

ISBN 978-979-8510-13-7

1

8

PROCEEDING

International Seminar

on Horticulture to Support Food Security 2010

June 22-23 ,2010

Bandar Lampung, INDONESIA



Editors:

Douglas Archbold
Michael Reed
Janet Paterson
Soesiladi Esti Widodo
Siti Nurdjanah
Darwin H. Pangaribuan

Organized By :



UK
UNIVERSITY OF
KENTUCKY®

HALAMAN PENGESAHAN

Judul : Basic Causes of Horticultural Farmer Poverty (Cabbage and Chilli) in Gisting District of Tanggamus Regency

Penulis : Tubagus Hasanuddin
 Dame Trully Gultom
 Rio Prayitno
 Teguh Endaryanto

Instansi : Fakultas Pertanian Universitas Lampung

Publikasi : Prosiding Internasional
 : ISBN 978-979-8510-13-7
 : June 22-23,2010
 : Bandar Lampung, Indonesia

Penerbit : University of Lampung, 2010

Bandar Lampung, 28 September

2010

Mengetahui
 Dekan
 Fakultas Pertanian UNILA

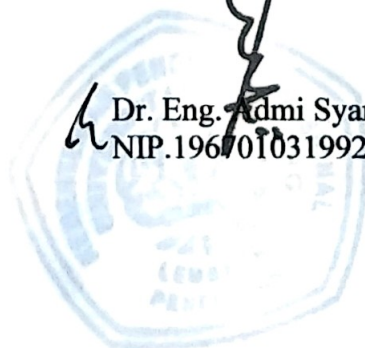
Penulis



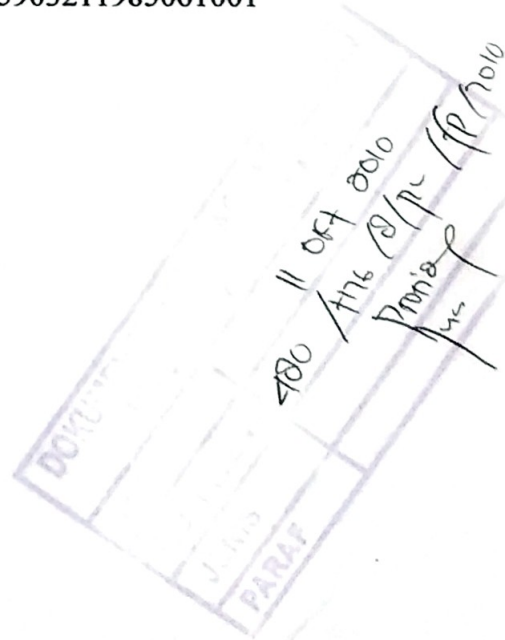
Prof. Dr. E. Zwan Abbas Zakaria, M.S
 NIP. 196108261987021001

Dr. Ir. Tubagus Hasanuddin, M.S
 NIP. 195903211985061001

Menyetujui,
 Ketua Lembaga Penelitian
 Universitas Lampung



Dr. Eng. Admi Syarif
 NIP. 196701031992031003



PROCEEDING

International Seminar

on Horticulture to Support Food Security 2010

June 22-23, 2010

Bandar Lampung, INDONESIA

Editors:

Douglas Archbold (University of Kentucky, USA)

Michael Reed (University of Kentucky, USA)

Janet Paterson (University of New South Wales, Australia)

Soesiladi Esti Widodo (University of Lampung, Indonesia)

Siti Nurdjanah (University of Lampung, Indonesia)

Darwin Pangaribuan (University of Lampung, Indonesia)

Published by :

University of Lampung, 2010

**INTERNATIONAL SEMINAR ON HORTICULTURE
TO SUPPORT FOOD SECURITY 2010**

Pusiban Building, Office of Lampung Provincial Government
Bandar Lampung - Indonesia
June 22-23, 2010

Secretariat :
Department of Agro-Industry Technology
Faculty of Agriculture
University of Lampung, Indonesia
Phone/Fax : +62 721 700682
www.ishsfs.unila.ac.id
e-mail : ishsfs@gmail.com

PREFACE

Growing populations across the world, economic growth and changes in dietary patterns have caused both the production and consumption of horticultural produce, mainly fruit and vegetables, increasingly important. Horticulture, which includes the production of fruits, vegetables, flowers, spices, medicinal and aromatic plants and plantation crops, has a vital role in farm income enhancement, poverty alleviation, food security, as well as sustainable agriculture. However, this sector severely suffers from postharvest losses. Some estimates suggest that about 30–40% of fruit and vegetables are lost or abandoned after being harvested. Huge postharvest losses result in diminished returns for producers, and reduced food availability.

It is very clear that postharvest management determines food quality and safety, competitiveness in the market, and the profits earned by producers. However, the postharvest management of fruit and vegetables in most developing countries is very poor.

The major constraints include inefficient handling and transportation; poor technologies for storage, processing, and packaging; and poor infrastructure.

In order to overcome the incidence of the huge postharvest losses in the region and new challenges faced under trade liberalization and globalization, serious efforts are needed to reduce postharvest losses of horticultural produce, and to support food security.

