## Session I. CULTURE AND HISTORY

The tea-things from the Tang crypt of Famen temple and tea culture of the Tang dynasty.
Jinke Han (Famensi Museum, P.R.China)
Tea culture in Britain, 1660-1800
Hilary Young (Victoria and Albert Museum, Great Britain)
Research on the origin and evolution of the tea eating culture of ethnic minorities in the thre
gorges area of China.
Jiashun Gong ( Southwest Agricultural Univ., P.R.China ), Rongbo Xu ( Wha Sha Te
Trading,
Sigapore ), Dongmei Qi, Qinjin Liu (Southwest Agricultural Univ., P.R.China)
On the origin of tea industry in China.
Sheng Han (Famen Museum, P.R.China)
Origin and development of Chinese tea culture.
<u>Dexian Dong</u> ( Huazhong Agricultural Univ., P.R.China ), Yongming Zhou ( Jiayu Agricultural Bureau,
P.R.China )
The development of the tea industry in the period of Wudaishiguo.
Masaaki Mizuno (Homeikai, Japan)
Tea in British culture, Circa 1660 to 1914 - When did tea become the national drink in Britain? -
Tamao Ohira Kuwahara (Independent Researcher, Czech Repulic)
History of Turkish tea drinking habits.
Yoshibumi Honda (Turkish Embassy, Japan)
Cherish the memory of old tea roads.
Jyh Hisen Tseng (China Times, Taiwan)
Tea culture in eastern Asia.
Yoichiro Nakamura (Folklore Society of Shizuoka Pref., Japan)
The origin of black tea.
Tadakazu Takeo (ITO-EN Co., Japan)
The manufacturing and drinking arts in the Song dynasty.
Shen Dongmei (Chinese Academy of Social Sciences, P.R.China)
The relation between archtecture and modernization of the tea industry in Shizuoka Prefecture.
Satoru Nimura (Kougakuin Univ., Japan)
Karamono for Sencha: Appropriating elite culture for the masses.
Patricia J. Graham (Univ. of Kansas, USA)
Some usages of "TA" or "DA" word meaning tea or some bitter vegetables in Tenpyo period
(the middle 8 <sup>th</sup> century).
Takashige Terada (The Nara Pref. Agri. Exp. Station, Japan)
O-CHA songs.
Shigehiro Kodomari (Kanaya Tea Museum, Japan ), Itiji Morizono (Independent Researcher
Japan ), Malcolm W. Adams (American Journalist, USA)

Origin and present status of the tea-eating customs of the ethnic groups in the mountain
regions in southwestern China.
Qinjin Liu ( Southwest Agricultural Univ., P.R.China ), Rongbo Xu ( Wha Sha Teas Tradin
Singapore ), Jiashun Gong ( Southwest Agricultural Univ., P.R.China )
The spilit of tea – in Japanese tea ceremony –
Hakuun Yoshino, Ako Yoshino (Nihon Sado Juku, Japan)
Historical remains of China tea culture.
Guokun Yao, Shengtian Wu, Maorong Li (China International Tea Cultural Inst
P.R.China )
The woman merchant, Oura Kei ( 1884 ), who built the wealth of one generation by
exportation of green tea in Japan, and the green tea in that time.
Ayumi Eguchi (Konomeen, Japan)
Rapid development of Chinese tea culture.
Feng Liu, Oikun Cheng (China International Tea Culture Institute, P.R.China)
Study on tea culture of snowy Murakami in Japan.
Chigusa Tateyama (Niigata Women's College, Japan)
The art of Yunnan pure tea.
Di Liu (Jin Yu Xuan Tea House, P.R.China)
Introducing three-course tea culture, promoting Dali tourism.
Xiaodong Ji (Dali Changshan Gantong Tourist Cable Car Inc., P.R.China)
China tea cafes facing for new century.
Haogeng Ruan, Zuwen Wang, Liying Zhang (China International Tea Culture Insti
The way of serving "Gong-fu Cha" and its cultural background.
Meimao Lin (Aich Univ., Japan)
The home of tea and the rise of tea culture.
Satoru Matsushita (Homeikai, Japan )
Cultural history of tea drinking in the West.
Akiko Takiguchi (Tokyo Univ. of Foreign Studies, Japan)
A study of the tea used 170 years ago collected by Philipp Franz Siebold.
Isao Kumakura (National Museum of Ethnology, Japan)
[ Joint Symposium "Origin of Tea Plant" ]
Indigenous wild tea Camellias in China.
Fulian Yu. Liang Chen (Tea Research Institute, CAAS, PR China)

The origin of the tea plant.	
Minoru Hashimoto (Meijo Univ., Japan)	J5
Analysis of differentiation of teas uses DNA markers in evergreen forest.	
Miyuki Kato (Kagawa Univ., Japan)	J8
Analysis of the differentiation of Japanese green tea cultivars using DNA markers.	
Satoru Matsumoto (National Institute of Vegetable and Tea Science, Japan)	J13
Summarized remarks on the origin of Japanese tea by the genetic resources study in Eastern Asia	
and Japan.	
Satoshi Yamaguchi (Ehime Univ., Japan)	J17

## Session II. PRODUCTION

Recent advances in tea biotechnology and future prospects.	
Lok Man S. Palni (G.B.Pant Institute of Himalayan Environment & Development	ment, India )
Development of catechin production process by means of tea cell culture.	
Naomi Shibasaki-Kitakawa, Junna Takeishi, Toshikuni Yonemoto (Toho	oku Univ., Japan )
Molecular markers - New tools for an old science - The case of tea.	
Francis N. Wachira (Tea Research Foundation of Kenya, Kenya)	
Relationship between tea breeding and genetic analysis by DNA markers.	
Junichi Tanaka (National Institute of Vegetable and Tea Science, Japan)	••••••••••••••••••••••••••••••••••••••
$\beta$ -Primeverosidase : A unique digly cosidase concerned with the floral aroma	formation during
tea manufacturing.	
Masaharu Mizutani, Hidemitsu Nakanishi, Jun-ichi Ema, Etsuko Nogu	chi, Seung-Jin Ma,
Kanzo Sakata (Kyoto Univ., Japan)	
Biochemistry and molecular biology in caffeine biosynthesis Molecular	cloning and gene
expression of caffeine synthase.	
Misako Kato (Ochanomizu Univ., Japan)	
Photosynthesis and partitioning of assimilates in relation to productivity in tea.	
Raj Kumar, R. (UPASI Tea Research Foundation, India)	
Morphological classification and phylogenetic evolution of section $\it Thea$ in the $\it gallow$	enus <i>Camellia</i> .
Liang Chen (Chinese Academy of Agricultural Science, Zhejiang Univ., P.R.	China), Fulian Yu
(Chinese Academy of Agricultural Science, P.R.China), Luhuan Lou (	Zhejiang Forestry
College, P.R.China), Qiqing Tong (Zhejiang Univ., P.R.China)	
Study on the comparative morphology of pollens between Chinese Mt.Tiantai a	nd Korean Mt.Jiri
tea plants.	
Eunkyung Lee ( Tea Experiment Station, Korea ), Yaoping Luo, Qiqing	g Tong (Zhejiang
Univ., P.R.China)	
Application of plant canopy analyzer for mature tea (Camellia sinensis (L.) O. K	Kuntze) bush.
Takayuki Nakano (Shizuoka Chuen Agriculture & Forestry Office, Japan ) -	
Screening for qualitative and quantitative status of green tea in ten clonal agro	-types cultured at
BTRISS, ODAHLEA, Bangladesh.	
Muhammad A. M. Chowdhury, Kazi M. M. Alam (Univ. of Chittagong, Bang	gladesh)
Modeling development of leaf initial numbers in tea plants after skiffing.	
Hide Omae, Yoshiyuki Takeda (National Institute of Vegetable and Tea Sc	ience, Japan)
Efficient application of tissue culture technique to high expression of us	<del>-</del>
functions of tea.	
Youichi Aoshima (Shizuoka Agricultural Experiment Station, Japan),	Masumi Takemoto
(Univ. of Shizuoka, Japan )	
The construction of BT gene expression vector and its transformation in tea	ı plant ( <i>Camellia</i>
sinensis L.)	
Shan Wu, Yurong Liang, Yingying Luo, Jianliang Lu (Zhejiang Univ.	P.R.China )

