Komoditas : TEH

Record 1
AU: Ohr,-L.M.
TI: A growing arsenal against cancer.
SO: Food-technol. Chicago : Institute of Food Technologists 1947-. July 2002. v. 56 (7) p. 67-71.

Record 2
AU: Sabu,-M.C.; Smitha,-K.; Kuttan,-R.
TI: Anti-diabetic activity of green tea polyphenols and their role in reducing oxidative stress in experimental diabetes.
SO: J-ethnopharmacol. Oxford : Elsevier Science Ltd. Nov 2002. v. 83 (1/2) p. 109-116.

Record 3
AU: Lian,-G.; Thiru,-A.; Parry,-A.; Moore,-S.
TI: CFD simulation of heat transfer and polyphenol oxidation during tea fermentation.
SO: Comput-electron-agric. Amsterdam : Elsevier, 1985-. May 2002. v. 34 (1/3) p. 145-158.
AB: Abstract: This paper describes a computational fluid dynamics (CFD) model developed to simulate airflow, heat transfer and enzymatic oxidation of polyphenols during black tea fermentation. The airflow through the packed bed of macerated tealeaves is modelled by the porous-medium flow equation. Spatial distribution of temperature within the packed bed of tealeaf is obtained by solving the heat transfer equation that incorporates the source heat of enzymatic oxidation and convective heat of airflow. Spatial distributions of polyphenolic compounds involved in enzymatic oxidation of tea fermentation are then predicted using species equations. The rates of depletion of reactants and formation of products of polyphenols are modelled by source/sink terms of the species equations with the rates of reactions related to the temperature. Solutions of the species equations then provide the basis for the calculation of source heat generated by the oxidative reactions. Some preliminary results are presented. The aim is to demonstrate that the CFD model provides a valuable tool to examine the effect of process conditions on the complex reaction kinetics and pathways that are responsible for the formation of polyphenolic compounds during tea fermentation.

Record 4
AU: Ding,-Y.; Yu,-H.; Mou,-S.
TI: Direct determination of free amino acids and sugars in green tea by anion-exchange chromatography with integrated pulsed amperometric detection.
SO: J-chromatogr-A. Amsterdam ; New York : Elsevier, 1993-. Dec 27, 2002. v. 982 (2) p. 237-244.

Record 5
AU: Hsu,-S.Y.; Yu,-S.H.
TI: Comparisons on 11 plant oil fat substitutes for low-fat Kung-wans.
SO: J-food-eng. Oxford : Elsevier Science Ltd. Feb 2002. v. 51 (3) p. 215-220.
AB: Smaller amounts of different plant oils were used to replace pork fat in developing low-fat Kung-wans, an emulsified meatball. A one-way randomized complete block design was adopted for comparing three controls and 11 plant oils, including oils from coconut, sunflower, palm, com, peanut, soyabean, tea seed and olive, and hydrogenated oils from coconut, palm and soyabean. Results indicated that replacing 25% pork back fat with 10% water did not change its textural properties. Decreasing fat addition level and adding water generally decreased Kung-wans' red color, yellow color and thiobarbituric acid (TBA) value. All plant-oil products had lower TBA values than the 10% fat control (ConFa2). In general, all plant-oil products had similar textural properties as the ConFa2 except for tea seed oil (Teas) and peanut oil (Pean), which had

higher textural profile analyses data. Teas and Pean were inferior due to bitter taste and strong odor. Overall, coconut, palm, soyabean, olive and hydrogenated soyabean oils were better fat substitutes.

Record 6
AU: Park,-K.J.; Vohnikova,-Z.; Brod,-F.P.R.
TI: Evaluation of drying parameters and desorption isotherms of garden mint leaves (Mentha crispa L.).
SO: J-food-eng. Oxford : Elsevier Science Ltd. Feb 2002. v. 51 (3) p. 193-199.
AB: Mint has been used as a medicinal and aromatic plant since ancient times. Its leaves are used for flavoring, tea infusions and spicing. In addition, mint oil is used to treat several diseases. In order to preserve this seasonal plant, and make it available to consumers during the whole year, it undergoes specific technological treatments, such as drying. Here the desorption isotherms of mint leaves were determined at three temperatures. Experimental curves were fitted to three two-parameter equations, three three-parameter equations and one four-parameter equation. All BET, GAB, Oswin and Peleg models could be used to describe the mint desorption isotherms. Experimental data for the drying of mint was obtained at three different temperatures and two different air velocities. The drying process was interpreted through the diffusional model in order to obtain effective diffusivity values, which proved to range from 4.765 x 10(-13) to 2.945 X 10(-12) m(2)/s. Activation energy was calculated as 82928.5 J/mol assuming an Arrhenius-type temperature reliance. The empirical Page model has shown a better fit to the experimental mint drying data as compared to Fick's model, except for the 50 degrees C-1.0 m/s curve.

Record 7
AU: Gupta,-S.; Chaudhuri,-T.; Seth,-P.; Ganguly,-D.K.; Giri,-A.K.
TI: Antimutagenic effects of black tea (World Blend) and its two active polyphenols theaflavins and thearubigins in Salmonella assays.
SO: PTR,-Phytother-res. West Sussex : John Wiley & Sons Ltd. Nov 2002. v. 16 (7) p. 655-661.

Record 8
AU: Levites,-Y.; Amit,-T.; Youdim,-M.B.H.; Mandel,-S.
TI: Involvement of protein kinase C activation and cell survival/cell cycle genes in green tea polyphenol (-)-epigallocatechin 3-gallate neuroprotective action.
SO: J-biol-chem. Bethesda, Md. : American Society for Biochemistry and Molecular Biology. Aug 23, 2002. v. 277 (34) p. 30574-30580.

Record 9
AU: Golub,-C.
TI: Green tea is good for you, but black tea boasts just as many benefits.
SO: Environ-nutr. New York : Environmental Nutrition, Inc.,. July 2002. v. 25 (7) p. 1, 4.

Record 10
AU: Meilland,-A.A.
TI: Hybrid tea rose plant named 'Meijasper'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. July 2, 2002. (12,760) 3 p.
AB: A new and distinct variety of Hybrid Tea rose plant is provided which abundantly forms attractive double red blossoms that are lightly perfumed. The blossoms are borne on long stems. The plant exhibits an erect growth habit, dense dark green semi-glossy foliage, and very good disease resistance. The attractive dark green foliage contrasts nicely with the red blossoms. The new variety is particularly well suited for use to produce cut flowers under greenhouse growing conditions.

Record 11

AU: Winchel,-J.F.
TI: Hybrid tea rose plant named 'Wingold'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. July 2, 2002. (12,739) 2 p.
AB: Abstract: A hybrid tea rose plant variety producing yellow flowers.

Record 12
AU: Panchariya,-P.C.; Popovic,-D.; Sharma,-A.L.
TI: Desorption isotherm modelling of black tea using artificial neural networks.
SO: Dry-technol. Monticello, N.Y. : Marcel Dekker, Inc. 2002. v. 20 (2) p. 351-362.

Record 13
AU: Williams,-J.B.
TI: Rose plant named 'Magic Beauty'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. May 28, 2002. (12,655) 2 p.
AB: A new rose variety of the hybrid tea class having long stems; large, bright purple red buds with yellow reverse; large, bright purple red and yellow blended flowers; and a vigorous, upright habit of growth.

Record 14
AU: Zhong,-Z.; Froh,-M.; Connor,-H.D.; Li,-X.; Conzelmann,-L.O.; Mason,-R.P.; Lemasters,-J.J.; Thurman,-R.G.
TI: Prevention of hepatic ischemia-reperfusion injury by green tea extract.
SO: Am-j-physiol. Bethesda, Md. : American Physiological Society, 1898-. Oct 2002. v. 283 (4,pt.1) p. G957-G964.

Record 15
AU: Mondal,-T.K.; Chand,-P.K.
TI: Detection of genetic variation among micropropagated tea [Camellia sinensis (L). O. Kuntze] by RAPD analysis.
SO: In-vitro-cell-dev-biol,-Plant. Largo, MD : Society for In Vitro Biology. May/June 2002. v. 38 (3) p. 296-299.

Record 16
AU: Olesen,-L.P.; Olesen,-M.N.
TI: Hybrid tea rose plant named 'Poulrim'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. Mar 19, 2002. (12,465) 3 p.
AB: Abstract: A new hybrid tea rose plant which has abundant, non-fading, apricot/bronze-colored flowers and attractive, disease resistant foliage. This new and distinct variety has shown to be uniform and stable in the resulting generations from asexual propagation.

Record 17
AU: Zary,-K.W.
TI: Hybrid tea rose plant named 'Jacwotte'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. Mar 19, 2002. (12,464) 2 p.
AB: Abstract: A hybrid tea rose plant having large, high centered, blushed pink flowers; long cutting stems; dark green glossy foliage; good disease resistance; and vigorous, upright growth.

Record 18
AU: Carruth,-T.F.
TI: Hybrid tea rose plant named 'Wekbipupois'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. May 21, 2002. (12,640) 2 p.

AB: Abstract: A new variety of Hybrid Tea rose suitable for garden decoration, having flowers of deep purple red coloration.