Therefore, the University of Lampung in collaboration with the Government of Lampung Province as well as the University of Kentucky USA has organized this seminar with the objectives: 1) to discuss recent developments in postharvest handling, processing and marketing of horticultural produce, 2) to identify issues and constraints to reduce postharvest losses, 3) to define strategies and measures to reduce such losses in order to support food security, 4) to discuss marketing and food security issues, and challenges in the postharvest management of horticultural produce, issues and obstacles to improve the marketing and safety of postharvest handling and processing of horticultural produce.

It is our hope that serious consideration will be given to the recommendations of International Seminar on Horticulture to Support Food Security in shaping the future development of the production, postharvest handling, processing and marketing of horticultural produce.

June 22, 2010

Organizing Committee
International Seminar for Horticulture to Support Food Security 2010
Bandar Lampung - Indonesia

Website: <http://www.ishsfs2010.unila.ac.id/>
E-mail: ishsfs@gmail.com



EVENT SCHEDULE

TIME				MODERATOR	SPEAKERS
Tuesday - June 22, 2010					
08.00-08.30	Registration				
	Opening Ceremony				
08.30-08.40	Report from ISHSFS's Chairman				Sandi Asmara, M.Si.
08.40-09.00	Speech from Rector of University of Lampung				Prof. Dr. Ir. Sugeng P Harianto, M.S.
09.00-09.30	Speech and Event Opening Governor of Lampung's Province				Drs. Hi. Sjachroedin S.Z.P., S.H.
09.30-09.40	Prayer				Dr. Ir. Hi. M.A. Syamsul Arif, M.Sc.
09.40-10.00	Break				
10.00-12.00	Key Note Speakers		Prof. Dr. Ir. Tirza Hanum, M.S.	Dr. Ir. Ahmad Dimiyati	
	1. Directorate General of Horticulture, Department of Agriculture Republic of Indonesia			Prof. Douglas Archbold, Ph.D.	
	2. Horticulture Department, College of Agriculture University of Kentucky, USA				
12.00-13.00	Lunch and Prayer				
13.00-15.00	Plenary Speakers :		Prof. Dr. Ir. Bustanul Arifin, M.Sc.	Ir. Bihikmi Soefian, M.M Prof. Dr. Ir. S. Esti Widodo Hasan J. Widjaja, M.Engr Ir. Nurjaya, M.M. Ir. I Made Donny Waspada	
15.40-17.00	Parallel Seminar				
	Group A: Horticultural Biology and Physiology	Group B: Horticultural Postharvest Handling and Processing Technology	Group C: Horticultural Pests and Diseases & Horticultural Postharvest Handling and Processing Technology	Group D: Economy of Horticulture of Food Security	
15.40-16.20	Session 1	Session 1	Session 1	Session 1	
16.20-17.00	Session 2	Session 2	Session 2	Session 2	
Wednesday - June 23, 2010					
08.00-14.00	Parallel Seminar				
	Group A: Horticultural Biology and Physiology	Group B: Horticultural Postharvest Handling and Processing Technology	Group C: Horticultural Pests and Diseases & Horticultural Postharvest Handling and Processing Technology	Group D: Economy of Horticulture of Food Security	
08.00-08.40	Session 3	Session 3	Session 3	Session 3	
08.40-09.20	Session 4	Session 4	Session 4	Session 4	
09.20-10.00	Session 5	Session 5	Session 5	Session 5	
10.00-10.20	Break				
10.20-11.00	Session 6	Session 6	Session 6	Session 6	
11.00-11.50	Session 7	Session 7	Session 7	Session 7	
11.50-13.00	Lunch and Prayer				
13.00-14.00	Session 8	Session 8	Session 8	Session 8	
14.00	Closing				

TABLE OF CONTENTS

	Page
Preface	iii
Welcoming Address from the Organizing Committee	iv
Welcoming Address from Rector of Lampung University	v
Event Schedule	vi
Table of Contents	vii
 KEYNOTE SPEAKER'S PAPER	
Increasing Food Security with Postharvest Research	KP-1
Douglas Archbold	
 PLENARY SPEAKER'S PAPER	
Problems and Developing Aspects Relating to Harvest and Postharvest Handling of Tropical Fruits	KP-6
Soesiladi Esti Widodo	
 SEMINAR PAPERS	
Group A: Horticultural Biology and Physiology	
1 Quality variation of Chilli fruit (<i>Capsicum annum</i>) due to the salt changes in the Saline Soil Solution	A-2
Wanti Mindari	
2 Adaptation Test of the Three Local Cultivars of North Maluku Tomato (<i>Lycopersicon esculentum</i>) on Saline Sand	A-7
Aisjah Ratnawaty Ryaadin, Natal Basuki, Asrul Dedy Ali Hasan	
3 The Changes Content of Cytokinin and Gibberellin on Growth Stage and Age of Mangosteen Plant (<i>Garcinia Mangostana</i> L.)	A-15
Ramdan Hidayat	
4 Accelerating the Growth of Mangosteen (<i>Garcinia mangostana</i> L.) at Agroforestry System in District of Kerinci, Jambi Province	A-23
Nerty Soverda	
5 Combining <i>Wedelia trilobata</i> and Inorganic-N Fertilizer for Pepper Growth and Yield	A-32
Nanik Setyowati, Uswatun Nurjanah, Melva M. Manurung	
6 Four Kinds Of Materials Litter Potentials As Substitution Material For Media Grows Of White Oyster Mushroom (<i>Pleurotus ostreatus</i>)	A-36
Widiwurjani	
7 Growth Analysis of Sweetcorn and Its Correlation to the Yield at Different Rate Application of Palm Oil Sludge Compost	A-41
Merakati Handajaningih	