thetase.
Yuerong Liang (Zhejiang Univ., P.R.China), Junichi Tanaka, Yoshiyuki Takeda (Nationa
Institute of Vegetable and Tea Science, Japan )
lation of wound/pathogen-inducible cDNAs from tea by mRNA differential display.
<u>Katsuyuki Yoshida</u> ( National Institute of Vegetable and Tea Science, Japan ), Tomoo Homma ( Tokyo Medical and Dental Univ., Japan )
nome analysis and isozyme studies for developing molecular markers associated with drough
erance in tea plant.
Rajan K Mishra, Swati Sen-Mandi (Bose Institute, India)
velopment and use of cleaved amplified polymorphic sequence ( CAPS ) markers in tea.
Shiv Shankhar Kaundun, Satoru Matsumoto (National Institute of Vegetable and Teascience, Japan)
imation of genetic relatedness of tea ( Camellia sinensis L.) clones in Sri Lanka using isozyme
ymorphisms and RAPD markers.
Mewan Kooragodage, Anudini Liyanage, Kumudini Gunasekera (Tea Research Institute of
Sri Lanka, Sri Lanka), Everard Jayamanne, Ursla Fernando (Coconut Research Institute of
Sri Lanka, Sri Lanka), Eric Karunanayake (Univ. of Colombo, Sri Lanka)
versus foliar application in the correction of magnesium deficiency in tea plants.
Charles R. Obatolu (Cocoa Research Institute of Nigeria, Nigeria)
luation of three entomopathogenic fungi for the control of red spider mites.
Muraleedharan, N. (UPASI Tea Research Foundation, India)
ect of the green lacewing, Mallada basalis (Walker) on the spider mites, Oligonychus coffeae
tner and Tetranychus kanzawai Kishida in tea plantation.
Suh-Neu Hsiao (Taiwan Tea Experiment Station, Taiwan)
indance and population of Acaphylla theavagrans Kadono (Acari: Eriophyidae) in some
ieties of tea plants and a report on its new predator (Amblyseius Womersleyi Schicha).
Mohd. Mainul Haque ( Rajshahi Univ., Bangladesh ), Mitsuyoshi Takeda, Yasushi Sato,
Yukio Ando (National Institute of Vegetable and Tea Science, Japan)
emical and biochemical basis of the resistance and susceptibility of Sri Lankan tea cultivars to
ter blight leaf disease (Exobasidium vexans)
Nimal Punyasiri, Sarath Abeysinghe (The Tea Research Institute of Sri Lanka, Sri Lanka),
Vijay Kumar (Univ. of Peradeniya, Sri Lanka)
ects of agitation on tea flush during withering process of Paochong tea.
Jyh-Shyan Tsay (Wen-Shan Substation Taiwan Tea Experiment Station, Taiwan), Wei-Chin
Chang (Academia Sinica, Taiwan)
elopment and improvement of refining machine for stripe-shaped Paochung tea.
Teng-Feng Huang, Chin-Liou Lee (Taiwan Tea Experiment Station, Taiwan)
imum fermenting factors in the formation of theaflavins from crude catechin in vitro model em and their significance in storing.
Muhammad Alamgir Choudhury (Bangladesh Tea Research Institute, Bangladesh)

	iological activities. <u>Katsunori Kohata</u> ( National Institute of Vegetable and Tea Science, Japan ), Yuji Yamauchi
	(Osaka Univ., Japan), Tomomi Ujihara, Hideki Horie (National Institute of Vegetable and
	Tea Science, Japan )
Histo	schemical localisation and a new and rapid spectrocolorimetric method for quantitative
	nation of caffeine in teas of Darjeeling district, India.
	Prabhat Kumar Basu (North Bengal Univ., India)
Eval	uating (+)- and (-)- dihydrobovolide in tea flavor.
	Michiko Kawakami (Ibaraki Christian Univ., Japan ), Tadashi Ii, Nobuhiko Ito (Soda
	Aromatic Company, Ltd., Japan ), Yuko Tadokoro, Akio Kobayashi (Ibaraki Christian
	Univ., Japan )
Subs	trate specificity of $eta$ -primeverosidase, a key enzyme in aroma formation during oolong tea
and l	olack tea manufacturing.
	Seung-Jin Ma, Masaharu Mizutani, Jun Hiratake ( Kyoto Univ., Japan ), Kentaro
	Hayashi, Kensuke Yagi, Naoharu Watanabe ( Shizuoka Univ., Japan ), <u>Kanzo Sakata</u>
	( Kyoto Univ., Japan )
Agro	bacterium tumefaciens-mediated transformation tea embryogenic callus.
	Michiyo Kato ( Numazu College of Technology, Japan ), Misako Kato ( Ochanomizu Univ.,
	Japan ), Masao Watanabe, Akio Kato ( Yamaguchi Univ., Japan )
Diver	sity of catechin synthesis genes in green tea cultivars.
	Jong-In, Park, Bong Soo Kim, <u>Ill-Sup, Nou</u> (Sunchon National Univ., Korea)
	ent rooting and biological hardening of tissue culture raised tea ( Camellia sinensis (L.) O.
	ze ) plants.
	Niladri Bag, Anil Kumar, Shyamal K. Nandi, Anita Pandey, Lok Man S. Palni
	(G.B.Pant Institute of Himalayan Environment and Development, India)
	o assessment of tea (Camellia sinensis) explant types to vegetative propagation potentials in
Niger	
	Edward B. Esan, C. J. Bright-Agindotan, S. S. Omolaja (Cocoa Research Institute of
	Nigeria, Nigeria)
	ation and genetic analysis of the resistance to tea gray blight in tea genetic resources in
apar	
	Yoshiyuki Takeda (National Institute of Vegetable and Tea Science, Japan)
	v cultivar "Tsuyuhikari" for green tea.
	Hiroshi Nishikawa, Yukikazu Kuranuki (Shizuoka Tea Experiment Station, Japan), Yoriyuki
	Nakamura (Shizuoka Pref. Government, Japan)
	th promotion of tea trees by putting bamboo charcoal in soil.
	Takehiko Hoshi (Tokai Univ., Japan)
	ation of the first tea crop bud growth based on the temperature response function.
•	Naomi Mizuno (National Institute of Vegetable and Tea Science, Japan)of subsoil improvement at opening of new tea field by mixing tillage using a rotor-bucket.

Development of transplanter for tea young plants in paperpots.	
Tsutomu Oyaizu, Atsushi Yamamoto, Tetsuya Oishi( Shizuoka Tea Experiment Station, Japan ),	
Takashi Fukutaka ( Kubota Co., Ltd., Japan ), Hirakazu Nakafuji ( Kubota Agri Tokyo Co.,	
Ltd., Japan )	159
Varietal differences of chemical components and hardening speed of new shoots in tea season of	
first crop.	
Atsushi Nesumi (National Institute of Vegetable and Tea Science, Japan)	162
Growth and yield sensing system for precision agriculture in tea cultivation.	
Daisuke Miyama, Masahiro Miyazaki, Takuya Araki (National Institute of Vegetable and	
Tea Science, Japan )	166
Morphological and physiological characteristics of Korean wild tea populations.	
Namiko Ikeda (National Institute of Vegetable and Tea Science, Japan), Young-Goo Park	
(Kyungpook National Univ., Korea)	170
Morphological difference of woody root in Japanese tea varieties.	
Kiyoshi Matsuo (National Institute of Vegetable and Tea Science, Japan )	174
The development of tea industry calls for ecological tea gardens.	
Shao-Jun Luo (Hangzhou Tea Research Institute, P.R.China), Yi Lu (Zhejiang Univ.,	
P.R.China)	178
Improvement of soil physical properties in the large mechanization tea field.	
Noritomo Nakamura, Kouta Osako, Mituaki Karasuyama (Kagoshima Tea Experiment	
Station, Japan )	181
Survey method for nitrous oxide emission from tea fields.	
Noriko Kobayashi (Univ. of Shizuoka, Japan)	185
Nitrogen leaching volume based on soil property and fertilization method in Jeju Island's tea	
gardens.	
Young-gul Kim, Hong-seok Ryu, Jin-ho Lee (Jang Won Ind., Korea)	187
Effects of nitrogenous fertilizers on the chemical constituents of fresh shoots of tea plants	
( Camellia sinensis L. )	
Toyomasa Anan (National Institute of Vegetable and Tea Science, Japan)	191
Effect of the time of nitrogen fertilizer application on the utilization of amino acids and amides in	
tea new shoots.	
Ikuo Watanabe (National Institute of Vegetable and Tea Science, Japan)	195
Effect of liquid fertilizer application under the canopy of Tencha tea garden.	
Masaki Tsuji, Tadataka Kinoshita (Aichi-ken Agricultural Research Center, Japan)	198
Influences of different nitrogen levels on the yield and nitrogen content of new shoots in the	
fertigation method under the canopy.	
Shigekazu Nakamura ( Shizuoka Tea Experiment Station, Japan ), Mitsuru Ota ( Shizuoka Pref.	
Government, Japan ), Hiroshi Takano (Shizuoka Tea Experiment Station, Japan )	202
Biological nitrate removal by sulphur and limestone denitrification.	
Toshiaki Miyanaga, Yasuhiro Hirato (Nippon Steel Chemical Co., Ltd., Japan ), Yasuhide	
Mochizuki (Shizuoka Tea Experiment Station, Japan ), Kiyoshi Matsuo (National Institute of	
Vegetable and Tea Science, Japan )	206

