J. ISSAAS Vol. 14, No 1:1-8 (2008)

TROPICAL FRUIT CULTIVATION AS A SUCCESSFUL BUSINESS VENTURE IN THAILAND

Lop Phavaphutanon

Department of Horticulture, Faculty of Agriculture at Kamphaeng Saen,
Kasetsart University, Kamphaeng Saen, Nakhon Pathom 73140, Thailand
E-mail: agrlpv@ku.ac.th

(Received: December 28, 2007; Accepted: April 24, 2008)

ABSTRACT

Situated in Southeast Asia between the latitude of 5° to 20° N, Thailand has climatic conditions and geography that are suitable for fruit crops. An estimated 1,000 varieties of wild and cultivated tropical and subtropical fruits are found under various systems including natural growth in the forests, cultivated growth in home gardens and commercial plantations. More than 100 varieties are commercially cultivated for local uses and export. Of these, mango has the largest production areas of more than 300,000 hectares throughout the country followed by longan, durian, pineapple, citrus, rambutan, mangosteen, lychee, banana and others. Most tropical fruits are consumed domestically and approximately 5% are exported. In the world market, Thailand is the largest exporter of canned pineapple, longan, durian and mangosteen. Tropical fruit cultivation is considered a successful business in Thailand and the production areas have been expanded gradually. Good Agricultural Practice (GAP) guideline has been developed by the Department of Agriculture to ensure production safety, environmental safety, productivity, quality and production sustainability of major fruit crops. For export market, fruit production, harvesting and postharvest handling must strictly follow the protocol under a close monitor by an export company and government agency to meet the international standard. In addition to the conventional marketing systems where many middlemen are involved and growers have the lowest power in the supply chain, contract farming has an important role in marketing and currently enhances the success of Thai tropical fruit business. Standard tropical fruit products including fruit juice, concentrate, puree, canned fruits, oven-dried, freeze-dried and different forms of preservation are on high demand for both domestic and international. New products such as prepared fruits (ready to eat) in a nice package has a bright future as a niche that fits well with the current lifestyle of consumers. Free trade agreement (FTA) with China and a more open international trade policy of the United States increase the export value of Thai tropical fruits but at the same time a significant increase in apples and pears from China in domestic markets following FTA has a considerable impact on the Thai fruit industry. A better marketing system and improvement of orchard management to reduce production cost are of importance to secure the success of the Thai tropical fruit business.

Key words: cultivation technologies, fruit cultivars, fruit products, international trade, marketing

J. ISSAAS Vol. 14, No 1:9-20 (2008)

CHALLENGES AND OPPORTUNITIES FOR AGRICULTURAL PRODUCTS UNDER THE CONTEXT OF INTERNATIONAL INTEGRATION: A CASE STUDY FOR SAFE VEGETABLES IN VIETNAM

Tran Huu Cuong

Hanoi Agricultural University, Vietnam
trancuong@hau1.edu.vn

(Received: January 22, 2008; Accepted: June 2, 2008)

ABSTRACT

The current status of Vietnamese safe vegetables was evaluated based on different data including secondary and primary data and measures are proposed regarding technical, technological, economical, institutional and organizational aspects under the context of recent free trade agreements and market liberalization, where there is increasing competition for national and international markets. Domestic demand for vegetables by consumers has increased in terms of quantitative growth, quality and safety, especially in the urban centers of Vietnam. The formal programs of safe vegetable were introduced in Vietnam in 1995 to solve problems concerning production and marketing for safe vegetables. However, at present safe vegetables provide only a maximum of approximately 30% of the urban markets.

Key words: liberalization, marketing system, cooperative, Hanoi

J. ISSAAS Vol. 14, No 1: 21-24 (2008)

CONVERTING AGRICULTURE PARTICULARLY BANANA COMMODITY, INTO A SUCCESSFUL BUSINESS VENTURE IN MALAYSIA

Dato' Dr Zainuddin Wazir

Executive Chairman, Synergy Farm (M) Sdn. Bhd.
14000 Bukit Mertajam, Pulau Pinang, Malaysia
Tel: 604-229 6607; Fax: 604-2290607: Email: zawazir.synergyfarm@yahoo.com

Agriculture remains an important sector of Malaysia's economy beside manufacturing and services. On Ninth Malaysia Plan (RMK-9), this sector focuses to increase its value added to the economy. New approach such as large scale commercial farming, extensive use of modern technology and involving farming entrepreneur will be implemented to boost our agricultural sector. By taking advantage of the tropical climate, politic stability and seldom experiences natural calamities, banana business can be a good business to venture into as there are huge potentials for fresh and by-product for local and international markets. The potential downstream activities are not limited to the food industry alone but also in the manufacturing industry. The best way to start venturing into this promising banana business is through Synergy Farm Franchise Farming Program as it offers a complete package from consultation, transfer technology, training and marketing for agro-entrepreneur. Funding facilities are in place and support from state governments and Ministry of Agriculture in providing land for the program. All we need now is a dedicated genuine agro-entrepreneur to join and venture into this business and most importantly support from the government and its related bodies in realizing a vision to commercialize banana commodity in Malaysia.