Record 19
AU: Kim,-H.H.; Cha,-Y.S.; Baek,-H.J.; Cho,-E.G.; Chae,-Y.A.; Engelmann,-F.
TI: Cryopreservation of tea (Camellia sinensis L.) seeds and embryonic axes.
SO: Cryo-Letters. Cambridge : Cryo-Letters. July/Aug 2002. v. 23 (4) p. 209-216.

Record 20
AU: Mochizuki,-M.; Yamazaki,-S.; Kano,-K.; Ikeda,-T.
TI: Kinetic analysis and mechanistic aspects of autoxidation of catechins.
SO: Biochim-biophys-acta. Amsterdam : Elsevier Science B.V. Jan 15, 2002. v. 1569 (1/3) p. 35-44.
AB: A peroxidase-based bioelectrochemical sensor of hydrogen peroxide (H2O2) and a Clark-type oxygen electrode were applied to continuous monitoring and kinetic analysis of the autoxidation of catechins. Four major catechins in green tea, (-)-epicatechin, (-)-epicatechin gallate, (-)-epigallocatechin, and (-)-epigallocatechin gallate, were used as model compounds. It was found that dioxygen (O2) is quantitatively reduced to H2O2. The initial rate of autoxidation is suppressed by superoxide dismutase and H+, but is independent of buffer capacity. Based on these results, a mechanism of autoxidation is proposed; the initial step is the one-electron oxidation of the B ring of catechins by O2 to generate a superoxide anion and a semiquinone radical, as supported in part by electron spin resonance measurements. Superoxide anion works as a stronger one-electron oxidant than O2 against catechins and is reduced to H2O2. The semiquinone radical is more susceptible to oxidation with O2 than fully reduced catechins. The autoxidation rate increases with pH. This behavior can be interpreted in terms of the increase in the stability of superoxide anion and the semiquinone radical with increasing pH, rather than the acid dissociation of phenolic groups. Cupric ion enhances autoxidation; most probably it functions as a catalyst of the initial oxidation step of catechins. The product cuprous ion can trigger a Fenton reaction to generate hydroxyl radical. On the other hand, borate ion suppresses autoxidation drastically, due to the strong complex formation with catechins. The biological significance of autoxidation and its effectors are also discussed.

Record 21
AU: Bihler,-H.; Slayman,-C.L.; Bertl,-A.
TI: Low-affinity potassium uptake by Saccharomyces cerevisiae is mediated by NSC1, a calcium-blocked non-specific cation channel.
SO: Biochim-biophys-acta. Amsterdam : Elsevier Science B.V. Feb 1, 2002. v. 1558 (2) p. 109-118.
AB: Previous descriptions by whole-cell patch clamping of the calcium-inhibited non-selective cation channel (NSC1) in the plasma membrane of Saccharomyces cerevisiae (H. Bihler, C.L. Slayman, A. Bertl, FEBS Lett. 432 (1998); S.K. Roberts, M. Fischer, G.K. Dixon, D. Sanders, J. Bacteriol. 181 (1999)suggested that this inwardly rectifying pathway could relieve the growth inhibition nom1ally imposed on yeast by disruption of its potassium transporters, Trk1p and Trk2p. Now, demonstration of multiple parallel effects produced by various agonists and antagonists on both NSC1 currents and growth (of trk1deltatrk2delta strains), has identified this non-selective cation pathway as the primary low-affinity uptake route for potassium ions in yeast. Factors which suppress NSC1-mediated inward currents and inhibit growth of trk1deltatrk2delta cells include (i) elevating extracellular calcium over the range of 10 micromolar-10 mM, (ii) lowering extracellular pH over the range 7.5-4, (iii) blockade of NSC1 by hygromycin B, and (iv) to a lesser extent by TEA+. Growth of trk1deltatrk2delta cells is also inhibited by lithium and ammonium; however, these ions do not inhibit NSC1, but instead enter yeast cells via NSC1. Growth inhibition by lithium ions is probably a toxic effect, whereas growth inhibition by ammonium

ions probably results from competitive inhibition, i.e. displacement of intracellular potassium by entering ammonium.

Record 22
AU: Pouw,-A.A.
TI: Hybrid tea rose plant named 'Panamaril'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. May 7, 2002. (12,615) 2 p.
AB: A new variety of hybrid tea rose plant producing yellow flowers of good form.

Record 23
AU: Winchel,-J.F.
TI: Hybrid tea rose plant named 'Winfpage'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. May 7, 2002. (12,609) 2 p.
AB: Abstract: A hybrid tea rose plant variety producing bi-color red and light pink flowers.

Record 24
AU: Chantre,-P.; Lairon,-D.
TI: Recent findings of green tea extract AR25 (Exolise) and its activity for the treatment of obesity.
SO: Phytomedicine. Stuttgart ; New York : G. Fischer, c1994-. Jan 2002. v. 9 (1) p. 3-8.

Record 25
AU: Wang,-E.; Barecki-Roach,-M.; Johnson,-W.W.
TI: Elevation of P-glycoprotein function by a catechin in green tea.
SO: Biochem-biophys-res-commun. Orlando, Fla. : Academic Press. Sept 20, 2002. v. 297 (2) p. 412-418.

Record 26
AU: Skrzydlewska,-E.; Ostrowska,-J.; Farbiszewski,-R.; Michalak,-K.
TI: Protective effect of green tea against lipid peroxidation in the rat liver, blood serum and the brain.
SO: Phytomedicine. Stuttgart ; New York : G. Fischer, c1994-. Apr 2002. v. 9 (3) p. 232-238.

Record 27
AU: Su,-L.J.; Arab,-L.
TI: Tea consumption and the reduced risk of colon cancer--resutls from a national prospective cohort study.
SO: Public-health-nutr. Wallingford, Oxon, UK : CABI Publishing on behalf of The Nutrition Society. June 2002. v. 5 (3) p. 419-425.

Record 28
AU: Zheng,-X.Q.; Ye,-C.X.; Kato,-M.; Crozier,-A.; Ashihara,-H.
TI: Theacrine (1,3,7,9-tetramethyluric acid) synthesis in leaves of a Chinese tea, kucha (Camellia assamica var. kucha).
SO: Phytochemistry-Oxford. Oxford : Elsevier Science Ltd. May 2002. v. 60 (2) p. 129-134.
AB: Theacrine (1,3,7,9-tetramethyluric acid) and caffeine were the major purine alkaloids in the leaves of an unusual Chinese tea known as kucha (Camellia assamica var. kucha). Endogenous levels of theacrine and caffeine in expanding buds and young leaves were ca. 2.8 and 0.6-2.7% of the dry wt, respectively, but the concentrations were lower in the mature leaves. Radioactivity from S-adenosyl-L-[methyl-14C]methionine was incorporated into theacrine as well as theobromine and caffeine by leaf disks of kucha, indicating that S-adenosyl-L-methionine acts as the methyl donor not only for caffeine biosynthesis but also for theacrine production. [8-14C]Caffeine was converted to theacrine by kucha

leaves with highest incorporation occurring in expanding buds. When [8-14C]adenosine, the most effective purine precursor for caffeine biosynthesis in tea (Camellia sinensis), was incubated with young kucha leaves for 24 h, up to 1% of total radioactivity was recovered in theacrine. However, pulse-chase experiments with [8-14C]adenosine demonstrated much more extensive incorporation of label into caffeine than theacrine, possibly because of dilution of [14C]caffeine produced by the large endogenous caffeine pool. These results indicate that in kucha leaves theacrine is synthesized from caffeine in what is probably a three-step pathway with 1,3,7-methyluric acid acting an intermediate. This is a first demonstration that theacrine is synthesized from adenosine via caffeine.

Record 29
AU: Ito,-Y.; Sugimoto,-A.; Kakuda,-T.; Kubota,-K.
TI: Identification of potent odorants in Chinese jasmine green tea scented with flowers of Jasminum sambac.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Aug 14, 2002. v. 50 (17) p. 4878-4884.
AB: The odorants in Chinese jasmine green tea scented with jasmine flowers (Jasminum sambac) were separated from the infusion by adsorption to Porapak Q resin. Among the 66 compounds identified by GC and GC/MS, linalool (floral), methyl anthranilate (grape-like), 4-hexanolide (sweet), 4-nonanolide (sweet),(E)-2-hexenyl hexanoate (green), and 4-hydroxy-2,5-dimethyl-3(2H)-furanone (sweet) were extracted as potent odorants by an aroma extract dilution analysis and sensory analysis. The enantiomeric ratios of linalool in jasmine tea and Jasminum sambac were determined by a chiral analysis for the first time in this study: 81.6% ee and 100% ee for the (R)-(-)-configuration, respectively. The jasmine tea flavor could be closely duplicated by a model mixture containing these six compounds on the basis of a sensory analysis. The omission of methyl anthranilate and the replacement of (R)-(-)-linalool by(S)-(+)-linalool led to great changes in the odor of the model. These two compounds were determined to be the key odorants of the jasmine tea flavor.