Transition leaching rate of nitrogen for decreased fertilizer in tea field.
Toshiyuki Kaji (Kagoshima Tea Experiment Station, Japan)
Studies on Beauveria bassiana strain 871 and its use against Myllocrinus aurolineatus.
Guangyuan Wu, Mingsen Zeng, Qingsen Wang (Fujian Academy of Agricultural Science
P.R.China )
Tolerable injury level and control threshold of the anthracnose, Colletotrichum theae-sinensis
Miyake et al., on tea crop.
Akihito Ozawa, Takuya Nishijima (Shizuoka Tea Experiment Station, Japan)
Predicting the optimum timing of insecticide application to control the first generation larvae of
Pseudaulacaspis pentagona using the day-degree accumulation.
Mitsuyoshi Takeda (National Institute of Vegetable and Tea Science, Japan)
Integrated management of tea tortricids in Japan.
Yasushi Sato (National Institute of Vegetable and Tea Science, Japan)
Predation of two species of spiders, Trachelas japonica Bos. et Str and Philodromus subaureolus
Bos. et Str on tea green leafhopper, <i>Empoasca onukii</i> Matsuda in tea fields.
Yukio Kosugi (Shizuoka Tea Experiment Station, Japan)
The fertility difference of the tea rust mite, Acaphylla theavagrans on tea cultivars.
Takashi Mizuta (Miyazaki Pref. Agricultural Experiment Station, Japan)
The curative effect of DMI fungicides against tea anthracnose.
Takuya Nishijima (Shizuoka Pref. Agriculture and Forestry College, Japan)
Influence to the tasty compounds of the tea by the difference with nitrogen fertilizer application
quantity and over the fresh leaf characteristic of it.
Takaya Watase ( Shizuoka Tea Experiment Station, Japan ), Yasutoshi Sada ( Shizuoka
Industrial Research Institute, Japan )
Factors affecting the abundance of white peach scale ( Pseudaulacaspis pentagona ) in tea fields of
apan.
Sakae Kubota (Shizuoka Tea Experiment Station, Japan)
Development of an insect granulosis virus formation BCGV-01 for controlling both the oriental
ea tortorix, Homona magnanima, and the smaller tea tortrix, Adoxophyes honmai, in Japan.
Shoji Asano, Katsuhisa Fukunaga, Akira Takai (BC Lab., Japan)
Development of automatic control system for tea processing.
Hitoshi Yoshitomi, Yuichi Yamaguchi, Yusuke Sawai (National Institute of Vegetable and
Tea Science, Japan )
Effect of different humid conditions of making green on aromatic constituents of oolong tea.
Fangzhou Zhang, Rongbing Chen, Yuanqin Li, Fuying Jiang (Fujian Academy of
Agricultural Sciences, P.R.China)
Methods of manufacture of Japanese tea and the newly developed automatic leaf-roasting device.
Shouhei Eguchi, Ayumi Eguchi (Japan)
Optimization of parameters of rolling process for fired green tea.
Huarong Tong, Yao Liu (Southwest Agricultural Univ., P.R.China), Wei Miao (Hualin

	is of catechins and theaflavins in green, paochong, oolong and black teas by HPLC.
]	Ryoyasu Saijo, Miyuki Kato (Kagawa Univ., Japan) Yoshiyuki Takeda (National
I	nstitute of Vegetable and Tea Science, Japan)
An eva	luation method of color of crude tea.
1	Masaki Hamasaki (Kagoshima Tea Experiment Station, Japan)
Produc	ction of black tea pigments, theaflavins, from green tea by treatment with various fruits.
_	Takashi Tanaka, Kyoko Inoue, Chie Mine, Yayoi Betsumiya, Isao Kouno (Nagasaki Jniv., Japan)
urific	ation of catechins using isolated soybean protein or tempe protein.
Ţ	Kanji Ishimaru, Kazuyuki Ushijima, Takahi Nozawa, Norie Tanaka (Saga Univ., Japan),
(	Gen-ichiro Nonaka ( Usaien Pharmaceutical Company, Japan )
Chloro	phyll and carotenoid analysis of tea by high-performance liquid chromatography and its
pplica	tion for quality control.
<u>}</u>	Yasuyo Suzuki, Yuzo Shioi (Shizuoka Univ., Japan)
Chemi	cal analyses of dark tea: C-13 NMR and HPLC analyses and isolation of a new constituent.
Ţ	Wenfei Guo, Di Wu (Zhejiang Univ., P.R.China), Kanzo Sakata (Kyoto Univ., Japan),
5	Shajun Luo, Xiufang Yang (Hangzhou Tea Research Institute, P.R.China)
Kamai	ri-cha, traditional Japanese green tea.
Ţ	Kazuhiko Takashima, Susumu Fujita (Miyazaki Pref. Agricultural Experiment Station, Japan),
F	Hideki Horie, Katsunori Kohata (National Institute of Vegetable and Tea Science, Japan)
MR a	analytical approach to clarify the molecular mechanisms of the antioxidative and radical-
caven	ging activities of tea catechins using 1,1-diphenyl-2-picrylhydrazyl.
3	Yusuke Sawai, Yuichi Yamaguchi, Hitoshi Yoshitomi (National Institute of Vegetable and
7	Tea Science, Japan ), Jae-Hak Moon, Junji Terao (The Univ. of Tokushima, Japan ), Kanzo
5	Sakata (Kyoto Univ., Japan)
Mumir	num accumulation in the plants of genus Camellia.
Ī	Hiromi Yokota, Yosuke Yamagishi, Shinpei Hanada, Akio Morita (Shizuoka Univ.,
J	apan ), Yoriyuki Nakamura ( Shizuoka Tea Experiment Station, Japan ), Shigeki Konishi
(	Fukujuen CHA Research Center, Japan )
re ca	techins localized in vacuoles in tea leaves?
3	Yuji Moriyasu, Takao Suzuki, Yasuhiro Miyoshi (Univ. of Shizuoka, Japan)
Studies	on the relationship between six metal elements and green tea color.
2	Zhengli Gong ( Southwest Agricultural Univ., P.R.China ), Jingqiang Zhang ( Hefei Industry
Ţ	Jniv., P.R.China), Heling Wu (Southwest Agricultural Univ., P.R.China)
Exuda	tion of aluminium-chelating substances from tea ( Camellia sinensis L. ) roots.
3	Yohsuke Fujii, Akio Morita, Hiromi Yokota (Shizuoka Univ., Japan)
/ariati	ons in biochemical constituents of south Indian clonal teas.
1	Marimuthu, S. (R & D Centre, Parry Agro Industries Ltd., India), Raj Kumar, R. (UPASI
7	Tea Research Foundation, India )
n vivo	and in vitro activities of nitrate reductase of tea plant ( Camellia sinensis L. ).
A	Akio Morita, Shinji Hirukawa (Shizuoka Univ., Japan), Junichi Tanaka (National Institute
	of Vegetables and Tea Science, Japan )