8	The Role of Coconut Water in Horticultural Plant Tissue Culture	A-46
	Jeany Polii Mandang	
9	Energy Input-Output Analysis for Watermelon Production	A-53
	Agus Haryanto, Dwi Cahyani, Fadil Murda Kusuma, Arif Dwi Santoso	
10	Developing Hydroponic technology at Medium Altitude, without pesticide for medium and small agribusiness Case:tomato cuvar Recento.....	A-60
	Dedy Widayat, Aos M Akas and Nursuhud	
11	Effects Of Goat Manure On Growth, Yield, And Economic Impacts Of Vegetable Intercrops In Young Coffee Plantation.....	A-65
	Agus Karyanto, Sugiarno, and Rusdi Evizal	
12	The Response of Cocoa Seedlings due to Application of <i>Trichoderma</i> spp Grown on Different Media.....	A-75
	Sriwati R, Chamzurni T, Ardiansyah	
13	The Effect of Nitrogen Sources and Types of Medium Subculture on <i>Brassolaeliocattleya</i> (Blc.) Amy Wakasugi Shoots Growth.....	A-81
	Yayat Rochayat, Anne Nuraini and Mirna Oktavani	
14	Effects of Benzyladenine on in vitro shoot multiplication of Banana (<i>Musa paradisiaca</i> Linn) cv. Anihon Kuning and Tanduk.....	A-88
	Dwi Hapsoro, Mochamad Ivan Alisan, Titiek Ismaryati, and Yusnita	
15	In Vitro Propagation of Anthurium plowmanii cv. Wave of Love and Plantlet Acclimatization.....	A-95
	Yusnita, Sismanto, and Dwi Hapsoro	
16	Ethyene Used in The Breaking of Potato Tuber Dormancy (<i>Solanum tuberosum</i> L) Variety of Atlantic and Superjohn.....	A-101
	Johannes E. X. Rogi, Selvie Tumbelaka, and Shubzan Andi Mahmud	
17	Habitat Mapping and Rafflesia Condition in Bengkulu	A-104
	Yulian Idris	
18	Insect Diversity on The Ecosystem of Citrus (<i>Citrus</i> spp.) Plantation in East Java.....	A-111
	Indriya Radiyanto and Ketut Sri Marhaeni J	
19	In Vitro Seed Germination, Seedling Growth and Acclimatization of Dendrobium hybrids (<i>Orchidaceae</i>).....	A-116
	Sri Ramadiana, Ronaid Bunga Mayang, Dwi Hapsoro, and Yusnita	
20	Yield Tests of Some yard Long Bean Genotype on Two Environment	A-123
	Nyimas Sa'diyah, Tjipto Roso Basoeki, Eko Suprihanto, Ricky Aris Tiawan, and Setyo Dwi Utomo	
21	Responen of Protocorm Like Bodies Hybrid Dendrobium Orchid on Various Kind Types and Concentration of Cytokinin and Auxin on Murashige and skoog (MS) Medium.....	A-130
	Anne Nuraini, Wieny Heriliya R., Erni Suminar, and Eva Marlina	
22	Effect of Vermin Compost and Bokashi on Nutrient Content of Mustard Green and Lettuce	A-136
	Yacobus Sunaryo	

23	Isolation of Plant Growth Promoting Rhizobacteria (PGPR) from Various Plant Rhizospheres	A-141
	M. A. Syamsul Arif	
24	Respiration of Packaged Fresh Oyster (Tiram) Mushroom (<i>Pleurotus ostreatus</i>).....	A-149
	Gede Arda, B. Rahardjo	
25	Flower development and Induction of Haploid Population from Anther Culture	A-156
	A Husni, M Kosmiatin, and A. Purwito	
26	Dose Effect Of Compound Fertilizer Npk Ratios On Growth Red Betel (Piper Crocatum Ruiz And Pav.) With Two Types Of Planting Media	A-164
	Rugayah	
27	Introgression Of CMV Tolerance Genes To Hybrid Parent Of Hot Pepper: Employing Morphological And Rapid Marker To Identify Recurrent Parent Characteristics in BC2 Population	A-174
	Catur Herison, Sri Winarsih, Merakati Handayaningsih, and Rustikawati	
28	Improvement of Cayenne Chili-Pepper of Landrace Germplasms through selection for a Reduction of Abortive Flowers	A-181
	Saiful Hikam and Paul Timotiwu	
29	Genetic analysis of Maize Quantitative Traits On Ultisol Under Low Input	A-188
	Suprpto and M. Taufik	
30	Propagation of Gladiol (<i>Gladiolus hybrida</i>) by Using Benzil Adenin (BA).....	A-197
	Tri Dewi Andala Sari, Fitri Juwita Susanti	
31	Model Simulation of "Sawah-Kolam" System for Rainwater Harvesting to Support Rainfed Paddy Production in Metro City Lampung	A-201
	Sugeng Triyono, Oktafri, and Bustomi Rosadi	
32	Growth and Development of Protocorm Like Bodies Hybrid Dendrobium Grchids on MS Medium with Cytokinin and Auxin Combination	A-210
	Wieny H. Rizky, Anne Nuraini, Erni Suminar, and Karlina Syahrudin	
33	Evaluation of Mung Bean Genotypes for Resistance to Field and Storage Deterioration	A-217
	Marwanto	
Group B: Horticultural Postharvest Handling and Processing Technology		
34	Model of Technology Valuation System (A Case of Evaporative Cooling System for Horticulture Products).....	B-1
	Budi Dharmawan, Ropiudin	
35	Effect of Some Types of Banana Sago Flour and Substitution with Chocolate Powder to Taste Lompong Sago Produced	B-8
	Zuraida Zuki, Diana Silvi, Mutia Elfira	
36	The Storage of Gnetum Seeds by Mixing with Dry Sand and Burried in Soil	B-15
	Tamrin, Sandi Asmara, Henny Nurpa Anggraini	
37	Characterization of the Drying Process of Melinjo Seed.....	B-20
	Sarono, Yatim R. Widodo	