Record 30
AU: Saldana,-M.D.A.; Zetzl,-C.; Mohamed,-R.S.; Brunner,-G.
TI: Extraction of methylxanthines from guarana seeds, mate leaves, and cocoa beans using supercritical carbon dioxide and ethanol.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Aug 14, 2002. v. 50 (17) p. 4820-4826.
AB: New experimental data on the extraction of caffeine from guarana seeds and mate tea leaves, and theobromine from cocoa beans, with supercritical CO2 were obtained using a high-pressure extraction apparatus. The effect of the addition of ethanol to carbon dioxide on the extraction efficiency was also investigated. Caffeine extraction yields of 98% of the initial caffeine content in both wet ground guarana seeds and mate tea leaves were obtained. Extractions of caffeine from guarana seeds and mate tea leaves also exhibited a retrograde behavior for the two temperatures considered in this work. In the removal of theobromine from cocoa beans, a much smaller extraction yield was obtained with, longer extraction periods and consequently larger solvent requirements. The results of this study confirm the higher selectivity of CO2 for caffeine in comparison with that for theobromine, and also the influence of other components in each particular natural product on the extraction of methylxanthines. The effect of the addition of ethanol to carbon dioxide on the extraction of methylxanthines was significant, particularly in the extraction of theobromine from cocoa beans. In general, the use of ethanol results in lower solvent and energy requirements and thereby improved extraction efficiency.

Record 31
AU: Dashwood,-W.M.; Orner,-G.A.; Dashwood,-R.H.

TI: Inhibition of beta-catenin/Tcf activity by white tea, green tea, and epigallocatechin-3-gallate (EGCG): minor contribution of H2O2 at physiologically relevant EGCG concentrations.
SO: Biochem-biophys-res-commun. Orlando, Fla. : Academic Press. Aug 23, 2002. v. 296 (3) p. 584-588.

Record 32
AU: Ishii,-T.; Takatsuka,-J.; Nakai,-M.; Kunimi,-Y.
TI: Growth characeristics and competitive abilities of a nucleopolyhedrovirus and an entomopoxvirus in larvae of the smaller tea tortrix, Adoxophyes honmai (Lepidoptera: Tortricidae).
SO: Biol-control. Orlando, Fla. : Academic Press. Jan 2002. v. 23 (1) p. 96-105.
AB: We examined the effect of a mixed infection by Adoxophyes honmai nucleopolyhedrovirus (AdhoNPV) and A. honmai entomopoxvirus (AdhoEPV) on time to death of hosts and virus multiplication rate. Neonates and fourth-instar larvae of A. honmai were simultaneously or sequentially exposed to lethal concentrations of AdhoNPV and AdhoEPV. The number of viral occlusion bodies (OBs) that each virus produced was quantified and compared between mixed-infected and single-infected hosts. When each was separately introduced into fourth-instar larvae, AdhoNPV and AdhoEPV killed the host by 9 to 11 and 18 to 24 days postinfection (p.i.), respectively. The average number of OBs at time of host death was about 10(10) polyhedra/insect for AdhoNPV and 10(8.5) spheroids/insect for AdhoEPV. Fourth-instar larvae simultaneously inoculated with AdhoNPV and AdhoEPV died 9 to 11 days p.i. In this simultaneous mixed-infection treatment, AdhoEPV OB yield was significantly reduced, whereas AdhoNPV OB production was unaffected. However, when neonate larvae were exposed first to AdhoEPV and then to AdhoNPV only after molting to the fourth instar, AdhoNPV OB production was reduced and its final yield decreased to a few percent of the yield obtained in single-infected hosts, whereas AdhoEPV OB production was unaffected. These results suggest that the sequence or timing of infection significantly affects the OB production of both viruses. In larvae infected with each virus in sequence, the numbers of hemocytes containing both OB types were significantly fewer than that expected by random infection. These results suggest that AdhoNPV and AdhoEPV could reduce their fitness due to interference between them.

Record 33
AU: Guleria,-R.S.; Jain,-A.; Tiwari,-V.; Misra,-M.K.
TI: Protective effect of green tea extract against the erythrocytic oxidative stress injury during Mycobacterium tuberculosis infection in mice.
SO: Mol-cell-biochem. Dordrecht, The Netherlands : Kluwer Academic Publishers. July 2002. v. 236 (1/2) p. 173-181.

Record 34
AU: Young,-J.F.; Dragsted,-L.O.; Haraldsdottir,-J.; Daneshvar,-B.; Kall,-M.A.; Loft,-S.; Nilsson,-L.; Nielsen,-S.E.; Mayer,-B.; Skibsted,-L.H.
TI: Green tea extract only affects markers of oxidative status postprandially: lasting antioxidant effect of flavonoid-free diet.
SO: Br-j-nutr. London, U.K. : CAB International. Apr 2002. v. 87 (4) p. 343-355.
AB: Epidemiological studies suggest that foods rich in flavonoids might reduce the risk of cardiovascular disease and cancer. The objective of the present study was to investigate the effect of green tea extract (GTE) used as a food antioxidant on markers of oxidative status after dietary depletion of flavonoids and catechins. The study was designed as a 2 x 3 weeks blinded human cross-over intervention study (eight smokers, eight non-smokers) with GTE corresponding to a daily intake of 18.6 mg catechins/d. The GTE was incorporated into meat patties and consumed with a strictly controlled diet otherwise low in flavonoids. GTE intervention increased plasma antioxidant capacity from 1.35 to 1.56 ($P<0.02$) in postprandially collected plasma, most prominently in smokers.

The intervention did not significantly affect markers in fasting blood samples, including plasma or haemoglobin protein oxidation, plasma oxidation lagtime, or activities of the erythrocyte superoxide dismutase, glutathione peroxidase, glutathione reductase and catalase. Neither were fasting plasma triacylglycerol, cholesterol, alpha-tocopherol, retinol, beta-carotene, or ascorbic acid affected by intervention. Urinary 8-oxo-deoxyguanosine excretion was also unaffected. Catechins from the extract were excreted into urine with a half-life of less than 2 h in accordance with the short-term effects on plasma antioxidant capacity. Since no long-term effects of GTE were observed, the study essentially served as a fruit and vegetables depletion study. The overall effect of the 10-week period without dietary fruits and vegetables was a decrease in oxidative damage to DNA, blood proteins, and plasma lipids, concomitantly with marked changes in.
antioxidative defence.

Record 35
AU: Walden,-J.K.
TI: Miniature rose plant named 'Jachotta'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. Jan 15, 2002. (12,352) 2 p.
AB: A miniature rose plant having the unique combination of a compact, rounded growth habit; bright, deep pink colored, distinctive, small hybrid tea-shaped flowers; and small, dark green, disease resistant foliage.

Record 36
AU: Lata,-K.; Rajeshwari,-K.V.; Pant,-D.C.; Kishore,-V.V.N.
TI: Volatile fatty acid production during anaerobic mesophilic digestion of tea and vegetable market wastes.
SO: World-j-microbiol-biotechnol. Dordrecht, The Netherlands : Kluwer Academic Publishers. Aug 2002. v. 18 (6) p. 589-592.

Record 37
AU: Akiyama,-Y.; Yoshioka,-N.; Tsuji,-M.
TI: Pesticide residues in agricultural products monitored in Hyogo Prefecture, Japan, FYs 1995-1999.
SO: J-AOAC-Int. Gaithersburg, MD : AOAC International. May/June 2002. v. 85 (3) p. 692-703.
AB: During a 5-year monitoring survey (April 1995-March 2000) of pesticide residues in agricultural products, 765 samples (478 domestic; 287 imported) collected in Hyogo Prefecture, Japan, were analyzed. The number of pesticides tested increased from 107 in fiscal year (FY) 1995 to 204 in FY 1999. The purpose of the study was to promote consumer safety by excluding the food illegally containing pesticide residues from markets. Overall, 51% of domestic and 32% of imported samples contained no detectable residues. Multiple residues were detected in 152 (32%) of domestic and 146 (51%) of imported samples. The limit of quantitation was set at 0.01 microgram/g and the limit of detection was 0.001 microgram/g. Most of the residues were present at low concentrations; 70% of detections in domestic samples were <0.05 microgram/g, and 97% were <0.5 microgram/g. Although 86% of antifungal agent residues in imported citrus fruits were greater than or equal to 0.1 microgram/g, 59% of the other residues in imported samples were <0.05 microgram/g, and 96% were <0.5 microgram/g. Violations of maximum residue limits (MRL) were observed in 3 samples: diazinon in chrysanthemums, dieldrin in cucumbers, and bitertanol in bananas. Of the detectable residues above 0.01 microgram/g, 55% in domestic and 38% in imported samples were <10% of the MRL. Of all the samples, 2.4% contained more than 5 different pesticides; tomatoes, strawberries, apples, and citrus fruits tended to have more multiple residues.

Record 38
AU: Vickner,-S.S.; Davies,-S.P.