Flavonoid compounds in Laoying tea (Litsea coreana Levl. var. Lanuginosa < Migo > Yang et. P.H.	
Huang)	
Jian Yang (Southwest Agricultural Univ., P.R.China ), Jinping Xie ( "LONGDU	
XIANGMING" Co-op LTD., P.R.China ), Huang Youyi (Central China Agricultural Univ.,	
P.R.China)	319
Tea leaf nutrient contents as a criterion for commercial tea clone selection.	
Rotimi Charles Obatolu, Rotimi Rufus Ipinmoroti (Cocoa Research Institute of Nigeria, Nigeria)	323
Variations of glycosidic tea aroma precursors, volatile, $\beta$ -D-glucosidase activity and respiration	
intensity during green tea withering.	
Xiaochun Wan, Zhengzhu Zhang, <u>Tao Xia</u> (Anhui Agricultural Univ., P.R.China)	327
Effect of aluminum stress on supperoxide dismutase in tea, wheat and barley.	
Jianliang Lu, Yuerong Liang, Ying Wu, Shan Wu, Lingyun Zhang (Zhejiang Univ.,	
P.R.China )	331
Research on tea growing in Hawaii	
Dwight Sato, (College of trop., Agriculture & Human Res., USA), Francis Zee (USDA	
Agriculture Research Service, USA), Wen Hisung Ko (College of trop, USA), Lyle Wong	
(Itawaii Department of Agriculture, USA)	335
Control of tea insect pests by pheromones and possible resistance.	
Kinya Ogawa, Fumiaki Mochizuki, Takehiko Fukumoto (Shin-Etsu Chem. Co. Ltd., Japan)	338
Sustainable agriculture of green tea in Korea.	
B.G. Park, H.J. Lee (Seoul Nat'l Univ., Korea)	341
A new technique to analyze free and glycosidically bound aroma compounds in green teas using	
an enzyme and solid phase microextraction method.	
Sung-Kwon Ryu, Jin-Chul Roh ( Kyung Hee Univ., Korea), Hyun-Jeong Kim, Sung So	
(Pacific R & D Center, Korea), Seung Kook Park (Kyung Hee Univ., Korea)	345
Changes in lipoxygenase activity and volatile compounds during early growing season.	
Hyun-Jeong Kim, Sung So (Pacific R & D Center, Korea), Sung-Kwon Ryu, Jin-Cheol	
Roh, Seung Kook Park (Kyung Hee Univ., Korea)	345
Ton, boung rook I and (12) and 1100 on the 12010ay	
[ Joint Symposium "Origin of Tea Plant" ]	
Indigenous wild tea Camellias in China.	
Fulian Yu, Liang Chen (Tea Research Institute, Chinese Academy of Agricultural Science,	
P.R.China )	J1
The origin of the tea plant.	
Minoru Hashimoto (Meijo Univ., Japan)	J5
· · · · · · · · · · · · · · · · · · ·	

Analysis of differentiation of teas uses DNA markers in evergreen forest.	
Miyuki Kato (Kagawa Univ., Japan)	J8
Analysis of the differentiation of Japanese green tea cultivars using DNA markers.	
Satoru Matsumoto (National Institute of Vegetable and Tea Science, Japan)	J13
Summarized remarks on the origin of Japanese tea by the genetic resources study in Eastern Asia	
and Japan.	
Satoshi Yamaguchi (Ehime Univ., Japan)	J17

## Session III. HEALTH BENEFITS

Antibiotic resistance preventive properties of green tea catechins.
Lester Mitscher, Segaran Pillai, Christine Pillai, Delbert Shankel (Kansas Univ., USA) 1
Induction of UDP-Glucuronosyltransferase (UGT1A1) by tea polyphenols and flavonoids in
HEPG2 and LLC-PK1 cells.
Junko Sugatani, Kasumi Yamakawa, Eri Tonda, Shinichi Nishitani, Ikuo Abe, Hiroshi
Noguchi, Masao Miwa (Univ. of Shizuoka, Japan) 5
Effect of theanine on neurotransmitters and brain functions in rats.
Hidehiko Yokogoshi (Univ. of Shizuoka, Japan)9
Inhibitory effect of green tea on the autoimmune disease.
Kazutoshi Sayama (Shizuoka Univ., Japan), Itaro Oguni (Univ. of Shizuoka, Japan) 13
A mouse model of AIDS(MAIDS) for testing AZT in a combination therapy with tea polyphenols.
Modiegip Selematsela, Rolf Becker (Univ. of the North, South Africa), Anabella Gaspar,
Zeno Apostolides (Univ. of Pretoria, South Africa)
Protective effects of green tea polyphenols against renal disease.
Takako Yokozawa, Takako Nakagawa (Toyama Medical and Pharmaceutical Univ., Japan ),
Seiji Shu, Lekh Raj Juneja (Taiyo Kagaku Co., Ltd., Japan)22
Ameliorative effects of tea catechins on stroke in transient mid cerebral artery occuluded rats
(MCAo-Rats).
Motohisa Suzuki, Masaki Tabuchi (Univ. of Shizuoka, Japan ), Keizo Umegaki (National
Institute of Nutrition and Health, Japan ), Yukihiko Hara ( Tokyo Food Techno Co., Ltd.,
Japan ), Isao Tomita ( Shizuoka Sangyo Univ., Japan ), Masahiko Ikeda, Takako Tomita
(Univ. of Shizuoka, Japan )26
Bioavailability and biological activity of tea polyphenols.
Chung S. Yang, Hong Lu, Xiaofeng Meng, Jie Liao, Guang-yu yang, Mao-Jung Lee,
Pius Maliakal, Chuan Li, (The State Univ. of New Jersey, USA) 30
Absorption and metabolism of tea catechin in humans.
Teruo Miyazawa (Tohoku Univ., Japan) 34
Metabolism of epicatechin 3-0-gallate and epigallocatechin 3-0-gallate by human intestinal flora.
Masao Hattori (Toyama Medical and Pharmaceutical Univ., Japan) 38
Metabolic fate of [4-3 H] epigallocatechin gallate in rats.
Toshiyuki Kohri ( Mitsui Norin Co., Ltd., Japan ), Masayuki Suzuki, Fumio Nanjo,
Yukihiko Hara ( Tokyo Food Techno Co., Ltd., Japan ) 42
Metabolic fate of theanine after its oral administration to rats.
Tomonori Unno, Takami Kakuda ( Ito en Ltd., Japan ), Takashi Hayakawa, Haruhito Tsuge
(Gifu Univ., Japan) 46
(-)-Epicatechin inhibits intestinal drug metabolism to increase drug absorption: Knowledge-based
prediction of (-)-epicatechin effect on drug absorption.
Takashi Mizuma, Noriko Ichikawa, Noriko Kojima, Shoji Awazu ( Tokyo Univ. of
Pharmacy and Life Science, Japan ) 49