38	Influence of Source of Fat and the Difference Casia vera Extract Addition to the Quality of Ice Cream	B-29
	Diana Sylvi, Fauzan Azima, and Nur Aisyah Yati	
39	Technology of Passive Packaging for Chitosan-Coated 'Mutiarra' Guava and 'Muli' Banana	B-36
	Zulferiyenni, Soesiladi Esti Widodo	
40	The Effect of Temperature and Time on Chilli's Physical Quality and their Kinetics Model during Hot Water Treatment	B-43
	Devi Yuni Susanti, Sri Rahayoe, Tatag Ridha Prasetya	
41	Shelf-life of Salacca Fruit in Secondary Packaging of Double Corrugated Box Stacked-up on Cross and Parallel Pattern.....	B-50
	Ridwan Thohir, Yulianingsih, Dwi Amiarsi, Ira Mulyawani	
42	Development of Cocogurt Probiotic as an Indigenous Functional Food Which Rich Medium Chain Triglyceride	B-58
	Tomi Ertanto, Riyanti Ekafitri, R. H. Fitri Faradilla, Tetuko Dito Widarso, Mujiono, Ratih Dewanti Hariyadi	
43	Physical, Chemical, and Microbiological Qualities Change in Coconut Milk Probiotic Product (Cocogurt) During Storage	B-66
	Tomi Ertanto, Riyanti Ekafitri, R. H. Fitri Faradilla, Tetuko Dito Widarso, Mujiono, Ratih Dewanti Hariyadi	
44	Study of Control System Temperature And Humidity Using Microcontroller AVR Atmega 8535 On Evaporatif Cooling Equipment Used As A Store For Guarding Of Product QualityFruit And Vegetables Postharvest	B-72
	Priswanto, Ropiudin	
45	The Effect of Kinds and Percentages of Sugar Solution to the Characteristic of Lactic Fermented Drink from Sesbania (<i>Sesbania grandiflora</i> (L.) Poir) Milk.....	B-81
	Samsul Rizal, Marniza, Sutikno	
46	Early Detection of Chilling Injury Symptoms in Horticultural Product	B-90
	Y. Aris Purwanto	
47	The Study of Content and Characterization of Resistant Starch from Some Banana Types	B-94
	Nanti Musita	
48	Sensory Testing of Sweet Potato Pectin Pudding.....	B-103
	Jane Paton and Siti Nurdjanah	
49	Effect of Type of Packaging and Storage Time to the Quality of Pumpkin Substituted Donut	B-108
	Susilawati, H. Muhammad Nur	
50	Sudy on Storage Method of Papaya	B-115
	Nofiarli, Fitriana Nasution, and Kuswandi	
51	Sensory Properties of Mangostein Juice Affected by Xanthan Gum	B-119
	Siti Nurdjanah, Sefanadia Putri	

52	The Chemical and Physical Change and Shelf-life of Citrus Fruit (<i>Citrus reticulata</i> B.) during Storage at Modified Atmosphere	B-124
	Rofandi Hartanto, Ketut Indrayana	
53	In Vitro Study of Glucomannan Extracted Chemically and Enzimatically from Cassava, Gadung, and Walur as Prebiotic Agent	B-130
	Husniati, Medikasari	
54	The Effect of Chemical Treatment on Tomato Slices	B-137
	Darwin H. Pangaribuan	
55	The Effect of Melinjo Epidermis Extract on the Color and Quality of Red Chili Puree During Storage	B-144
	Dharia Renate	
56	Individual Seal-Packaging of Arumanis Mangoes Stored at Cold and Room Temperatures.....	B-151
	I Made Supartha Utama, Yohanes Setiyo, Ida Bagus Putu Gunadnya, and Nyoman Semadi Antara	
57	Effect of Fruit Maturity Level and Concentration of Betel Lime to Quality of Papaya Candied Fruit	B-160
	Nofiarli, Fitriana Nasution, and Kuswandi	
58	The Effect of Packaging Materials on the Qualities of Vacuum-Packed Fresh Cut Carrot During Low Temperature Storage	B-164
	Muhammad Nur and Susilawati	
59	Characterization of The Drying Process of Shelled Melinjo Seed	B-173
	Sarono, Yatim R. Widodo	
60	Soybeans for the Production of Modified Tempe with <i>Saccharomyces cerevisiae</i>	B-182
	Maria Erna Kustyawati	
61	Freezing Method of Straw Mushroom (<i>Volvarea volvacea</i>) using dry Ice	B-189
	Kurnia Novianti, Sutrisno, Emmy Darmawati	
62	The Effect of Chitosan Concentration at Two Level Maturity Against to Quality and Long Time of Keep Tomato (<i>Lycopersicum esculentum</i> Mill)	B-195
	Suskandini, Harwan Sutomo, and Tety Suciaty	
63	Study of Meniran (<i>Phyllanthus niruri</i>) as Drug for the Treatment of Malaria	B-200
	Subeki and Feriandi	
64	Some Biochemical and Total Lactic Acid Bacteria Changes During Natural Fermentation of the Purple Sweet Potatoes (<i>Ipomoea potatoes</i> L) Pickle.....	B-209
	Neti Yuliana, Siti Nurdjanah and Zahroh Hayati Octarini	
65	The Influence of Pectin Concentration on Chemical and Organoleptic Properties in Combining Jam of Guava and Pineapple	B-215
	Azhari Rangga	
66	The Emulsion Stability of Coconut (<i>Cocos nucifera</i> L) Milk Added with Ethanolysis Product from Palm Kernel Oil (<i>Elaeis quineensis</i> Jacq)	B-223
	Murhadi	