TI: Estimating strategic price response using cointegration analysis: the case of the domestic black and herbal tea industries.
SO: Agribusiness. New York : John Wiley & Sons, Inc. Spring 2002. v. 18 (2) p. 131-144.
AB: In this article we develop a vector error correction model using weekly, point-of-purchase scanner data to investigate multivariate pricing relationships among brands competing in the domestic black and herbal tea industries. Johansen's likelihood ratio test established the prices of Bigelow black tea and Celestial Seasonings herbal tea were cointegrated; hence, the pricing decisions of the largest firms in each respective tea market were not unrelated. The black tea prices of Bigelow and Twining, the two largest firms in the black tea market, were cointegrated as well. The cointegrating vectors, speeds of adjustment, and impulse response function analysis provide unique insights into the direction, magnitude, and speed of price response in these value-added, agricultural product markets.

Record 39
AU: Hodgson,-J.M.; Puddey,-I.B.; Burke,-V.; Beilin,-L.J.; Mori,-T.A.; Chan,-S.Y.
TI: Acute effects of ingestion of black tea on postprandial platelet aggregation in human subjects.
SO: Br-j-nutr. London, U.K. : CAB International. Feb 2002. v. 87 (2) p. 141-145.
AB: Results of population studies suggest that black tea can reduce cardiovascular risk. Effects of black-tea polyphenols to reduce platelet aggregability may help to explain any benefits. Given that black tea is often consumed with and after meals, and man spends much of his life in the postprandial state, the objective of the present study was to investigate the acute effects of ingestion of black tea on postprandial platelet aggregation ex vivo. Twenty healthy participants had platelet aggregation and blood lipids assessed before and 4 h after the ingestion of 50 g dairy fat on two occasions in random order, corresponding to black tea or hot water. Black tea or hot water (one cup) was consumed immediately following the dairy fat, then after 1.5 and 3.0 h. Platelet aggregation ex vivo was assessed in platelet-rich plasma in response to three concentrations of collagen (0.2, 0.6, 2.0 microgram/ml) and ADP (2, 4, 8 micromolar). Urinary concentrations of 4-O-methylgallic acid were used as an indicator that tea polyphenols were absorbed. Serum total cholesterol and triacylglycerol concentrations increased significantly 4 h after ingesting the dairy fat, but there was no significant difference between black tea and hot-water treatments on the cholesterol or triacylglycerol responses. Urinary 4-O-methylgallic acid concentrations were significantly increased following ingestion of black tea (P=0.0001) but not water. Black tea in comparison to hot water did not inhibit collagen or ADP-induced postprandial platelet aggregation. The results of this study do not support the suggestion that reduced postprandial platelet aggregability contributes to any benefits of black tea. on cardiovascular risk.

Record 40
AU: Yokozawa,-T.; Nakagawa,-T.; Kitani,-K.
TI: Antioxidative activity of green tea polyphenol in cholesterol-fed rats.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. June 5, 2002. v. 50 (12) p. 3549-3552.
AB: This study investigated the effects of green tea polyphenol on the serum antioxidative activity and cholesterol levels of cholesterol-fed rats and compared them with those of probucol, an antioxidant hypocholesterolemic agent. To evaluate the antioxidative activity, the susceptibility to oxidative modification of low-density lipoprotein (LDL) isolated from the serum of cholesterol-fed rats was measured, as was the serum antioxidative activity using the spontaneous autoxidation system of brain homogenate. Administration of green tea polyphenol effectively inhibited LDL oxidation and elevated serum antioxidative activity to the same degree as probucol. However, higher amounts

of polyphenol than probucol needed to be administered to reduce the total, free, and LDL cholesterol levels. Furthermore, green tea polyphenol increased the levels of high-density lipoprotein (HDL) cholesterol, leading to dose-dependent improvement of the atherogenic index, an effect that was not seen with probucol. Thus, green tea polyphenol may exert an antiatherosclerotic action by virtue of its antioxidant properties and by increasing HDL cholesterol levels.

Record 41
AU: Matsumoto,-S.; Kiriiwa,-Y.; Takeda,-Y.
TI: Differentiation of Japanese green tea cultivars as revealed by RFLP analysis of phenylalanine ammonia-lyase DNA.
SO: Theor-appl-genet. Berlin; Springer-Verlag. May 2002. v. 104 (6/7) p. 998-1002.
AB: Japanese green tea cultivars and 463 local tea plants including mountainous tea, yama-cha, were analyzed to determine the process of differentiation of Japanese tea plants using phenylalanine ammonia lyase (PAL) as a DNA marker. The main DNA fragments detected by RFLP analysis, which were named A, B and D, were inherited as multiple allelic genes at one locus. Japanese tea cultivars were divided into five groups according to RFLPs: AA, AB, AD, BD and DD. The AA group included many cultivars selected from local tea plants. The BD group consisted of cv Yabukita or descendants from Yabukita produced by artificial crossing. There was no BB group of cultivars. Allelic frequencies of A, B and D were 0.66, 0.08 and 0.22, respectively, and these values were same in tea plants collected from all regions of Japan. Since the frequencies in yama-cha and local tea plants were also the same, it is thought that these teas have the same origin. These results indicate a process of differentiation from the ancestral material presumably introduced from China to the local tea plants and, finally, cultivars which were produced by selecting from local tea plants and crossing.

Record 42
AU: Nakagawa,-T.; Yokozawa,-T.; Terasawa,-K.; Shu,-S.; Juneja,-L.R.
TI: Protective activity of green tea against free radical- and glucose-mediated protein damage.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Apr 10, 2002. v. 50 (8) p. 2418-2422.
AB: Protein oxidation and glycation are posttranslational modifications that are implicated in the pathological development of many age-related disease processes. This study investigated the effects of green tea extract, and a green tea tannin mixture and its components, on protein damage induced by 2,2'-azobis(2-amidinopropane) dihydrochloride (a free radical generator) and glucose in in vitro assay systems. We found that green tea extract can effectively protect against protein damage, and showed that its action is mainly due to tannin. In addition, it was shown that the chemical structures of tannin components are also involved in this activity, suggesting that the presence of the gallate group at the 3 position plays the most important role in the protective activity against protein oxidation and glycation, and that there is also a contribution by the hydroxyl group at the 5' position in the B ring and the sterical structure. These findings demonstrate the mechanisms of the usefulness of green tea in protein oxidation- and glycation-associated diseases.

Record 43
AU: Ito,-H.; Kobayashi,-E.; Li,-S.H.; Hatano,-T.; Sugita,-D.; Kubo,-N.; Shimura,-S.; Itoh,-Y.; Tokuda,-H.; Nishino,-H.
TI: Antitumor activity of compounds isolated from leaves of Eriobotrya japonica.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Apr 10, 2002. v. 50 (8) p. 2400-2403.
AB: In a search for possible antitumor agents from natural sources, megastigmane glycosides and polyphenolic constituents isolated from the leaves of Eriobotrya japonica (Rosaceae) were found to inhibit the 12-O-tetradecanoylphorbol-13-acetate (TPA)-induced activation of Epstein-Barr virus

early antigen in Raji cells. Roseoside and procyanidin B-2 were among the active compounds found in an in vitro assay; these compounds were further assessed for antitumor activity in vivo in a two-stage carcinogenesis assay on mouse skin. Roseoside significantly delayed carcinogenesis induced by peroxynitrite (initiator) and TPA (promoter), and its potency was comparable to that of a green tea polyphenol, (-)-epigallocatechin 3-O-gallate, in the same assay.

Record 44
AU: Feng,-Q.; Torii,-Y.; Uchida,-K.; Nakamura,-Y.; Hara,-Y.; Osawa,-T.
TI: Black tea polyphenols, theaflavins, prevent cellular DNA damage by inhibiting oxidative stress and suppressing cytochrome P450 1A1 in cell cultures.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Jan 2, 2002. v. 50 (1) p. 213-220.
AB: Tea polyphenols have been demonstrated as chemopreventive agents in a number of experimental models. However, less is known about the mechanism of chemoprevention by black tea compared with that of green tea. Some beneficial properties of theaflavins, the black tea polyphenols, were investigated in the present study. Theaflavins showed inhibitory effects on H2O2- and tert-butyl hydroperoxide (tBuOOH)-induced cytotoxicity (evaluated by tetrazolium bromide reduction), cellular oxidative stress (detected by oxidation of 2', 7'-dichlorofluorescin), and DNA damage (measured by amount of 8-OHdG and comet assay) in rat normal liver epithelium cell RL-34 cell lines. In addition, theaflavins also exhibited suppression of cytochrome P450 1A1 induced by omeprazole in the human hepatoma HepG2 cell line. Furthermore, when HepG2 cells were pretreated with omeprazole to induce CYP1A1, then exposed to benzo[a]pyrene (B[a]P), DNA damage was observed using the comet assay. However, theaflavins could inhibit this DNA damage. These results indicated that theaflavins could prevent cellular DNA damage by inhibiting oxidative stress and suppressing cytochrome P450 1A1 in cell cultures.

Record 45
AU: Meilland,-A.A.
TI: Hybrid tea rose plant named 'Meileyet'.
SO: US-pat-Plant. [Washington, D.C. : U.S. Patent and Trademark Office, 1976-. Mar 26, 2002. (12,499) 2 p.
AB: A new and distinct variety of Hybrid Tea rose plant is provided which forms attractive double blossoms that are pale pink bordered with pink depending on the season. Such blossoms possess no fragrance. The plant exhibits an erect growth habit, dark green and semi-glossy foliage, and very good disease resistance. The new variety is particularly well suited for producing cut flowers under greenhouse growing conditions.