Shin-Kyo Chung, Young-Chan Kim ( Kyungpook National Univ., Korea ), Sang-Lyong Oh	ļ
( Sangju National Univ., Korea ), Kunihisa Iwai, Hajime Matsue ( Aomori Advanced	
Industrial Technology Center, Japan )	53
Protective effect of tea catechins on lipid peroxidation in intestinal mucosa.	
Junji Terao, Sayuri Miyamoto, Kaeko Murota, Jae-Hak Moon (The Univ. of Tokushima,	
Japan ), Masako Yamamoto (Tokushima Bunri Univ., Japan )	56
Green tea extracts suppress oxidative stress induced by dietary lipid peroxidation products.	
Hitoshi Ashida, Aki Kitagawa, Itsuko Fukuda, Kazuki Kanazawa, Gen-ichi Danno	,
(Kobe Univ., Japan)	60
inhibitory effect of tea and flavonoids on the formation of advanced glycation end products.	
Naohide Kinae, Yuka Unno, Junko Kawasaki, Shoji Masumori, Shunichi Masuda	ı
(Univ. of Shizuoka, Japan)	64
Assessment of functional tea in human using oxidative stress profile technique.	
Hirotomo Ochi, Miku Hashimoto, <u>Jun Kurashige</u> (Japan Institute for the Control of Aging,	
Japan )	68
Application of green tea catechins as formaldehyde scavengers.	
Hiroshi Hojo, Katsuhiko Fukai, Fumio Nanjo (Tokyo Food Techno Co., Ltd., Japan)	72
Green tea: A storehouse of exciting nutraceuticals.	
Lekh R. Juneja (Taiyo Kagaku Co., Ltd., Japan)	76
industrial application of tea extracts.	
Fumihisa Yayabe (ITO EN Ltd., Japan)	80
The role of tea flavonoids in cardiovascular health.	
Douglas A. Balentine (Unilever Health Institute, The Netherlands)	84
Tea and prevention of heart disease and cancer.	
John H. Weisburger (American Health Foundation, USA)	90
Potential compounds in tea for the prevention of lung cancer.	,,
Fung-Lung Chung (American Health Foundation, USA)	95
Chemoprevention for FAP with green tea polyphenols.	
Tetsuro Yamane (Matsushita Memorial Hospital, Japan)	99
The pharmacokinetics of EGCG: Preclinical and clinical studies.	
James A. Crowell (National Cancer Institute, USA), Robert R. Swezey (SRI Int., USA),	
Sherry Chow (Univ. of Arizona, USA), Yukihiko Hara (Tokyo Food Techno Co., Ltd., Japan)	
Signal transduction in anticancer activity of green tea components.	105
Koichi Saeki, Norihiko Kobayashi, Kumiko Saeki (International Medical Center of Japan,	
Japan ), Mamoru Isemura (Univ. of Shizuoka, Japan ), Akira Yuo (International Medical	
Center of Japan, Japan)	106
Prostate cancer chemoprevention by green tea.	100
Sanjay Gupta, Kedar Hastak, Nihal Ahmad (Case Western Reserve Univ., USA), Jonathan	
•	
S. Lewin (Univ. Hospitals of Cleveland, USA), Hasan Mukhtar (Case Western Reserve Univ.,	

Inhibition of photocarcinogenesis biomarkers by green tea polyphenol, (-)- epigallocatechin-3-	
gallate in human skin.	
Santosh K. Katiyar (Univ. of Alabama at Birmingham, USA)	11
Synergistic effects of (-)-epigallocatechin gallate with sulindac against colon carcinogenesis of rats	
treated with azoxymethane.	
Tomokazu Ohishi ( Univ. of Shizuoka, Japan ), Yosuke Kishimoto ( Tottori Univ., Japan ),	
Yukihiko Hara, Junichi Hasegawa (Tokyo Food Techno Co., Ltd., Japan ), Mamoru Isemura	
(Univ. of Shizuoka, Japan )	11
Theanine induced inhibition of glutamate transporter enhances the activity of an antitumor	
agent.	
Yasuyuki Sadzuka, Tomomi Sugiyama, Takashi Sonobe (Univ. of Shizuoka, Japan)	12
Synergy of epigallocatechin-3-gallate and isoflavone genistein in inhibition of human prostate	
cancer cells	
Kazuko Sakamoto, Sanjay Gupta (Case Western Reserve Univ., USA), Yukihiko Hara	
(Tokyo Food Techno Co., Ltd., Japan), Hasan Mukhtar (Case Western Reserve Univ., USA) -	12
Anti-angiogenic effect of EGCG through inhibition of matrix metalloproteinases.	
Naoto Oku, Satoru Yamakawa (Univ. of Shizuoka, Japan), Motomi Matsukawa,	
Toshifumi Akizawa (Setsunan Univ., Japan )	130
EGCG derivatives of tea inhibit protein kinases activities in mast cells and matrix	
metalloproteinases activities in highly metastatic cells.	
Mari Maeda-Yamamoto (National Institute of Vegetable and Tea Science, Japan), Mitsuaki	
Sano, Toshio Miyase (Univ. of Shizuoka, Japan), Hirofumi Tachibana (Kyushu Univ.,	
Japan ), Mamoru Isemura (Univ. of Shizuoka, Japan ), Katsuhiro Hakamata (National	
Institute of Vegetable and Tea Science, Japan ), Yuko Kawakami, Toshiaki Kawakami (La	
Jolla Institute for Allergy and Immunology, USA)	134
Tea catechins as potent and selective inhibitors of cholesterol biosynthesis.	
Ikuro Abe, Takahiro Seki, Yasuhiko Kashiwagi, Hiroshi Noguchi (Univ. of Shizuoka, Japan)	10
• /	130
Preventive effects of tea catechins and the derivatives on mouse type-IV allergy.	
Kyoji Yoshino, Tomoaki Yoneyama ( Numazu College of Technology, Japan ), Mitsuaki	
Sano, Toshio Miyase, Yoshiyuki Nakamura (Univ. of Shizuoka, Japan), Mari Maeda-	1 41
Yamamoto (National Institute of Vegetable and Tea Science, Japan)	140
Keiko Saito, Guangzhi Jin, Hisashi Yoshioka (Univ. of Shizuoka, Japan)	144
Mechanism of the potent synergy between tea catechin and $\beta$ -lactams against methicillin-	14
resistant Staphylococcus Aureus.	
Wei-Hua Zhao, Zhi-Qing Hu ( Showa Univ. School of Medicine, Japan ), Yukihiko Hara	
( Tokyo Food Techno Co., Ltd., Japan ), Tadakatsu Shimamura (Showa Univ. School of	
Medicine, Japan )	148
Beneficial effects of green tea catechins on alveolar macrophages infected with pneumonia	1-40
ausing bacteria.	
<u>Kazuto Matsunaga</u> , Thomas W. Klein, Herman Friedman, Yoshimasa Yamamoto (Univ.	
of South Florida college of Medicine, USA)	151

Hiromi Kittaka-Katsura (Hiroshima Pref. Women's Univ., Japan), Shuhei Ebara (Osaka Pref.	
Univ., Japan ), Fumio Watanabe ( Kochi Women's Univ., Japan ), Yoshihisa Nakano (Osaka Pref. Univ., Japan )	155
Inhibitory effects of 0-methylated catechin derivatives on mouse type-I allergy.	
Mitsuaki Sano, Masazumi Suzuki, Toshio Miyase, Yoshiyuki Nakamura, (Univ. of Shizuoka, Japan) Kyoji Yoshino (Numazu College of Technology, Japan) Hirofumi Tachibana (Kyushu Univ., Japan), Mari Maeda-Yamamoto (National Institute of Vegetable and Tea Science, Japan)	159
Actions of green tea components on intestinal functions.	137
Tomoo Homma, Keiji Hirai ( Tokyo Medical and Dental Univ., Japan ), Yukihiko Hara	
( Tokyo Food Techno Co., Ltd., Japan ), Yoshifumi Katayama (Tokyo Medical and Dental	
Univ., Japan )	163
Anti-lipogenic and lipolytic effect of powdered green tea.	
Noboru Hasegawa, Norihiro Yamada, Midori Mori, Yoshikuni Takagi, Noriko	
Sakakibara, Yukiko Toyama, Miyako Mochizuki, (Nagoya Bunri College, Japan)	167
Effect of green tea catechins on learning and memory in senescence-accelerated mice.	
Keiko Unno, Fumiyo Takabayashi, Naoto Oku (Univ. of Shizuoka, Japan)	170
Functionality of the extract from the anthocyanin-containing tea, Benibana-Cha.	
Norihiko Terahara (Minami-Kyushu Univ., Japan ), Yoshiyuki Takeda, Atsushi Nesumi	
(National Institute of Vegetable and Tea Science, Japan)	173
Collagen gel contraction by fibroblasts is inhibited by (-)-epigallocatechin gallate .	
Yasuo Suzuki, Mamoru Isemura (Univ. of Shizuoka, Japan)	177
Effects of tea catechins on the ere-regulated estrogenic activity assessed by GFP expression	
system.	
Ryoko Kuruto-Niwa, Ryushi Nozawa (Univ. of Shizuoka, Japan)	181
L-Theanine – A unique amino acid of green tea and its physiological effects in humans.	
Tsutomu Okubo, Tomoko Ueda, Makoto Ozeki, Lekh R. Juneja (Taiyo Kagaku Co., Ltd.,	
Japan ) Hidehiko Yokogoshi (Univ. of Shizuoka, Japan ), Seiichi Matsumoto (Japan Family	
Planning Association, Japan)	184
Degranulation inhibition of human basophilic KU812 cells by green tea catechins and their cell	
surface binding.	
Yuko Kiyohara, Hirofumi Tachibana, Koji Yamada (Kyushu Univ., Japan)	188
Suppressive effect of catechin derivatives on the expression of the high affinity IgE receptor Fc $\varepsilon$	
RI in human basophilic KU812 cells.	
Yoshinori Fujimura, Hirofumi Tachibana, Koji Yamada (Kyushu Univ., Japan)	192
Effects of tea catechins on the Fe(II)-induced DNA scission.	
Yasunori Ohashi, Mariko Konishi, Hiroe Yoshioka (Shizuoka Univ., Japan), Hisashi Yoshioka (Univ. of Shizuoka, Japan)	196