67	The Possibility of Using Near Infrared Spectroscopy with Portable Spectrometer to Evaluate Some Internal Properties of Pineapple Fruit Nondestructively	B-230
	Sandi Asmara , Diding Suhandy, and Meinilwita Yulia	
68	Formulation of Weaning Food and Evaluation Protein Quality from Composite Flour of Breadfruit and Velvet Bean (<i>Macuna pruriens</i> L.)	B-234
	Sri Setyani, Medika Sari and Rabiatal Adawiyah	
69	Calcium Chloride Infiltration Methods To Extend The Storage Life Of Fresh Duku.....	B-242
	Anny Yanuriati, Musolli Arief, and Parwiyanti	
70	Designing Of Evaporative Cooling Systems To Post-Harvest Of Fruits And Vegetables Quality Using Cfd (Computational Fluid Dynamics).....	B-250
	Ropiudin and Budi Dharmawan	
71	Effects of Coating and Plastic-Wrapping on the Characteristics of Fresh Rose-Apple "Cincalo" (<i>Syzygium samarangense</i>)	B-258
	Raffi Paramawati and Safitri	
72	Improvement The Harvest and Handling Method To Reduce The Postharvest Decay Of Palembang Duku.....	B-265
	Anny Yanuriati and Rindit Pambayun	
73	Effects of Starter Concentration and Incubation Period On Nata depina Characteristic Produced From Liquid Waste of Pineapple Canning Factory	B-272
	Sutikno, Samsul Rizal, and Marniza	
74	Rheological Properties of SHMP-Extracted Sweet Potato Pectin	B-279
	Janet Paterson and Siti Nurdjanah	
75	Chemical Characteristic of Sweet Potato Pectin Extracted Using Different Condition	B-286
	M Wootton and Siti Nurdjanah	
Group C: Horticultural Pests and Diseases & Horticultural Postharvest Handling and Processing Technology		
76	Biological Agents (<i>Steinernema</i> spp. Local Isolate) as Support Factor for Pest Control of False Pakchoy (<i>Spodoptera</i> sp).....	C-1
	Nugrohorini, Wagiyana, Wanti Mindari	
77	The Screening Attractiveness of Fruit Fly <i>Bactrocera</i> spp (Diptera: Tephritidae) on Aromatic Essential Oil plants	C-6
	Budi Untari, Dachriyanus, absol Hasyim, Siti Herlinda	
78	Non Destructive Quality Evaluation of Dragon Fruit Using Ultrasound Method	C-15
	Siti Djamila, I Wayan Budiastira, Sutrisno	
79	Plant Damage Caused by Leaf Feeder and Fruit Borer on Pomello Plantations in South Sulawesi	C-24
	Nurariaty Agus	
80	Response of Several Wild Banana Species to <i>Fusarium oxysporum</i> f.sp.cubense VCG 01213/16 in Screen House Study.....	C-29
	Riska, Jumjunidang	
81	Distribution Mapping of Aphids <i>Pentalonia nigronervosa</i> the Insect Vector of Banana Bunchy Top Disease (BBTD) and their Host in Manokwari Regency, West Papua Province	C-36
	Besse Amriati, Russel Messing	