Record 46
AU: Burns,-J.; Yokota,-T.; Ashihara,-H.; Lean,-M.E.J.; Crozier,-A.
TI: Plant foods and herbal sources of resveratrol.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. May 22, 2002. v. 50 (11) p. 3337-3340.
AB: Stilbenes, in particular trans-resveratrol and its glucoside, are widely reported to be beneficial to health, having been shown to possess antioxidative, anticarcinogenic, and antitumor properties. Major dietary sources include grapes, wine, peanuts, and soy; however, they can also be introduced into the diet through Itadori tea, which has long been used in Japan and China as a traditional herbal remedy for heart disease and strokes. Analysis of grapes, peanuts, and Itadori tea shows that they contain mainly trans-resveratrol glucoside. In contrast, red wines are primarily a source of the aglycones cis- and trans-resveratrol. While peanuts and grapes contain low levels of the stilbenes, Itadori tea and red wine both supply relatively high concentrations of resveratrol. For people who do not consume alcohol, Itadori tea may be a suitable substitute for red wine. However, further study on the potential biological effects of other endogenous compounds in Itadori tea is required and

there is also a need for more information on the absorption and in vivo biomedical actions of free and conjugated resveratrol.

Record 47
AU: Khokhar,-S.; Magnusdottir,-S.G.M.
TI: total phenol, catechin, and caffeine contents of teas commonly consumed in the United Kingdom.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Jan 30, 2002. v. 50 (3) p. 565-570.
AB: Levels of total phenol, catechins, and caffeine in teas commonly consumed in the United Kingdom have been determined using reversed phase high-performance liquid chromatography. Tea bags or tea leaves were purchased from local supermarkets and extracted in boiling water for 5 min. The resulting data showed considerable variability in both total phenols [80.5-134.9 mg/g of dry matter (DM) in black teas and 87-106.2 mg/g of DM in green teas] and catechins (5.6-47.5, 51.5-84.3, and 8.5-13.9 mg/g of DM in black, green, and fruit teas, respectively); this was most probably a result of differing agronomic conditions, leaf age, and storage during and after transport, as well as the degree of fermentation. Caffeine contents of black teas (22-28 mg/g of DM) were significantly higher than in less fermented green teas (11-20 mg/g of DM). The relative concentration of the five major tea catechins ranked EGCG > ECG > EC > EGC > C. The estimated U.K. dietary intakes of total tea catechins, calculated on the basis of an average tea consumption of three cups of tea (200 mL cup, 1% tea leaves w/v), were 61.5, 92.7, and 405.5 mg/day from fruit teas, black teas, and green teas, respectively. The coefficients of variation were 19.4, 88.6, and 17.3%, respectively, indicating the wide variation in these intakes. The calculated caffeine intake ranged between 92 and 146 mg/day. In addition, many individuals will consume much larger quantities of tea, of various strengths (as determined by the brewing conditions employed). This broad spread of U.K. daily intakes further emphasizes the need for additional research to relate intake and effect in various population groups.

Record 48
AU: Silva,-E.; Jopia,-M.; Edwards,-A.M.; Lemp,-E.; Fuente,-J.R.-de-la.; Lissi,-E.
TI: Protective effect of Boldo and tea infusions on the visible light-mediated pro-oxidant effects of vitamin B2, riboflavin.
SO: Photochem-photobiol. Augusta, GA : American Society for Photobiology. June 2002. v. 75 (6) p. 585-590.
AB: The effect of Boldo and black tea infusions on the prooxidant effects of vitamin B2, riboflavin (RF), when exposed to the action of visible light was studied. The amounts of antioxidants present in Boldo and tea infusions were evaluated by a procedure based on the bleaching of preformed 2,2'-azinobis(3-ethylbenzothiazoline-6-sulfonic acid) radical cations and were expressed as 6-hydroxy-2,5,7,8-tetramethyl-chroman-2-carboxylic acid equivalent concentrations. The quenching rate constants of singlet oxygen (1O2; (kq]Boldo = 6.0 x 10(7) M-1 s-1 and (kq]Tea = 3.2 x 10(7) M-1 s-1) and triplet RF (3RF; [3RFkq]Boldo = 10 x 10(8) M-1 s-1 and [3RFkq]TEA = 3.2 x 10(8) M-1 s-1) with Boldo and tea were determined by flash photolysis. These data allow a quantitative interpretation of the results obtained. Our data suggest that most or the oxygen consumption observed in the photolysis of RF in the presence of tea and Boldo infusions is caused by 1O2 reactions. The oxygen consumption quantum yield is considerably smaller than the fraction of RF triplets trapped by the additives (AH) present in the infusion, indicating that their interaction with 3RF does not lead to chemical reactions or that the AH radical cation initially formed participate in secondary processes that do not consume oxygen. Boldo and tea infusions have a significant protective effect when a system containing RF and tryptophan (Trp) is exposed to visible light, not only by quenching the 1O2 and interfering with the Type-I mechanism but also by repairing the damage to Trp molecules associated with the latter mechanism.

Record 49
AU: Young-Goo,-P.; Kaundun,-S.S.; Zhyvoloup,-A.
TI: Use of bulked genomic DNA-based RAPD methdology to assess the genetic diversity among abandoned Korean tea plantations.
SO: Genet-resour-crop-evol. Dordrecht, The Netherlands : Kluwer Academic Publishers, c1992-. Apr 2002. v. 49 (2) p. 159-165.
AB: The variability of 20 abandoned Korean tea plantations was investigated using the RAPD methodology and the bulked DNA procedure. Out of 50 primers screened, 13 revealed diversity among the populations and generated 26 polymorphic markers in all. Two and two populations were indistinguishable from each other and in general, the diversity detected among the populations was relatively low. The genetic distance calculated from the Jaccard's variability index varied from 0 to 0.79 with an average of 0.44. The low genetic diversity found in this study could be explained by the narrow genetic base of the Korean tea populations introduced from Mainland China, by the short history and relatively homogeneous environment of the populations, by mass destruction of local tea plantations in the 14th century and by the reproductive mode of Camellia sinensis. Indeed, Camellia sinensis being a highly outcrossing species maintains high intrapopulational variability as compared to its interpopulation variability. In the light of the results obtained, a strategy for local tea conservation is discussed.

Record 50
AU: Hu,-M.; Skibsted,-L.H.
TI: Kinetics of reduction of ferrylmyoglobin by (-)-epigallocatechin gallate and green tea extract.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. May 8, 2002. v. 50 (10) p. 2998-3003.
AB: The hypervalent heme pigment ferrylmyoglobin, a potential prooxidant in muscle tissue and meat, is efficiently reduced by epigallocatechin gallate (EGCG) from green tea and by green tea polyphenol extract (GTP) in neutral or moderately acidic aqueous solution (0.16 M NaCl) to yield metmyoglobin in two parallel processes. The second-order rate constant for direct reduction at pH 7.4 and 25 degrees C was found to have the value 1170 +/- 83 M-1(.)s-1 and activation parameters deltaH# = 70.6 +/- 7.2 kJ(.)mol-1 and deltaS# = 50.7 +/- 24.1 J(.)mol-1(.)K-1 for EGCG and the value 2300 +/- 77 M-1(.)s-1 and parameters deltaH# = 60.6 +/- 2.6 kJ(.)mol-1 and deltaS# = 23 +/- 9 J(.)mol-1(.)K-1 for GTP (based on EGCG concentration). For decreasing pH, the rate increased moderately due to a parallel reduction of protonated ferrylmyoglobin. At physiological pH, EGCG is more efficient in deactivating ferrylmyoglobin than other plant phenols investigated, and the relatively high enthalpy and positive entropy of activation suggest an outer-sphere electron transfer mechanism. The interaction between EGCG and other tea catechins in GTP could be responsible for the even stronger ability for GTP to deactivate ferrylmyoglobin.

Record 51
AU: Stapanov,-I.; Carmella,-S.G.; Hecht,-S.S.; Duca,-G.
TI: Analysis of tobacco-specific nitrosamines in Moldovan cigarette tobacco.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. May 8, 2002. v. 50 (10) p. 2793-2797.
AB: Tobacco-specific nitrosamines (TSNA) are among the most important and abundant strongly carcinogenic agents in unburned tobacco. It has been established that 4-(methylnitrosamino)-1-(3-pyridyl)-1-butanone (NNK) induces lung tumors in rodents independent of the route of administration. N'-Nitrosonornicotine (NNN) causes tumors of the esophagus and nasal cavity in rats, lung in mice, and respiratory tract in hamsters. Although the manufacturing of cigarettes is an important domain of Moldovan industry, there are no reports in the literature on TSNA analysis in Moldovan tobacco. The main purpose of the present study was an initial evaluation of TSNA levels in Moldovan cigarette tobacco. Eighteen brands of Moldovan cigarettes, representing 78% of all brands produced in Moldova, were analyzed. Four TSNA--NNN, NNK, N'-

nitrosoanatabine (NAT), and N'-nitrosoanabasine (NAB)--were analyzed by gas chromatography with nitrosamine selective detection (GC-TEA). Levels of TSNA in most Moldovan cigarettes were substantially lower than in American brands. Mean levels of NNN in three commercial American brands were 3.32 +/- 0.88 (SD) microgram/g as compared to 0.579 +/- 0.548 microgram/g, range 0.093-2.09 microgram/g (N = 18), in the cigarettes produced in Moldova. For NNK and NAT, mean levels in the American brands were 1.57 +/- 0.178 and 1.99 +/- 0.579 microgram/g, respectively, while the corresponding values for Moldovan cigarettes were 0.193 +/- 0.089, range 0.104-0.484 microgram/g, and 0.160 +/- 0.114 microgram/g, range 0.055-0.481 microgram/g. The highest levels of NNN-1.10-2.09 microgram/g-were observed in "American type" cigarettes manufactured from high-quality tobacco. The results of.
this study should be useful in heightening the awareness of the dangers of smoking in Moldova and can be envisioned as the initial step in the control of tobacco-related cancer in this republic.

