES, ANTON APRIYANTONO & J. STEPHEN ELMORE (UK)	381
Protein extractability in dry-cured ham FIDEL TOLDRA, M.-CARMEN MIRALLES & JOSÉ FLORES (Spain)	391
Bibliography on analytical food chemistry	395

CONTENTS OF VOLUME 45

Number 1

Proximate composition, amino acids and inorganic mineral content of Arabian Camel meat: comparative study E. A. ELGASIM & M. A. ALKANHAL (Saudi Arabia)	1
Hydrocyanic acid contents of tropical browse and their influence on performance of goats CHRISTOPHER F. I. ONWUKA (Nigeria)	5
Influence of microwave and conventional cooking and reheating on sensory and chemical characteristics of roast beef NAHED M. EL-SHIMI (Egypt)	11
Purification and characterization of lactate dehydrogenase from <i>Geotrichum candidum</i> Y. D. HANG & E. E. WOODAMS (USA)	15
Effect of electrolytes on the kinetics of thiamine loss in model systems of high water activity L. M. MAURI, S. M. ALZAMORA & J. M. TOMIO (República Argentina)	19

Papers Published in Volumes 43–45

Solute-solvent interactions and the sweet taste of small carbohydrates. Part 1: Effect of solvent polarity on solution properties	25
SAMIRA SERGHAT, MOHAMED MATHLOUTHI (France), TINEKE HOOPMAN & GORDON G. BIRCH (UK)	
Formation of <i>N</i> -alkylpyrroles in corn oil/amino acid model systems	33
CARLOS MACKU & TAKAYUKI SHIBAMOTO (USA)	
Antinutritional factors in protein fractions of tepary bean (<i>Phaseolus acutifolius</i>)	37
A. IDOURAINE, C. W. WEBER, S. K. SATHE & E. A. KOHLHEPP (USA)	
Kinetics of galactose and tagatose formation during heat-treatment of milk	41
E. TROYANO, I. MARTÍNEZ-CASTRO & A. OLANO (Spain)	
Technical Note	
Effects of storage in a two-stage withering process on the quality of seedling black tea	45
PHILIP O. OWUOR & JOHN E. ORCHARD (Kenya)	
ANALYTICAL METHODS SECTION	
Recovery of rapeseed tannins by various solvent systems	51
M. NACZK, F. SHAHIDI & A. SULLIVAN (Canada)	
Effect of alkali tannin content and in-vitro protein digestibility of sorghum cultivars	55
ELFADIL E. BABIKER & ABDULLAHI H. EL TINAY (Sudan)	
Study of natural ascorbigen and related compounds by HPLC	61
L. G. ALEKSANDROVA, A. M. KOROLEV & M. N. PREOBRAZHENSAYA (Russia)	
Technical Note	
Qualitative and comparative studies of cholesterol oxides in commercial and home-made Indian ghees	71
C. RAMA PRASAD & R. SUBRAMANIAN (India)	
Bibliography on analytical food chemistry	75

Number 2

Proximate composition, nutritionally valuable minerals and functional properties of <i>Adenopus breviflorus</i> benth seed flour protein concentrate	79
ALADESANMI A. OSHODI (Nigeria)	
Characteristics of Burgos and Hispánico cheeses manufactured with calf rennet or with recombinant chymosin	85
M. MEDINA, P. GAYA, A. M. GUILLÉN & M. NUÑEZ (Spain)	
Water activity and chemical composition of some food emulsions	91
R. GÓMEZ & J. FERNÁNDEZ-SALGUERO (Spain)	
Mineral and proximate composition of some commercially important fish of the Arabian Gulf	95
M. ZAMIL EL-FAER, TARIK N. RAWDAH, KHUDRE M. ATTAR & MOHAMMAD ARAB (Saudi Arabia)	
Inhibition of lipid autoxidation by bovine superoxide dismutase	99
D. J. NICE & D. S. ROBINSON (UK)	
Lipid oxidative in the processing of Iberian pig hams	105
T. ANTEQUERA, C. J. LÓPEZ-BOTE, J. J. CÓRDOBA, C. GARCÍA, M. A. ASENSIO, J. VENTANAS, J. A. GARCÍA-REGUEIRO & I. DÍAZ (Spain)	