Shin-ichi Inoue, Yoko Takimoto ( Aichi Institute of Technology, Japan ), Takami Yoshida,	
Hiroki Miyamatsu ( HERBE Co., Ltd., Japan ), Hiroshi Okamoto (Aichi Institute of Technology,	
Japan )	200
Chemical factors in biological functions of catechins (1) Affinity for lipid bilayers.	
Katsuko Kajiya, Shigenori Kumazawa, Tsutomu Nakayama (Univ. of Shizuoka, Japan)	204
Efficient synthesis of medicinally interesting compounds utilizing Camellia sinensis cell culture.	
Masumi Takemoto, Koichi Kato, Yoko Hongo, Yuki Matsuoka, Ayako Fukuyo, Kiyoshi	
Tanaka (Univ. of Shizuoka, Japan ), Youichi Aoshima (Shizuoka Agricultural Experiment Station, Japan )	208
Enhanced effect of green tea catechin on a medical treatment of gastric ulcer eaused by	
Helicobacter pylori.	
Fumiyo Takabayashi, Noboru Harada ( Univ. of Shizuoka, Japan ), Masami Yamada,	
Binzaburo Murohisa ( Hamamatsu Medical Center, Japan ), Itaro Oguni ( Univ. of Shizuoka,	
Japan )	212
Flavor compounds responsible for antimutagenicity of tea infusion.	
Akihiro Ohara, YuanJing Fan, Tsugio Matsuhisa (Meijo Univ., Japan)	214
The effect of drinking green tea on diabetic nephropathy.	
Yasuko Takano, Masashi Honda, Yuki Yoshihara, Mizue Mogi (Shiseikai Daini Hospital,	
Japan ), Kohsuke Hayamizu, Tomoko Tsuzi, Manzen Shin (FANCL Corporation, Japan ),	
Toshiko Takemiya ( Tokyo Women's Medical Univ., Japan )	218
A study on the effects of green tea intake on blood glucose in Shizuoka, Japan.	
Yoko Fukino ( Univ. of Shizuoka, Japan ), Nobuo Aoki ( Hamamatsu Univ. School of	
Medicine, Japan ), Tokiko Takeshita, Yoshinori Tojo (Univ. of Shizuoka, Japan ), Tsutomu	
Okubo (Taiyo Kagaku Co., Ltd., Japan )	222
Intake of green tea of a diabetic.	
Yuki Yoshihara, Masashi Honda, Yasuko Takano, Mizue Mogi (Shiseikai Daini Hospital,	
Japan ), Kohsuke Hayamizu, Tomoko Tsuzi, Manzen Shin (FANCL Corporation, Japan ),	
Toshiko Takemiya ( Tokyo Women's Medical Univ., Japan )	226
Effects of functional ingredients of O-CHA on gastric mucosal inflammatory response against	
Hericobacter pylori.	
Osamu Handa, Yuji Naito, Tomohisa Takagi, Takeshi Ishikawa, Naoyuki Matsumoto,	
Kyoichi Kasai, Norimasa Yoshida, Toshikazu Yoshikawa (Kyoto Pref. Univ. of Medicine, Japan)	230
Strictinin inhibits interleukin 4-induced STAT6 activation and antigen-specific IgE production.	<i>ل د</i> يد
Hirofumi Tachibana, Takao Kubo (Kyushu Univ., Japan ), Toshio Miyase (Univ. of	
Shizuoka, Japan ), Sousuke Tanino, Miki Yoshimoto, Kayo Nakao, Kazuko Nakamura	
(Kyushu Univ., Japan), Mitsuaki Sano (Univ. of Shizuoka, Japan), Mari Maeda-Yamamoto	
(National Institute of Vegetable and Tea Science, Japan), Koji Yamada (Kyushu Univ., Japan)	
	234

.

A clinical study of tea catechin inhalation effects on methicilline resistant Staphylococcus aureus	
(MRSA).	
Hiroshi Yamada, Hirofumi Okabe, Takako Shimizu, Tetsushi Atsumi, Rieko Murata,	
Noriyo Ozawa ( Seirei Hamamatsu General Hospital, Japan ), Shinichiro Nishio, Kazuhiro	
Kosuge, Hiroshi Watanabe, Kyoichi Ohashi (Hamamatsu Univ. School of Medicine, Japan ),	
Yukihiko Hara (Tokyo Food Techno Co., Ltd., Japan)	241
Antidiabetic effect of green tea and mechanism of its hypoglycemic action.	
Purusotam Basnet (Toyama Medical & Pharmaceutical Univ., Japan, Pokhara Univ., Nepal),	
Katsuko Komatsu, Mineo Shimizu (Toyama Medical & Pharmaceutical Univ., Japan )	243
Synergic, addictive, indifferent and antagonistic effects in combinations of tea catechin and 20	
antibiotics against MRSA.	
Zhi-Qing Hu, Wei-Hua Zhao ( Showa Univ. School of Medicine, Japan ), Yukihiko Hara	
( Tokyo Food Techno Co., Ltd., Japan ), Tadakatsu Shimamura ( Showa Univ. School of	
Medicine, Japan )	247
Effect of dietary green tea by-product on productive and composition of EGGS in laying hens.	
Chul-Ju Yang, Ill-Sup Nou, Dong-Hwan Oh, Young-Chul Joung, D. Uuganbayar	
(Sunchon National Univ., Korea)	250
Effects of dietary green tea by-product on productivity and body composition in broiler.	
Chul-Ju Yang, (Sunchon National Univ., Korea), Young-Moo Cho (National Livestock	
Researcher Institute, Korea), Eun-Choung Lim, Il-Young Yang (Sunchon National Univ.,	•
Korea)	253
Moderate green tea Intake may increase CD4/CD8 ratio in elderly women.	
Hirohito Tsuboi (Aichi Medical Univ., Japan), Osamu Fukino, Hiroichi Takeuchi (Shizuoka	
Health Institute, Japan ), Fumio Kobayashi ( Aichi Medical Univ., Japan )	257
Antimicrobial activity of Japanese green tea; present position and future prospects.	
Jeremy Hamilton-Miller, Peter Taylor (Univ. of London, U.K.)	261
Drinking tea suppresses the transformation of aryl hydrocarbon receptor induced by dioxin.	
Itsuko Fukuda, Yoshiyuki Yabushita (Kobe Univ., Japan ), Iwao Sakane, Takami Kakuda	
(ITO-EN Ltd., Japan), Kazuki Kanazawa, Gen-ichi Danno, Hitoshi Ashida (Kobe Univ.,	
Japan )	264
Suppressive effect of green tea administration on DNA methylation.	
Hidetaka Yamada, Toshiyuki Suzuki, Takuro Yamakawa, Hitoshi Inayoshi (Shizuoka	
Institute of Science and Technology, Japan ), Kenichi Sunayama, Satoshi Nakamura	
( Hamamatsu Univ. School of Medicine, Japan ), Yoshiyuki Nakamura ( Univ. of Shizuoka,	
Japan ), Toshihiro Tsuneyoshi (Shizuoka Institute of Science and Technology, Japan )	268
Neuroprotective effects of theanine on ischemic delayed neuronal death.	
Takami Kakuda (ITO-EN Ltd., Japan)	272
The effect of tea derived epigallocatechin on mouse intestinal motility in vitro.	
Michal Ceregrzyn, Mitsuhide Ogawa, Atsukazu Kuwahara (Univ. of Shizuoka)	276
How do polyphenols scavenge the OH radical? - A study by the rapid - flow ESR method	
Yasushi Senba, Kieko Saito (Univ. of Shizuoka, Japan ), Yasunori Ohashi, Hiroe Yoshioka	
(Shizuoka Univ., Japan), Hisashi Yoshioka (Univ. of Shizuoka, Japan)	280 .