Record 52
AU: Arteel,-G.E.; Uesugi,-T.; Bevan,-L.N.; Gabele,-E.; Wheeler,-M.D.; McKim,-S.E.; Thurman,-R.G.
TI: Green tea extract protects against early alcohol-induced liver injury in rats.
SO: Biol-Chem. Berlin ; New York : W. de Gruyter, c1996-. Mar/Apr 2002. v. 383 (3/4) p. 663-670.

Record 53
AU: Han,-B.Y.; Chen,-Z.M.
TI: Composition of the volatiles from intact and mechanically pierced tea aphid-tea shoot complexes and their attraction to natural enemies of the tea aphid.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Apr 24, 2002. v. 50 (9) p. 2571-2575.
AB: The volatile components from intact tea shoots (ITS), obtained by air entrainment, were identified by their mass spectra and retention times and confirmed by comparison with standard samples. They are E-2-hexenal, ocimene, Z-3-hexenyl acetate, Z-3-hexen-1-ol, butanoic acid-3-hexenyl ester, linalool, 1-octanol, geraniol, and indole. Volatiles from mechanically pierced tea shoots (MPTS) were identified as E-2-hexenal, ocimene, Z-3-hexen-1-ol, butanoic acid-3-hexenyl ester, linalool, geraniol, indole, E-2-hexenoic acid, Z-3-hexenyl formate, methyl salicylate, and benzyl alcohol, and volatiles from tea aphid-tea shoot complexes (TATSC) were identified as E-2-hexenal, ocimene, Z-3-hexenyl acetate, Z-3-hexen-1-ol, linalool, geraniol, indole, benzaldehyde, and E-2-hexenoic acid. Z-3-Hexen-1-ol is the main component in the three different types of volatiles, and the amount of benzaldehyde in TATSC volatiles is very ample. The attraction of the volatiles from ITS, MPTS, and TATSC, and the nine components of TATSC volatiles to the natural enemies, the coccinellid, Coccinella septempunctata, the parasite, Aphidius sp., and the lacewing, Chrysopa sinica, were determined by electroantennogram (EAG) and the wind tunnel bioassay. TATSC volatiles and benzaldehyde elicited much larger EAG responses and stronger upwind flight and arresting behavior from each natural enemy in the wind tunnel than other infochemicals.

Record 54
AU: Singh,-A.K.; Seth,-P.; Anthony,-P.; Husain,-M.M.; Madhavan,-S.; Mukhtar,-H.; Maheshwari,-R.K.
TI: Green tea constituent epigallocatechin-3-gallate inhibits angiogenic differentiation of human endothelial cells.
SO: Arch-biochem-biophys. Orlando, Fla. : Academic Press. May 1, 2002. v. 401 (1) p. 29-37.

Record 55
AU: Wang,-Y.C.; Bachrach,-U.

TI: The specific anti-cancer activity of green tea (-)-epigallocatechin-3-gallate (EGCG).
SO: Amino-acids. Wien ; New York : Springer-Verlag, c1991-. Mar 2002. v. 22 (2) p. 131-143.

Record 56
AU: Tanaka,-T.; Mine,-C.; Inoue,-K.; Matsuda,-M.; Kouno,-I.
TI: Synthesis of theaflavin from epicatechin and epigallocatechin by plant homogenates and role of epicatechin quinone in the synthesis and degradation of theaflavin.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Mar 27, 2002. v. 50 (7) p. 2142-2148.
AB: Oxidation products of (-)-epicatechin and (-)-epigallocatechin by treatment with homogenates of 62 plants belonging to 49 families were compared. Forty-six plants were capable of synthesizing theaflavin, a black tea pigment, regardless of whether they contained catechins. Loquat, Japanese pear, and blueberry had activities higher than that of fresh tea leaves after 5 h of treatment; furthermore, these plants oxidized theaflavin to theanaphthoquinone. An additional new metabolite, dehydrotheasinensin, was generated on treatment with fresh tea leaves, eggplant, and unripened Japanese orange. Evidence for the oxidation of epigallocatechin and theaflavin by electron transfer to epicatechin quinone was demonstrated in a time course study using bananas and trapping the quinone intermediates as glutathione conjugates.

Record 57
AU: Fernandez,-P.L.; Pablos,-F.; Martin,-M.J.; Gonzalez,-A.G.
TI: Study of catechin and xanthine tea profiles as geographical tracers.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Mar 27, 2002. v. 50 (7) p. 1833-1839.
AB: The contents of gallic acid, epigallocatechin gallate, epigallocatechin, epicatechin, epicatechin gallate, catechin, caffeine, teophylline, and theobromine were determined in a set of 45 tea samples, including fermented (black and red) and nonfermented (green) teas of different geographical origins (i.e., China, Japan, Kenya, Sri Lanka, and India). A reversed-phase high performance liquid chromatographic method with gradient elution and photometric detection at 275 nm was used to carry out the analysis. Before the HPLC determination, an extraction step was developed using a mixture of acetonitrile and water (60:40, v/v). Pattern recognition techniques involving principal component analysis (PCA) and linear discriminant analysis (LDA) were applied to differentiate the tea samples according to their geographical origins. Catechins, gallic acid, and tea alkaloids are adequate chemical descriptors to distinguish between fermented and nonfermented tea samples cultivated in different geographical areas.

Record 58
AU: Mohotti,-A.J.; Lawlor,-D.W.
TI: Diurnal variation of photosynthesis and photoinhibition in tea: effects of irradiance and nitrogen supply during growth in the field.
SO: J-exp-bot. Oxford : Oxford University Press. Feb 2002. v. 53 (367) p. 313-322.
AB: Diurnal changes in the rate of photosynthesis (A) of mature tea (Camellia sinensis (L.) O. Kuntze) bushes grown at high elevation in the field in Sri Lanka, were related to environmental conditions. Bushes were either unshaded, receiving 100% of incident photosynthetically active radiation (PAR), moderately shaded, (65% PAR) or heavily shaded (30% PAR). These treatments were combined with nitrogen fertilizer applications of 0, 360 and 720 kg ha(-1) year(-1). When recently fully expanded leaves were measured under the growing conditions on bright, clear days from dawn to dusk, A was greatest in the morning with increasing radiation between approximately 8 h and 10 h. Stomatal conductances (g(s)) and substomatal carbon dioxide concentrations (C(i)) were then large, leaf temperatures (T(L)) cool, and saturated water vapour deficits (VPD) small.

However, as the irradiance, T(L) and VPD increased towards midday, A, g(s), photochemical quenching, and C(i) decreased, and non-photochemical quenching increased. In the late afternoon, irradiance, T(L) and VPD fell, but despite the relatively large increase in g(s) and C(i), A remained low; however, it recovered overnight. The zero-N treatment decreased total-N content of leaves by 50% and A by c. 20% (not significant). Leaves of unshaded plants receiving least N had significantly (P<0.05) smaller A and greater total sugar content than shaded but with abundant N, A and sugars did not differ between shade treatments. Analysis of the responses of A to environment in the morning compared to the afternoon, and of chlorophyll fluorescence, suggests that A was photoinhibited as a consequence of greatly increased PAR, whilst decreasing g(s) (related to.

changes in PAR, VPD and T(L)) caused C(i) to fall. End-product inhibition of A is not consistent with decreased C(i). Inhibition of A as a result of photoinhibition was minimized, but not eliminated, by abundant N. Interactions between factors regulating A in tea are discussed.