Studies on the protease activities in Norway lobster (<i>Nephrops norvegicus</i>) and their role in the phenolase activation process ZHOUBO WANG, K. D. ANTHONY TAYLOR & XIANJIAN YAN (UK)	111
Composition of the essential oil of marjoram (<i>Origanum majorana</i> L.) M. E. KOMAITIS, N. IFANTI-PAPATRAGIANNI & E. MELISSARI-PANAGIOTOU (Greece)	117

Technical Note

Changes in quality parameters of commercial black seedling tea due to the time of the year in the Eastern Highlands of Kenya PHILIP O. OWUOR (Kenya)	119
---	-----

Application of new methodology to canola protein isolation M. A. H. ISMOND & W. D. WELSH (Canada)	125
--	-----

ANALYTICAL METHODS SECTION

Determination of carotenoids and chlorophylls in water convolvulus (<i>Ipomoea aquatica</i>) by liquid chromatography B. H. CHEN & Y. Y. CHEN (Taiwan)	129
---	-----

Quantitative estimation of garlic oil content in garlic oil based health products XINJIAN YAN, ZHOUBO WANG & PHILIP BARLOW (UK)	135
--	-----

Phenolic compounds and stability of virgin olive oil—Part I MARIA TSIMIDOU, GEORGE PAPADOPOULOS & DIMITRIOS BOSKOU (Greece)	141
---	-----

Direct analysis of plant minerals and comparison of extraction processing using ICP-AES CHIN CHOON ONG (Singapore)	145
---	-----

Chromatographic investigation of carotenoids, sugars and organic acids from <i>Diospyros kaki</i> fruits HUSSEIN G. DAOOD, PÉTER BIACS, BEATRIX CZINKOTAI & ÁGOSTON HOSCHKE (Hungary)	151
---	-----

Bibliography on analytical food chemistry	157
---	-----

Number 3

Migration of diethylphthalate and diethyladipate plasticizers from food-grade PVC films into ground-meat products EFTHIMIA KONDYLI, PANAGIOTIS G. DEMERTZIS & MICHAEL G. KONTOMINAS (Greece)	163
--	-----

Biological evaluation of protein quality of wheat as affected by insect infestation SUDESH JOOD & AMIN C. KAPOOR (India)	169
---	-----

Chemical evaluation of the pod and pulp of the fluted pumpkin (<i>Telfairia occidentalis</i>) fruit A. I. ESSIEN, R. U. B. EBANA & H. B. UDO (Nigeria)	175
---	-----

Hake roe lipids: composition and changes following cooking EDUARDO MÉNDEZ, MARIÉSOL FERNÁNDEZ, GABRIELA PAZO & MARÍA A. GROMPONE (Uruguay)	179
--	-----

Effects of oxidized α -, γ - and δ -tocopherols on the oxidative stability of purified soybean oil MUN Y. JUNG & DAVID B. MIN (USA)	183
---	-----

Supercritical fluid extraction of vegetable and animal fats with CO ₂ —A mini review M. T. G. HIERRO & G. SANTA-MARÍA (Spain)	189
---	-----

Research Note

- Effects of processing on the oligosaccharides of oilseed and legume protein meals 193
 M. NACZK, R. M. MYHARA & F. SHAHIDI (Canada)

ANALYTICAL METHODS SECTION

- Production and purification of an R-protein-enzyme conjugate for use in microtitration plate protein-binding assay for vitamin B₁₂ in fortified food 199
 SANDRA C. ALCOCK, PAUL M. INGLAS &
 MICHAEL R. A. MORGAN (UK)
- Determination of nine carotenoids, retinol, retinyl palmitate and α-tocopherol in control human serum using two internal standards 205
 B. OLMEDILLA, F. GRANADO, I. BLANCO &
 R. ROJAS-HIDALGO (Spain)
- A method for the simultaneous determination of vitamin D₂, D₃ and their metabolites in plasma and its application to plasma obtained from normal subjects and patients 215
 SONOKO MASUDA, TOSHIO OKANO &
 TADASHI KOBAYASHI (Japan)
- Bibliography on analytical food chemistry 227
- Book reviews 231