82	Vegetative Compatibilty Group Test of <i>Fusarium oxysporum f.sp.cubense</i> Isolates and Identification of Infected Banana Varieties in Banana Development Area in Lampung Province	C-41
	Jumjunidang, Riska	
83	Schedulling Application of Fungicide on Purple Blotch Disease (<i>Alternaria porri</i>) Based on Weather Data: An Effort to Optimize Economic Return of Shallot Production	C-48
	Herry Nirwanto	
84	Investigation of Pesticide Residues in Horticultural Products in South Sulawesi	C-51
	Itji Diana Daud	
85	Detected and Characterize the Endophytic fungal Associated on Leaf Area Cacao (<i>Theobroma cacao L.</i>) Tree in East Aceh	C-55
	Sriwati R, Susanna, Schardl C. L	
86	Prey Consumption Rate of <i>Menochillus sexmaculata</i> Fabr (Coleptera coccinellidae) on Different Prey Densities <i>Aphis gossypii</i> Glover (Homptera: Aphididae)	C-62
	Syafrina Lamin, Siti Herlinda, Yulia Pudjiastuti, and Arinafril	
87	Insecticidal Activity of Brucein-C from Buah Makasar (<i>Brucea javanica</i>) Against Cashew Insect Pest <i>Helopeltis antonii</i>	C-67
	Subeki, Sri Hidayati, Eina karmawati, and Chandra Indriawantu	
88	Population and spesies of Fruit fly (<i>Batrocera spp.</i>) with Attractant Sticky Yellow Trap (ASYTA) Formulation from Natural Plant Product	C-79
	Sylvia Sjam, Sulaeha and Zulfitriani	
89	Effectivity of Insect Pathogen, <i>Fusarium sp.</i> in Controlling Cabbage Worm, <i>Plutella xylostella L.</i>	C-84
	Melina and Yumarto	
90	Ultrasonic Attenuation application For Detection Arumanis Mangoes Damage Caused by Fruit Fly	C-88
	Warji	
91	Distribution Of <i>Fusarium Oxysporum F.Sp. Cepae</i> Which Caused Moler Disease Through Shallot Seed Bulbs	C-96
	Sri Wiyatiningsih, Bambang Hadisutrisno, Nursamsi Pusposendjojo, and Suhardi	
92	Influence Of The Interval When Granting The <i>Streptomyces</i> To <i>Fusarium</i> Wilt Disease Development In Melon Crops	C-101
	Endang Triwahyu P. and Kurniawati	
93	Orange red mite <i>Panonychus citri</i> (McGregor) (ACARI: TETRANYCHIDAE): exotic mites, abundance on citrus, APPLE, AND COFFEE	C-107
	Retno Dyah Puspitarini	
94	Bacterial wilt incidence on banana (<i>Musa spp.</i>) plantation at Bengkulu City	C-114
	Mucharromah, Misnawaty, Rahmadi Fitriyanto	
95	Variation in the Production and Attacks of Fruit Flies on Nine Varieties of Mango at Natar Garden Experiment Lampung	C-123
	Nila Wardani	

96	Integrated Pest Management on Banana at South Lampung	C-131
	Nina Mulyanti	
97	Integrated Pest Management (IPM) Component Adoption Effect Using Natural Enemy and Botanical Pesticides in Hot Chili Cultivation	C-136
	Danarsi Diptaningsari and Nila Wardani	
98	Actinomycetes as Potential Biocontrol of Fusarium wilt Disease (<i>Fusarium oxysporum</i>) at Hot Pepper Plants	C-141
	Tri Mujoko, Endang Triwahyu P	
99	Postharvest Pathogens of some banana varieties caused by wounds and bruises Moralita Tauhid, Siti Nurdjanah, Sefanadia Putri, Verawati, Sri Mulyani, Nurhayati, Maya Sari, Refi Arieon, and Rozi A Jamain	C-151
100	Callus Formation and Regeneration of Chrysanthemum Leaf Discs Explants Through in Vitro	C-156
	Murgayanti, Suminar E, Rizky, W.H and Rustiani, S	
101	Effect of Gamma Rays Mutagen on Callus In Vitro of Pineapple (<i>Ananas comosus</i> (L.) Merr)	C-159
	Erni Suminar, Sobir, and Agus Purwito	
Group D: Economy of Horticulture and Horticulture for Food Security		
102	The Performance of Conventional Marketing Channel of Vegetables in Jogjakarta	D-1
	Antik Suprihanti	
103	Spatial Marketing System: An Alternative to More Effective Distribution System of Fresh Horticultural Product from Highland Area in West Papua Origin	D-8
	Fitryanti Pakiding, F.H. Listyorini, Arif Faisal	
104	Institutional Analysis of Marketing, Profit Margin of Banana Chips in West Tulang Bawang, Lampung	D-19
	Robet Asnawi	
105	Correlation of Economic Social Farmer with Application of Shallot Integrated Pest Management	D-25
	Achmad Faqih	
106	Fresh-Cut Vegetables, Times Efficiency and Vegetables Business Prospect	D-36
	Rr. Leslie Retno Angeningsih	
107	Behavior Of Consumer Fruit In Traditional Market And Modern Market In Jember District ...	D-44
	Evita Soliha Hani and Nyra Dewi Sartika	
108	The Study of Consumer's Preference and Behavior of Banana Chips in Bandar Lampung	D-54
	Fibra Nurainy, Zulferiyenni, Wiriawan Sada Melindra	
109	Marketing Analysis Of Red Dragon Fruit (<i>Hylocereus costaricensis</i>) In Pekanbaru, Riau Province	D-62
	Yeni Kusumawaty, Ermy Tety, Tengku Harunur Rasyid, and Zainal Abidin	
110	The Demand for Carrot in SMEP Market in Bandar Lampung: A Non Linear Homoge- neous Degree Zero in Prices and Income Approach	D-69
	Johannis Damiri	