Record 59
AU: Inoue,-M.B.; Inoue,-M.; Fernando,-Q.; Valcic,-S.; Timmermann,-B.N.
TI: Potentiometric and 1H NMR studies of complexation of Al(3+) with (-)-epigallocatechin gallate, a major active constituent of green tea.
SO: J-inorg-biochem. New York, N.Y. : Elsevier Science Inc. Jan 1, 2002. v. 88 (1) p. 7-13.
AB: The acid dissociation of (-)-epigallocatechin gallate (abbreviated as egcg) and its complexation with Al3+ were studied by potentiometric titrations, and were compared with those of (-)-epicatechin (ec) and (-)-epigallocatechin (egc). In Al3+ -ec and Al3+ -egc reaction systems, [Al(LH-2)]+, [Al(LH-2)(OH)]0, and [Al(LH-2)2]- are formed, as reported for Al3+ -catechin (c). Reactions between Al3+ and egcg at pH <4.1 yield AlLH-2 and AlLh-3 species. The 1H NMR studies have shown that two hydroxyl groups of the gallate (D) ring are deprotonated and coordinated to an Al3+ ion in [Al(egcgH-2)]+. The AlLH-3 species of egcg is supposed to be formulated as [Al(egcgH-3)]0 in which one hydroxyl group of the pyrogallol (B) ring and two hydroxyl groups of the D ring are deprotonated; an Al3+ ion is coordinated to two oxygen atoms of the D ring and one oxygen atom from the B ring of the neighboring chelate molecule, resulting in the formation of a polymeric structure. In the Al3+ complex of egcg, the gallate group forms major coordinate bonds and results in solution properties that are different from those of ec, egc and c which have no gallate group.

Record 60
AU: Charlton,-A.J.; Baxter,-N.J.; Khan,-M.L.; Moir,-A.J.G.; Haslam,-E.; Davies,-A.P.; Williamson,-M.P.
TI: Polyphenol/peptide binding and precipitation.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Mar 13, 2002. v. 50 (6) p. 1593-1601.
AB: Polyphenols are largely responsible for the astringency and "mouthfeel" of tea and wine by their interactions with basic salivary proline-rich proteins. Astringency arises from precipitation of polyphenol/peptide complexes, which is an important protective mechanism in animals that consume polyphenols. This paper presents biophysical studies of the interactions between chemically defined polyphenols and peptides. It is shown that intermolecular binding is dominated by stacking of polyphenolic rings onto planar hydrophobic surfaces and is strengthened by multiple cooperative binding of polyphenolic rings. Affinities weaken at higher temperatures and are unaffected by pH between pH 3.8 and 6.0. Measurements of self-diffusion rates for peptides with increasing concentrations of polyphenol demonstrate that peptides become increasingly coated with polyphenol. When the coating is sufficiently extensive to provide cooperative polyphenol bridges, the peptide dimerizes and precipitates. Light scattering measurements and electron microscopy indicate that the insoluble particles fall into two discrete size classes of ca. 80 and 500 nm diameter. The larger particles are favored at higher temperature and pH, suggesting that the

particles are in a colloidal state, with the smaller particles being stabilized by charge repulsion between particles, and that precipitation of the complexes may be a phase separation process.

Record 61
AU: Leenen,-R.; Roodenburg,-A.J.C.; Vissers,-M.N.; Schuurbiers,-J.A.E.; Putte,-K.P.A.M.-van.; Wiseman,-S.A.; Put,-F.H.M.M.-van-de.
TI: Supplementation of plasma with olive oil phenols and extracts: influence on LDL oxidation.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Feb 27, 2002. v. 50 (5) p. 1290-1297.
AB: Phenols present in olive oil may contribute to the health effects of the Mediterranean lifestyle. Olive oil antioxidants increase the resistance of low-density lipoproteins (LDL) against oxidation in vitro, but human intervention studies have failed to demonstrate similar consistent effects. To better mimic the in vivo situation, plasma was incubated with either individual olive oil phenols or olive oil extracts with different phenolic compositions, and LDL was subsequently isolated and challenged for its resistance to oxidation. The results show that the ortho-dihydroxy phenols (hydroxytyrosol and oleuropein-aglycone) are more efficient than their mono-hydroxy counterparts (tyrosol and ligstroside-aglycone) in increasing the resistance of LDL to oxidation. However, the concentration of antioxidants required to inhibit LDL oxidation when added to whole plasma was substantially higher as compared to previous data where antioxidants are directly added to isolated LDL. In conclusion, this study supports the hypothesis that extra virgin olive oil phenols protect LDL in plasma against oxidation. The explanation that in vitro studies show protective effects in contrast to the lack of effect in the majority of human studies may be that the dose of the phenols and thus their plasma concentration in humans was too low to influence ex vivo LDL oxidizability. Further studies are required to gain a better understanding of the potential health benefits that extra virgin olive oil may provide.

Record 62
AU: Arts,-M.J.T.J.; Haenen,-G.R.M.M.; Wilms,-L.C.; Beetstra,-S.A.J.N.; Heijnen,-C.G.M.; Voss,-H.P.; Bast,-A.
TI: Interactions between flavonoids and proteins: effect on the total antioxidant capacity.
SO: J-agric-food-chem. Washington, D.C. : American Chemical Society. Feb 27, 2002. v. 50 (5) p. 1184-1187.
AB: Flavonoids are potent antioxidants. It is also known that flavonoids bind to proteins. The effect of the interaction between tea flavonoids and proteins on the antioxidant capacity was examined. Their separate and combined antioxidant capacities were measured with the Trolox equivalent antioxidant capacity (TEAC) assay. It was observed that the antioxidant capacity of several components of green and black tea with alpha-, beta-, and kappa-casein or albumin is not additive; that is, a part of the total antioxidant capacity is masked by the interaction. This masking depends on both the protein and the flavonoid used. Components in green and black tea, which show the highest masking in combination with beta-casein, are epigallocatechin gallate and gallic acid. The results demonstrate that the matrix influences the efficacy of an antioxidant.

Record 63
AU: Kmitta,-J.
TI: Something's brewing: The benefits of compost tea.
SO: Arbor-age. Cathedral City, Calif. : Adams Business Media. Apr 2002. v. 22 (4) p. 36-37.

Record 64
AU: Lee,-L.S.; Brooks,-L.O.; Homer,-L.E.; Rossetto,-M.; Henry,-R.J.; Baverstock,-P.R.

TI: Geographic variation in the essential oils and morphology of natural populations of Melaleuca alternifolia (Myrtaceae).
SO: Biochem-syst-ecol. Oxford, U.K. : Elsevier Science Ltd. Apr 2002. v. 30 (4) p. 343-360.
AB: In recent decades, Melaleuca alternifolia has been grown in plantations for the commercial production of tea tree oil extracted from harvested leaf and stem material by steam distillation. Plantations are grown from seedlings raised from seeds collected from wild populations of this endemic Australian species. Considerable variation in morphology and leaf oil composition and yield has been observed and studies have demonstrated genetic and phenotypic heterozygosity between populations. Here we examine the variation in leaf oil chemical composition (chemotypes) between geographically defined locations of wild populations of M. alternifolia and investigate the relationships between tree size, chemotype and geographic location. Forty separate populations of M. alternifolia distributed amongst three river catchments (two in a warm moist coastal region and one in cool drier highlands) were studied. Total variation in tree size was significantly greater within individual sites than between them. However, the highland catchment populations exhibited significantly smaller mean tree size and a significantly different chemotype profile than the lowland populations. Contrary to the observation of lower genetic diversity, the highland catchment populations had greater chemotypes diversity. Furthermore, highly significant differences in population chemotypes were demonstrated between catchments. The possibilities that these differences could be ascribed to either genetic divergence or to environmental differences are discussed.

Record 65
AU: Robb,-C.S.; Geldart,-S.E.; Seelenbinder,-J.A.; Brown,-P.R.
TI: Analysis of green tea constituents by HPLC-FTIR.
SO: J-liq-chromatogr-relat-technol. Monticello, NY : Marcel Dekker, Inc. 2002. v. 25 (5) p. 787-801.

Record 66
AU: Fiedler,-H.; Cheung,-C.K.; Wong,-M.H.
TI: PCDD/PCDF, chlorinated pesticides and PAH in Chinese teas.
SO: Chemosphere. Kidlington, Oxford, U.K. : Elsevier Science Ltd. Mar 2002. v. 46 (9/10) p. 1429-1433.

Record 67
AU: Bachrach,-U.; Wang,-Y.C.
TI: Cancer therapy and prevention by green tea: role of ornithine decarboxylase.
SO: Amino-acids. Wien ; New York : Springer-Verlag, c1991-. Feb 2002. v. 22 (1) p. 1-13.

Record 68
AU: Hasegawa,-N.; Niimi,-N.; Odani,-F.
TI: Vitamin C is one of the lipolytic substances in green tea.
SO: PTR,-Phytother-res. West Sussex : John Wiley & Sons Ltd. Mar 2002. v. 16 (S1) p. S91-S92.

Record 69
AU: Das,-M.; Sur,-P.; Gomes,-A.; Vedasiromoni,-J.R.; Ganguly,-D.K.
TI: Inhibition of tumour growth and inflammation by consumption of tea.
SO: PTR,-Phytother-res. West Sussex : John Wiley & Sons Ltd. Mar 2002. v. 16 (S1) p. S40-S44.

Record 70
AU: Fadhel,-Z.A.; Amran,-S.
TI: Effects of black tea extract on carbon tetrachloride-induced lipid peroxidation in liver, kidneys, and testes of rats.

SO: PTR,-Phytother-res. West Sussex : John Wiley & Sons Ltd. Mar 2002. v. 16 (S1) p. S28-S32.