On-line screening method for anti-oxidants by liquid chromatography with chemiluminescence
detection.
Toshimasa Toyo'oka, Tomoaki Kashiwazaki, Masaru Kato (Univ. of Shizuoka, Japan)
Supplementation with green tea catechins protects large intestinal mucosa against lipid
peroxidation in rats.
Masako Yamamoto, Tatsuya Kamizuru, Tomoka Kondo, Yoshiko Nakabayashi
( Tokushima Bunri Univ., Japan ), Sayuri Miyamoto, Jae-Hak Moon, Junji Terao ( The
Univ. of Tokushima, Japan )
Studies about monoamine oxidase inhibitory activities on Korean Green Tea.
Keum Hee Hwang, Sang-Hee Byun, Sun-Hee Lim (STC NARA Co., Korea)
Factors affecting the rate constants of radical scavenging by antioxidants.
Mariko Konishi, Yasunori Ohashi ( Shizuoka Univ., Japan ), Yasushi Senba, Hisashi
Yoshioka (Univ. of Shizuoka, Japan ), Hiroe Yoshioka (Shizuoka Univ., Japan )
Measurement of OH radical-scavenging activity of tea catechins using gamma-irradiation.
Hiroe Yoshioka, Yasunori Ohashi, Mariko Konishi, Mikio Kawasaki (Shizuoka Univ.,
Japan ), Hirotomo Hase (Kyoto Univ., Japan), Yasushi Senba, Hisashi Yoshioka (Univ. of
Shizuoka, Japan )
Lipid peroxyl radical-scavenging activity of beverages, especially of tea, in vitro.
Ayako Kanazawa, Mayumi Kai, Yuki Sadohara, Ikumi Saito, Akiko Tanoue (Kumamoto
Univ., Japan ), Tomohiro Sawa, Takaaki Akaike, Hiroshi Maeda ( Kumamoto Univ.
Medical School, Japan )
Chemical factors in biological functions of catechins (2) Formation of hydrogen peroxide.
Tsutomu Nakayama, Megumi Ichiba, Miho Kuwabara, Shigenori Kumazawa (Univ. of
Shizuoka, Japan )
Monoamine oxidase inhibitory activity of green tea produced in China, its processing and
provincial differences.
Ha-Sook Chung ( Duksung Women's Univ., Korea ), Keum-Hee Hwang, Sang-Hee Byun,
Sun-Hee Lim (STC NARA Co., Korea)
Some antioxidative component contents in Sencha of popular prices and its fresh infusions.
Fukiko Sakamura (Hiroshima Chuo Women's Jr. College, Japan)
Protective action of green tea extract against reperfusion injury in rats and its anti-oxidative and
anti-inflammtory properties.
Nobuaki Yagi ( Kyoto First Red Cross Hospital, Kyoto Pref. Univ. of Medicine, Japan ), Yuji
Naito, Kiichi Matsuyama, Yukiko Tanaka, Norimasa Yoshida, Toshikazu Yoshikawa
(Kyoto Pref. Univ. of Medicine, Japan ), Jun Ochiai, Sotaro Fujimoto (Kyoto First Red Cross
Hospital, Japan )
Laboratory studies on cancer chemoprevention by tea pigments.
Chi Han (Chinese Academy of Preventive Medicine, P.R.China)
Apoptosis-inducing activity of the enzyme digestion product of green tea residue.
Yuko Katsuno ( Tauns Laboratories, Inc., Japan ), Mamoru Isemura ( Univ. of Shizuoka,
Japan)

Inhibition of 7,12-dimethylbenz[a]anthracene (DMBA) – induced oral carcinogenesis in hamsters	
by tea and curcumin.	
Ning Li (Rutgers Univ., USA, Chinese Academy of Preventive Medicine, P.R.China), Xiaoxin	
Chen, Jie Liao, Guangyu Yang, Su Wang, Youssef Josephson (Rutgers Univ., USA),	
Chi Han, Junshi Chen (Chinese Academy of Preventive Medicine, P.R.China), Mou-Toan	
Huang, Chung S. Yang (Rutgers Univ., USA)	33
Studies of apoptotic signaling pathway in human cancer cells by (-)EGCG of green tea.	
Won-Hun Jeong ( Wonkwang Health Science College, Korea ), Rae-Kil Park, Mee-Kyung	
Shin (Wonkwang Univ., Korea)	33
The radiation protection and the anti-cancer effects of extracted from the Miroku tea for healthy	
food.	
Chiho Yagi, Yuko Masuda, Kazue Ogura, Ikukatu Suzuki (Suzuka Univ. of Medical	
Science, Japan ), Takeo Hasegawa, Yasuhiro Kosaka (Kosaka Tea Industry, Japan )	34
A new anticarcinogenic ingredient, tea aqueous non-dialysates (TNDs) come from tea leaves.	
Yoshiyuki Nakamura ( Univ. of Shizuoka, Japan ), Masanori Kuroyanagi ( Hiroshima Pref.	
Univ., Japan ), Tadataka Noro, Mitsuaki Sano (Univ. of Shizuoka, Japan ) Kyoji Yoshino	
(Numazu College of Technology, Japan )	34
Suppressive effect of green tea components on cell expression of ICAM-1 induced by TNF- $\alpha$ in	
human umbilical vein endothelial cells.	
Kayoko Shimoi, Hitomi Takemura, Kazuhiko Kaji, Shigenori Kumazawa, Tsutomu	
Nakayama (Univ. of Shizuoka, Japan)	3:
Studies on growth inhibition of human stomach cancer cells by treatment with tea catechins.	
Naomi Hirabayashi, Tomoko Saito, Hiroko Taguchi, Yoshie Takahashi, Nobuyuki Horie,	
Keiichi Takeishi (Univ. of Shizuoka, Japan )	35
Apoptosis induction by epigallocatechin gallate involves its binding to Fas.	
Sumio Hayakawa (Univ. of Shizuoka, Japan ), Koichi Saeki (International Medical Center of	
Japan, Japan ), Masaki Sazuka, Yasuo Suzuki, Yutaka Shoji, Yoshiyuki Nakamura (Univ.	
of Shizuoka, Japan ), Akira You (International Medical Center of Japan, Japan ), Mamoru	
Isemura (Univ. of Shizuoka, Japan )	35
The conditions of pulverizing O-CHA leaves affect the growth inhibition of tumor cells.	
Yasuhisa Naito (Hamamatsu Univ. School of Medicine), Fumio Osakabe (Nihon Ceratec Co.,	
Japan ), Megumu Miyamoto, Yukio Koide, Reiji Aoshima (Hamamatsu Univ. School of	
Medicine, Japan )	36
Anti-hyperglycemic extracts of fresh young leaves of tea in streptozotocin-and KK-A' -Diabetic	
mice.	
Yoshitaka Sugihara, Hiroshi Tsuneki (Toyama Medical and Pharmaceutical Univ., Japan ),	
Jin-Bin Wu, Hui-Ya Ho (China Medical College, P.R.China ), Masayuki Kimura, Ikuko	
Kimura (Toyama Medical and Pharmaceutical Univ., Japan )	36
Beneficial effects of green and black tea on animal models of atherosclerosis and diabetes.	
Joe A. Vinson, Nancy Wu, Karolyn Teufel, Jennifer Zhang (Univ. of Scranton, USA)	36
The sources of malodor removal activity in various teas.	
Shan-Shan Wu, Lucy Sun Hwang, (National Taiwan Univ., Taiwan)	36

(-)-Epigallocatechin gallate and polyphenon-E, a mixture of green tea catechins, inhibit	
angiogenesis induced by mouse sarcoma S180 cells.	
Kazuhiko Kaji, Koichi Igura, Toshiro Ohta (Univ. of Shizuoka, Japan ), Yukihiko Hara	
(Tokyo Food Techno Co., Ltd., Japan)	368
Green tea may improve the glucose tolerance in Sprague-Dawley rats.	
Lucy Sun Hwang, Liang-Yi Wu (National Taiwan Univ., Taiwan), Chi-Chang Juan, Low-	
Tone Ho (VGH-TPE, Taiwan)	369
Green tea may improve insulin resistance in a fructose-fed rat model.	
Liang-Yi Wu (National Taiwan Univ., Taiwan), Chi-Chang Juan, Low-Tone Ho (VGH-TPE,	
Taiwan ), Lucy Sun Hwang (National Taiwan Univ., Taiwan )	369