✓ 111	Basic Causes Of Horticultural Farmer Poverty (Cabbage And Chilli) In Gisting District Of Tanggamus Regency	D-72
	Dame Trully Gultom, Tubagus Hasanuddin, Rio Prayitno and Teguh Endaryanto	
112	Food Security Status of Horticulture Farmers in Highland Region of the Manokwari District	D-75
	Nouke L. Mawikere, Fitriyanti Pakiding, Mudjirahayu	
113	Risk Analysis of Farm Chillies and Tomatoes Applying Monoculture and Polyculture Cropping Pattern in West Lampung District.....	D-83
	R. Hanung Ismono	
114	Coffee Commodities Market integration in Lampung province Tanggamus	D-90
	I Wayan Suparta, Husaini	
115	Mobile APPLICATION: Land ResourceS Information System for Horticulture Practices	D-101
	Purnomo Edi Sasongko	
116	Development Factors of Homegardens and Plantations in Buffer Zone of Way Kambas National Park	D-106
	M.D. Wicaksono	
117	Water Balance Analysis Based on Effective Rainfall at Ponoragan Sub River Basin Area Kutai Kartanegara Regency	D-112
	Beriny Mochtar Effendi Ariefin	
118	Water Balance Analysis Based on Normally Rainfall at Tenggara Seberang District Kutai Kartanegara Regency	D-117
	Setyo Budiharto	
119	Water Balanced Analysis to Growing Season at Karangmumus River Basin Area-East Kalimantan.....	D-122
	Akas Piningan Sujalu	
120	Design of The Hydram Pump Model to Support Irrigation of Farming Land in Province of Lampung.....	D-128
	Jorfri B. Sinaga	
121	Strategy for Strengthening Post-Harvest Handling to Improve the Competitiveness of Indonesian Horticultural Products	D-136
	Sutrisno, E. Darmawati, Sugiyono, Ismi M. Edris	
122	Potential of Floating Horticulture System on Swampland in South Sumatra	D-142
	Siti Masreah Bernas	
123	Community Aspirations In Fruit Crop Development Featured In Bojonegoro.....	D-147
	Indra Tjahaja Amir	
124	Factors That Influence The Farmer Opportunity in Selling Its Product to Modern Market	D-156
	Johannis Damiri and Irham Lihan	
125	The Development of Instant Ginger Business Strategies (Case Study in Sari Jahe Inyong, A Small Industry in Bandar Lampung)	D-160
	Wisnu Satyajaya, Adrina Yustitia and Fanni Desiyanto	

APPENDIX

List of Supported Institutions	App-1
List of Committees	App-2
List of Presenters	App-4

BASIC CAUSES OF HORTICULTURAL FARMER POVERTY (CABBAGE AND CHILLI) IN GISTING DISTRICT OF TANGGAMUS REGENCY

Dame Trully Gultom, Tubagus Hasanuddin, Rio Prayitno and Teguh Endaryanto
Lecturers in Agribusiness Department of Agriculture Faculty of Lampung University
e-mail : bungdarwin@yahoo.com

ABSTRACT

Poverty issue in Indonesia is one of fundamental problems in conducting development in Indonesia. Government's efforts are uniformed in alleviating poverty based on certain models that are less successful in alleviating poverty. Therefore, there needs a review on poor people data that would be a guide line to design programs and to reevaluate conducted programs. This research purposes to: 1) find out level horticultural farmer's poverty, 2) identify basic causes of horticultural farmer poverty, and 3) identify economic behavior pattern of horticultural farmer in dealing with poverty.

The research location was determined purposively in horticultural production center in Gisting district of Tanggamus regency in Lampung province during January – November 2009. The respondents were families of poor horticultural farmers that are located in the horticultural production center. Respondents and its number were determined by using *snow ball sampling* to the level of "redundancy". Deep interview and *focus group discussing* (FGD) were in collecting data. Data were analyzed using Miles and Huberman qualitative data analysis and SWOT analysis.

The results show that 1) horticultural farmer's poverty level is in poor and very poor level, 2) the basic causes of the poverty are the narrow field possession, the market institutions are ruled by parties outside of farmers, capital limit, habitual actions, dependency to brokers, low human resources, and consumptive life style of farmers, 3) the farmer economic behavior in dealing with poverty is conducting job diversification and reciprocity pattern with other society member.

Keywords: poverty, horticultural farmer

INTRODUCTION

Poverty issue in Indonesia is one of fundamental problems in conducting development. This results in developments that are unable to function maximally to improve people welfare (Sumodiningrat, 2003).

Despite of numerous programs for poverty alleviations, number of poor people in Indonesia, however, is relatively high. In 2006, the percentage of poor people in Indonesia increased to 17.75% compared with 3 years before, and the biggest increase was located in villages as much as 21.81%. This shows that poverty alleviation programs had not been succeeded to overcome poverty problems, including in Lampung Province.

Based on data collected in 2007, number of poor families is 785.000 families in Lampung Province. If a family contains of four people, then poor people in Lampung Province sum to 3.14 million people. The number is relatively high as 45% villages (765 villages) in Lampung are classified as poor villages. Based on the number, Lampung Statistical Bureau calls Lampung as the second poorest province in West Indonesia after Nagroe Aceh Darussalam. This is very ironical as Lampung is located near center of power in Indonesia and located at the gate of Sumatera Island that Lampung should have been fast developed province in all sectors, including its people welfare.

Based on conducted study, it seems that the failure of Lampung is caused by some factors. Firstly, Lampung government does not have complete poor people data so that the government is unable to have grand design for poverty alleviation based on characters of each region. Secondly, there is no grand design for continuing and integrated poverty alleviation programs, and finally, there is a need of bureaucracy reforms.

Government efforts in making uniformed poverty alleviation programs based on certain models were merely to be potentially having bigger failures in reaching their objectives. Therefore,

there needs a study to review poor people data that would be a guideline to design programs and to reevaluate previous programs.