Number 4

- Flavone inhibits mutagen formation during heating in a glycine/creatine/glucose model system 235
 HUEI LEE, CHYR-YIR JIAAN & SHUN-JEN TSAO (Taiwan)
- Chemical composition and microflora of black cumin (*Nigella sativa* L.) seeds growing in Saudi Arabia 239
 M. SALEH AL-JASSIR (Saudi Arabia)
- Changes in molecular weight of water-soluble and EDTA-soluble pectin fractions from carrot after heat treatments 243
 D. PLAT, N. BEN-SHALOM, A. LEVI & RIVKA PINTO (Israel)
- Effects of cooking on the nutrient and antinutrient contents of yam tubers (*Dioscorea alata* and *Dioscorea esculenta*) 247
 J. P. D. WANASUNDERA & G. RAVINDRAN (Sri Lanka)
- The biochemical composition and nutritional potential of the tribal pulse, *Alysicarpus rugosus* (Willd.) DC 251
 P. SIDDHURAJU, K. VIJAYAKUMARI &
 K. JANARDHANAN (India)
- Effect of feeding *Treculia africana* seed protein on heart lipids of rats 257
 R. O. LAWAL (Nigeria)
- Fortification of common salt with iron: use of polyphosphate stabilisers 263
 S. RANGANATHAN (India)
- Mineral and trace element contents in bread 269
 FELIB Y. ISKANDER & KAREN R. DAVIS (USA)

ANALYTICAL METHODS SECTION

- Determination of the triglyceride, phospholipid and unsaponifiable fractions of yellow nutsedge tuber oil 279
 R. A. ODERINDE & A. O. TAIRU (Nigeria)
- Analysis of organic acids in potato wastewater 283
 PETER J. W. ROVERS & TERESA KASPRZYCKA-GUTTMAN (Poland)

Papers Published in Volumes 43–45

Re-analysis of vitamin A values of selected Malaysian foods of animal origin by the AOAC and HPLC methods	289
E.-SIONG TEE & CHIN-LAM LIM (Malaysia)	
Importance of <i>cis</i> isomer separation in determining provitamin A in tomato products	297
DELIA B. RODRIGUEZ-AMAYA & CASSIA A. TAVARES (Brazil)	
Bibliography on analytical food chemistry	303
Book reviews	307
<i>Number 5</i>	
Organic acid of low molecular weight in Palmita-type cheese	311
ALEXIS FERRER O. & GRANADOS ASDRUBAL (Venezuela)	
Mineral content modifications in Manchego-type cheese during ripening	319
R. MORENO-ROJAS, M. A. AMARO-LOPEZ & F. ZURERA-COSANO (Spain)	
Chemical composition and nutritive value of retail white bread in Zria, Nigeria	323
A. A. ABEDE, G. A. AYOKO & K. SINGH (Nigeria)	
L-Ascorbic acid and stability in aseptically processed orange juice in TetraBrik cartons and the effect of oxygen	327
JOHN F. KENNEDY, ZENAIDA S. RIVERA, LINDA L. LLOYD, FRANK P. WARNER & KORNELIA JUMEL (UK)	
Kinetics and equilibria of tea infusion: Part 9. The rates and temperature coefficients of caffeine extraction from green Chum Mee and black Assam Bukial teas	333
MICHAEL SPIRO, DEOGRATIUS JAGANYI & MARTIN C. BROOM (UK)	
Effect of defatting on starch structure and physicochemical properties	337
T. VASANTHAN & R. HOOVER (Canada)	
ANALYTICAL METHODS SECTION	
Liquid chromatographic determination of fat-soluble vitamins in paprika and paprika oleoresin	349
P. VIÑAS, N. CAMPILLO, I. LÓPEZ GARCÍA & M. HERNÁNDEZ CÓRDOBA (Spain)	
Observations on some of the problems associated with the analysis of carotenoids in foods by HPLC	357
K. J. SCOTT (UK)	
Technical Note	
Determination of fluoride in Spanish vinegars	365
C. GARCÍA (Spain), R. A. S. LAPA, J. L. F. C. LIMA (Portugal) & R. PÉREZ-OLMOS (Spain)	
Bibliography on analytical food chemistry	369
Book reviews	375