•

## Session IV. MARKETING AND INDUSTRY

The present condition Shizuoka Tea business and problem from circulation.	
流通から見た静岡茶業の現状と課題	
Kisaburo Warashina (Shizuoka Tea Auction Co., Ltd., Japan)	1
藁科喜三郎 (株式会社 静岡茶市場)	
Problem and prospects of Shizuoka Tea business.	
静岡県茶業の課題と展望	
Susumu Fujimori (Society of Tea Science, Japan)	3
藤森 進 (茶学術研究会)	
The prospect of green tea beverage market.	
緑茶飲料の開発と将来	
Yasuo Mori (ITOEN Ltd., Japan)	5
森泰男((株) 伊藤園)	
Tea, Health, and Cooking.	
Mutsuko Tokunaga (Food Director, Japan)	14
Suggestion for Japanese tea business on the basis of experiences.	
茶業の実体験を踏まえた今後の日本茶業への提言	
Tetsuya Oishi (Japan Tea Commerce & Industry Cooperative Association, Japan)	17
大石哲也 (全国茶商工業協同組合連合会)	
The management and administrative reorganization plan and outlook for the cooperative tea	
processors association.	
Shoji Sawamura (Shizuoka Tea Experiment Station, Japan)	20
The lack of the understanding of the consumers' needs and the concept development.	
Yutaka Koizumi (Shizuoka Tea Experiment Station, Japan )	24
The development of machinary system to support speciality shops of green tea.	
Kazuo Sono (SAM Factory Cooperative Association, Japan)	27
The establishment of cooperative association to support speciality shops of green tea.	
Masahiko Kanoh (SAM Factory Cooperative Association, Japan)	30
The use and culture of tea in Korea.	
Sung Hee Choi ( Dongeui Univ., Korea ), Young Gul Kim ( Jang Won Ind., Korea ), Keun-	
Hyung Park, (Chonnam National Univ., Korea)	34
Characterization of flavor of tea made from some temples tea in Korea.	
Sung Hee Choi ( Dongeui Univ., Korea )	37
Organic tea production in China.	
Chen Zongmao (Tea Research Institute, CAAS, P.R.China)	41
The production and consumption of tea in China.	
Lin Zhi (Tea Research Institute, CAAS, P.R.China)	45
The present and future of the Chinese tea market.	
Wang Ya-lei (Chinese Tea Association of Japan, P.R.China)	49
Taiwan teas & the relationship with Japan.	
Jackson Huang (Sha Keng Tea Manufactory, Taiwan)	53

Thomas Shu (ABC Tea House, USA)	5:
The marketing channels of tea in Taiwan.	J.
Wan-Tran Huang (National Chung Hsing Univ., Taiwan), Wu-Cheng Liao (Ling Tung	
College, Taiwan)	5
The present and future of the tea industry of Turkey.	·
Ender Sinan Poyrazoglu, Nevzat Artik (Univ. of Ankara, Turkey)	6
Features of tea ( Camellia sinensis L. ) production in Nigeria.	Ū
Charles R. Obatolu, Ayoola B. Fasina (Cocoa Research Institute of Nigeria, Nigeria)	6
Microbiological circumstances of crude tea and its plant.	
Shin-ichi Sawamura, Eri Ito, Ichiro Kato (ITOEN Ltd., Japan)	7
The development of the film food of green tea.	
Iemasa Takahashi (Shizuoka Tea Experiment Station, Japan)	7:
Near infrared analysis for determination of $\gamma$ -Aminobutylic Acid in Gabaron Tea.	•
Reiji Sekiguchi, Takashi Shibuya, Ikue Takeoka, Noriko Saito (Japan Food Research Lab.,	
Japan ), Masashi Omori (Otsuma Women's Univ., Japan )	79
Effects of Gabaron tea components on angiotensin I-converting enzyme activity in rat.	
Lin Zhi ( Tea Research Institute, CAAS, P.R.China ), Masashi Omori ( Otsuma Women's	
Univ., Japan )	8:
A simulation for predicting the concentration of hot water extracts from green tea leaves:	
Batchwise and continuous extraction.	
Kenkou Tsuji, Mari Maeda-Yamamoto (National Institute of Vegetable and Tea Science,	
Japan )	8:
Concentration of tea-extracts with membrane evaporators.	
Kaori Mizutani, Susumu Nii, Katuroku Takahashi (Nagoya Univ., Japan)	89
nterrelation between the tannin value and phenolic components in green tea.	
<b>录茶中のフェノール性化合物とタンニン量測定値の相関について</b>	
Masayuki Suzuki ( Tokyo Food Techno Co., Ltd., Japan ), Kayo Hijikata, Jun Katsuyama	
(Mitsui Norin Co., Ltd., Japan), Fumio Nanjo (Tokyo Food Techno Co., Ltd., Japan)	93
<u>鈴木壮幸</u> (東京フードテクノ(株))、土方佳代、勝山順 (三井農林(株))、南条文雄 (東	
京フードテクノ(株))	
Retardation of Kimchi fermentation and growth inhibition of related microorganisms by tea	
atechins.	
Ji-Hyang Wee, Keun-Hyung Park (Chonnam National Univ., Korea)	97
Comparison of volatiles components on the teas by solid phase micro extraction (SPME).	
Tomomi Kinoshita ( Otsuma Women's Univ., Japan ), Tadayoshi Tanaka ( Kyoritsu Women's	
Junior College., Japan ), Miyuki Kato ( Kagawa Univ., Japan ), Masashi Omori ( Otsuma	
Women's Univ., Japan )	100
The deterioration of tea beverage aroma by heat and sunlight.	
Hitoshi Kinugasa, Kazunori Okanoya, Shuuhei Kuribayashi, Tadakazu Takeo (ITO-EN	
Tudanta Tunco (110 Div	

Changes of catechins in green tea drinks during production process.
Shinichi Suematsu ( Toyo Junior College of Food Technology, Japan ), Yoshihiro Hisanobu
Kazuko Nakano ( Toyo Institute of Food Technology Japan )
Oolong tea and beverage.
Yohkichi Matsui (Suntory Ltd., Japan)
Capillary electrophoresis- A new tool for quality evaluation.
Hideki Horie, Tomomi Ujihara, Katsunori Kohata (National Institute of Vegetable and Te
Science, Japan )
Application of near infrared spectroscopy in quality evaluation and analysis of Japanese tea.
Tadashi Goto (Shizuoka Tea Experiment Station, Japan)
Study on estimation of quality of O-CHA products.
Seiji Katayama, Daisuke Kawai, Ryosuke Nishio, Keiko Kimura (Univ. of Shizuoka
Japan )
Top middle last note aroma evaluation of Japanese green tea using electronic nose containing
trap-tube.
Jun-ichi Kita, Yoshihiro Aoyama, Hisamitu Akamaru (Shimazu Corporation, Japan)
Quantification and discrimination of taste of green tea using a taste sensor.
Toshiaki Adachi (Kyushu Univ., Japan ), Miki Yahiro (Kyushu Jr. College of Kinki Univ.
Japan ), Hiroko Nagasue, Kiyoshi Toko (Kyushu Univ., Japan )
Taste sensing-system for objective evaluation of taste.
Kobayashi Yoshikazu, Akira Taniguchi, Hidekazu Ikezaki (Anritsu Corporation, Japan
Kiyoshi Toko (Kyushu Univ., Japan)
Green tea in the Gift Market.
Kenji Usui (Fuji Keizai Co., Ltd., Japan)
Consumer behavior in purchasing green tea and sales management.
Toshiyuki Taguchi (Shizuoka Sangyo Univ., Japan)
Tea research and development in Sri Lanka.
Wester Modder (The Tea Research Institute of Sri Lanka, Sri Lanka)
Marketing, industry and appearance of Gabaron tea.
Seiichiro Hagiri (Hagiri Co., Ltd., Japan)