The poverty phenomena can be found in farmer societies in Indonesia. However, the specific socio cultures are different among Indonesian farmer societies that the study should concerns with those differences. There should by some multidimensional considerations to accompany a comprehensive empowerment model formulation for poor farmer societies and need some complex thinking. Poverty should not be seen as a stereotype or uniformity, because every region has its specific and different problems. So that farmer society's poverty alleviating needs to find out factors causing poverty as materials in designing empowerment models that are suitable for their farming business patterns.

This research purposes to: 1) find out levels of horticultural farmer poverty, 2) to identify basic causes of poverty in horticultural farmers, 3) to identify horticultural farmer's economical behavioral patterns in dealing with poverty.

MATERIALS AND METHOD

The research location was selected purposively in horticultural production center in Gisting District of Tanggamus Regency in Lampung Province. The research was conducted from January until November 2009. The respondents were poor horticultural farmer families. The respondent numbers was determined with using *snow ball* sampling technique in "redundancy" level. The research used participation observation method and used deep interview and *focus group discussion* (FGD) in collecting data. The data analysis was conducted with using Miles and Huberman qualitative data analysis (Sugiono, 2005) and SWOT analysis.

RESULT AND DISCUSSION

Natural potential in horticultural center of the research location is classified as good because the soil is fertile, and the climate allows the development of horticultural plants. Besides, the availability of transportation and agricultural market is also good potentials. Those aspects are not obstacles in horticultural development in the years to come.

Related with factors of causing farmer's poverty, it seems that the poverty is caused by factors of structural and cultural of the society. The bond between farmers and agricultural product broker in conducting agricultural business from land processing until agricultural product marketing are factors that cause farmers not to have bargaining position in selling agricultural products. Beside selling their agricultural products to those brokers, farmers should also act to be "price taker" in selling their agricultural products. That is the way in which in one side the broker existence is to help farmers giving loans where farmers would able to pay at crop harvesting season. However, on the other sides farmers do not have freedom to select markets for their products.

The market structures tend to be ruled by some brokers and other outside parties that cause price levels go beyond farmer's expectation. This results in farmer's low income and it lowers farmer's ability to less saving money. That is why the existence of farmer groups in the research location is less helping farmers, because when farmers need loan for maintaining crop plants, the fastest way is to borrow some money to the brokers. One of the ways to improve farmers competing ability is to build a common market managed by farmer groups or clusters of farmer groups.

The market managed by farmer groups would be necessary for farmers to reach proper price levels. Besides, the capital loan of farming business needs to provide to reduce the farmer's dependency to the brokers. This is important because the cost of horticultural plant business is high and the risk of plant disease able to fail the harvest is also relatively high. Therefore, to improve farming business income and alleviate farmers from poverty, there should be availability in capital,

market for the product, and improvement of knowledge and skill in farming business; because farmers has just inherited habits from their parents in farming horticultural plants so far.

Based on research, the horticultural farmer human resources is relatively low, because their level of educations are mostly elementary school, and they also have consumptive life styles that make them difficult to go out from poverty. Besides, the habitual actions such as "punjungan" and "cleaning village" are another financial burden in their society life.

Viewed from aspect of subsistence safety and scldarity of society, the activities such as "punjungan" and "cleaning village" could be a social insurance to overcome disturbance of farmer subsistence (Scott, 1983). These habitual actions that are developed in society's life are representations of "reciprocity pattern" in farmer society. However, because the field selection owned by farmer is relatively narrow, this results in low productions so that the social obligations the farmer should bear may burden their financil condition. Therefore, Wolf's (1981) argument stating that the life of farmer is very dependent with surpluses from farming products can be seen at the research location.

Considering the research's results, efforts of horticultural farmer empowering should be conducted from several aspects: the knowledge and skill improvements in horticultural farming business, loan capital providing for farming business, market institutions providing that are ruled by farmer, price policy that benefits farmers, farmer assistance to manage farming business, reducing social obligation burdens, and changes of farmer's consumptive life behavior. This is because the most dominant causes of farmer's poverty are structural and cultural aspects in their society.

CONCLUSION

The research results show that 1) horticultural farmer's poverty level is in poor and very poor level, 2) the basic causes of the poverty are the narrow field possession, the market instiitutions are ruled by parties outside of farmers, capital limit, habitual actions, dependency to brokers, low human resources, and consumptive life style of farmers, 3) the farmer economic behavior in dealing with poverty is conducting job diversification and reciprocity pattern with other society member, 4) the economic and funding institution is still ruled by outside parties while the farmer social institution has not functioned maximally, 5) model of farmer empowerment by improving knowledge, attitude, and skill of farmers, giving ease in capital availability, forming marketing institution determined by government, giving assistance, and changing horticultural farmer's life style.

REFERENCES

- BPS. 2006. *Tingkat Kemiskinan di Indonesia*. Berita Resmi Statistik No 47/IX/September 2006.
- Scott, James, 1983. *Moral Ekonomi Petani*. Publisher: LP3ES. Jakarta.
- Sugiono, 2005. *Memahami Penelitian Kualitatif*. CV Alfabeta. Bandung. 234 hlm
- Sumodiningrat, G. 2003. *Penanggulangan Kemiskinan dan Pemberdayaan Masyarakat Dalam Era Otonomi Daerah*. Makalah Disampaikan pada Rakerda Penanggulangan Kemiskinan di Ambon. Maluku, tanggal 5-6 September 2003.
- Wolf, Eric, 1981. *Petani. Tinjauan Antropologi*. Publisher: Rajawali. Jakarta.