Record 71
AU: Benelli,-R.; Vene,-R.; Bisacchi,-D.; Garbisa,-S.; Albini,-A.
TI: Anti-invasive effects of green tea polyphenol epigallocatechin-3-gallate (EGCG), a natural inhibitor of metallo and serine proteases.
SO: Biol-Chem. Berlin ; New York : W. de Gruyter, c1996-. Jan 2002. v. 383 (1) p. 101-105.

Record 72
AU: Strong,-W.L.
TI: Lodgepole pine/Labrador tea type communities of western Canada.
SO: Can-j-bot. Ottawa : National Research Council of Canada, 1951-. Feb 2002. v. 80 (2) p. 151-165.

Record 73
AU: Hu,-Q.H.; Pan,-G.X.; Zhu,-J.C.
TI: Effect of fertilization on selenium content of tea and the nutritional function of Se-enriched tea in rats.
SO: Plant-soil. Dordrecht, The Netherlands : Kluwer Academic Publishers. Jan 2002. v. 238 (1) p. 91-95.

Record 74
AU: Anandacoomaraswamy,-A.; Costa,-W.A.J.M.-de.; Tennakoon,-P.L.K.; Werf,-A.-van-der.
TI: The physiological basic of increased biomass partitioning to roots upon nitrogen deprivation in young clonal tea (Camellia sinensis (L.) O. Kuntz).
SO: Plant-soil. Dordrecht, The Netherlands : Kluwer Academic Publishers. Jan 2002. v. 238 (1) p. 1-9.

Record 75
AU: Fung,-K.F.; Wong,-M.H.
TI: Effects of soil pH on the uptake of Al, F and other elements by tea plants.
SO: J-sci-food-agric. West Sussex : John Wiley & Sons Limited. Jan 1, 2002. v. 82 (1) p. 146-152.
AB: Soil extractable Al, F and Zn concentrations decreased whereas extractable Ca, Cu, K, Mg, Na and P concentrations increased when the soil pH was raised from 3 to 6. These trends led to a decrease in growth of tea seedlings as determined by measurements of relative dry weight gain (RDW), relative leaf number gain (RLN) and relative leaf area gain (RLA). Tea seedlings of both 'large-leafed' and 'small-leafed' varieties grown in soils at pH 3 and 3.5 were the tallest and healthiest, while those at pH 6 died after 3 months. The large-leafed variety showed higher growth rates than the small-leafed variety. The highest ($p < 0.05$) amounts of Al and F, 4225 and 430 mg kg(-1) respectively, were found in seedlings under pH 3.5 treatment. When Al and F concentrations in seedlings increased, elements such as Ca, Mg, Na and Zn gently decreased ($p < 0.05$) whereas P increased. K and Cu were not affected. The results indicated that soil pH values higher than 4 reduced Al and F concentrations in tea plants.

Record 76
AU: Solomon,-D.; Fritzsche,-F.; Tekalign,-M.; Lehmann,-J.; Zech,-W.
TI: Soil organic matter composition in the subhumid Ethiopian highlands as influenced by deforestation and agricultural management.
SO: Soil-Sci-Soc-Am-j. [Madison, Wis.] Soil Science Society of America. Jan/Feb 2002. v. 66 (1) p. 68-82.
AB: Physical fractionation, degradative wet-chemical analysis and liquid-state 13C nuclear magnetic resonance (NMR) spectroscopy were used to assess the impact of land use changes on the amount and structural composition of soil organic matter (SOM) in bulk soils and size separates in the subhumid highlands of southern Ethiopia. Soil samples (0-10 cm) were collected from natural forest,

tea plantations, 25-yr cultivated fields at Wushwush (Paleudalf), Podocarpus-dominated natural forest, Cupressus plantations, and 30-yr cultivated fields at Munesa (Palehumults) sites. Forest clearing and continuous cultivation led to significant depletion ($P < 0.05$) of total soil organic C (SOC) (55% and 63%) and N (52% and 60%) in the surface soils, respectively. Compared with the cultivated fields, lower proportions of SOC (51 and 27%) and N (49 and 13%) were lost from the tea and Cupressus plantations, respectively. The largest depletion occurred from the labile SOM associated with the sand separates concurrent with higher oxidation states of lignin. However, substantial amounts of these organic substrates were also lost from the stable SOM fraction. Particularly, SOM, associated with the silt-size separates, decreased suggesting that the SOM in silt was quite susceptible to land use changes and represents a moderately labile SOM pool in the soils under study. Solution 13C NMR spectra revealed larger proportions of protonated and C- and O-substituted aryl-C in the silt than in clay-size separates. In contrast, O-alkyl-C structures were more prominent in the clay than in silt-size separates, coinciding with the lignin distribution obtained by wet-chemical analysis. Deforestation and subsequent agricultural.
management not only resulted in SOM depletion but also markedly altered the chemical composition of SOM in the subhumid highland ecosystems.

Record 77
AU: Kim,-J.I.; Hong,-S.B.; Row,-K.H.
TI: Effect of particle size in preparative reversed-phase high-performance liquid chromatography on the isolation of epigallocatechin gallate from Korean green tea.
SO: J-chromatogr-A. Amsterdam ; New York : Elsevier, 1993-. Mar 8, 2002. v. 949 (1/2) p. 275-280.

Record 78
AU: Goto,-K.; Matsubara,-H.; Mochida,-K.; Matsumura,-T.; Hara,-Y.; Niwa,-M.; Yamasato,-K.
TI: Alicyclobacillus herbarius sp. nov., a novel bacterium containing omega-cycloheptane fatty acids, isolated from herbal tea.
SO: Int-j-syst-evol-microbiol. Reading, UK : Society for General Microbiology, c2000-. Jan 2002. v. 52 (pt.1) p. 109-113.

Record 79
AU: Nie,-G.; Jin,-C.; Cao,-Y.; Shen,-S.; Zhao,-B.
TI: Distinct effects of tea catechins on 6-hydroxydopamine-induced apoptosis in PC12 cells.
SO: Arch-biochem-biophys. Orlando, Fla. : Academic Press. Jan 1, 2002. v. 397 (1) p. 84-90.

Record 80
AU: Song,-D.U.; Jung,-Y.D.; Chay,-K.O.; Chung,-M.A.; Lee,-K.H.; Yang,-S.Y.; Shin,-B.A.; Ahn,-B.W.
TI: Effect of drinking green tea on age-associated accumulation of maillard-type fluorescence and carbonyl groups in rat aortic and skin collagen.
SO: Arch-biochem-biophys. Orlando, Fla. : Academic Press. Jan 15, 2002. v. 397 (2) p. 424-429.

Record 81
AU: Nakagawa,-H.; Wachi,-M.; Woo,-J.T.; Kato,-M.; Kasai,-S.; Takahashi,-F.; Lee,-I.S.; Nagai,-K.
TI: Fenton reaction is primarily involved in a mechanism of (-)-epigallocatechin-3-gallate to induce osteoclastic cell death.
SO: Biochem-biophys-res-commun. Orlando, Fla. : Academic Press. Mar 22, 2002. v. 292 (1) p. 94-101.

Record 82

AU: Ahmad,-N.; Adhami,-V.M.; Gupta,-S.; Cheng,-P.; Mukhtar,-H.
TI: Role of the retinoblastoma (pRb)-E2F/DP pathway in cancer chemopreventive effects of green tea polyphenol epigallocatechin-3-gallate.
SO: Arch-biochem-biophys. Orlando, Fla. : Academic Press. Feb 1, 2002. v. 398 (1) p. 125-131.

Record 83
AU: Yee,-W.L.; Wang,-Q.; Agdinaoay,-T.; Dang,-K.; Chang,-H.; Grandinetti,-A.; Franke,-A.A.; Theriault,-A.
TI: Green tea catechins decrease apolipoprotein B-100 secretion from HepG2 cells.
SO: Mol-cell-biochem. Dordrecht, The Netherlands : Kluwer Academic Publishers. Jan 2002. v. 229 (1/2) p. 85-92.

Record 84
AU: Tomita,-M.; Irwin,-K.I.; Xie,-Z.J.; Santoro,-T.J.
TI: Tea pigments inhibit the production of type 1 (TH1) and type 2 (TH2) helper T cell cytokines in CD4+ T cells.
SO: PTR,-Phytother-res. West Sussex : John Wiley & Sons Ltd. Feb 2002. v. 16 (1) p. 36-42.

Record 85
AU: Hung,-Y.C.; Sava,-V.M.; Juang,-C.L.; Yeh,-T.C.; Shen,-W.C.; Huang,-G.S.
TI: Gastrointestinal enhancement of MRI with melanin derived from tea leaves (Thea sinensis Linn.).
SO: J-ethnopharmacol. Oxford : Elsevier Science Ltd. Jan 2002. v. 79 (1) p. 75-79.

Record 86
AU: Horie,-H.; Nesumi,-A.; Ujihara,-T.; Kohata,-K.
TI: Rapid determination of caffeine in tea leaves.
SO: J-chromatogr-A. Amsterdam ; New York : Elsevier, 1993-. Jan 4, 2002. v. 942 (1/2) p. 271-273.

Record 87
AU: Otieno,-Washington.
TI: Armillaria root rot of tea in Kenya : characterization of the pathogen and approaches to disease management.
SO: [S.l. : s.n.], 2002. 119 p. : ill., maps