J. ISSAAS Vol. 14, No 1:25-32 (2008)

STATUS AND AGRIBUSINESS POTENTIALS OF ORGANIC AGRICULTURE IN THE PHILIPPINES

Rogelio D. Colting and Darlyn D. Tagarino

Benguet State University
La Trinidad, Benguet

(Received: January 28, 2008; Accepted: April 10, 2008)

ABSTRACT

Organic agriculture has traditionally been practiced as a way of life by the indigenous people in the Philippines. With the massive introduction of agrochemicals and inorganic fertilizers in the 1950's, many farmers made use of them extensively until ultimately chemical-based farming became widespread in the country. In the 1990's a shift towards organic farming has become visible. This has been perceived to be due to an emergence of a growing number of health conscious consumers in the food market. Consequently, the area devoted to organic agriculture and organic practitioners in the Philippines have significantly increased. A national survey in 2007 on the number of organic practitioners, kind of organic products produced, and the area (hectares) devoted to organic agriculture showed a remarkable increase in all parameters compared to a survey in 2004. It can be noted also that concerted efforts to address the issues raised in organic agriculture particularly on human resource development, technology generation, organic production and organic processing are being addressed by stakeholders from both non-government organizations (NGO's) and Government Organizations (GO's) including some universities.

In terms of its agribusiness potentials, the organic agriculture industry in the Philippines has tremendous potential for growth considering the proven assurance of higher farm income than conventional agriculture (chemical-based farming), strong policy support from the government, increasing segment of the Philippine population shifting to a more healthy lifestyle, and increasing awareness on the irreversible ill-effects of chemical-based agriculture on the environment

J. ISSAAS Vol. 14, No 1:33-45 (2008)

SUSTAINABLE WATER MANAGEMENT IN THE RURAL LANDSCAPE OF CIANJUR WATERSHED, CIANJUR DISTRICT, WEST JAVA, INDONESIA

Kaswanto[1], Hadi Susilo Arifin[1], Aris Munandar[1] and Kenji Iiyama[2]

[1]Bogor Agricultural University
[2]Japan International Research Center for Agricultural Sciences

(Received: August 5, 2005 ; Accepted: June 27, 2007)

ABSTRACT

Water management in the rural landscape of Cianjur Watershed was evaluated during the dry season. Five villages located in the upper stream area (Galudra Dua Hamlet), the middle stream area (Burangkeng and Gasol Satu Hamlet), and the lower stream area (Sayang and Cibakung Hamlet) were studied. A survey method was used in order to find out water quality and quantity, and its management. Water resources from ponds, wells, rivers, paddy fields and springs were analyzed chemically and physically. Water qualities changed significantly, showing a decrease along the Cianjur River and accumulation in the down stream area. Water utilization in the rural landscape indicated optimal improvement of human activity and agricultural production through changes in land use. Disturbance in land use were predicted as related to water quality, and urban land use affected rural areas negatively. Examination of pond characteristics were a best estimate for the entire watershed area. The results on the water cycle in the *pekarangan* was elucidated to find out the management, its availability and its role in the village's ecosystem.

Key words: *pekarangan*, water quality.

J. ISSAAS Vol. 14, No 1:46 -59 (2008)

SURVEY OF APHID INFESTATION AND VIRAL INFECTION OF POTATOES IN SYRIA

Azusa Fujiie [1], Abdul Mohsen Said Omar [2], Ahmed Bahij Sawas [2], Abbas Abbas [2], Mohammad Abdul Hadi [2], Emad Alden Sawas [2], Ayman Barakat [2], Maen Naser [2], Shigeru Takahashi [3]

[1] Japan International Cooperation Agency (JICA) Syria Office and Attachment to General Organization for Seed Multiplication (GOSM) in Syria
JICA: P.O.BOX 10012 Damascus, Syria
GOSM: P.O.BOX 5857 Aleppo, Syria
E-mail: fwgh1797@mb.infoweb.ne.jp
[2] General Organization for Seed Multiplication in Syria
[3] Utsunomiya University in Japan

(Received: February 12, 2008; Accepted: April 16, 2008)

ABSTRACT

The occurrence of aphids and viral diseases on potatoes in Syria was examined. Aphids were trapped in a yellow pan with water at the Tissue Culture Laboratory of the General Organization for Seed Multiplication (GOSM), Al Eeramoun, from June, 2006 to June, 2007. The number of winged aphids trapped increased slightly in autumn and markedly in spring. On autumn-cultivated potato plants in the Aleppo and Hama areas, aphid densities increased from mid-October to early November, just before the harvest, in 2006. On spring-cultivated potatoes, aphid densities decreased from late May, although the densities were higher in mid-April, just after sprouting, in 2007. Virus-infected plants were common among both autumn- and spring-cultivated potatoes in fields not contracted to GOSM, but were few in contracted fields in which virus-free plants grew. Aphid species belonging to 13 genera, including *Myzus persicae*, *Aphis gossypii*, *A. fabae*, *A. craccivora*, *Schizaphis borealis* and *Lipaphis erysimi*, were identified among aphid samples collected from potato plants. In addition, *Rhopalosiphum rufiabdominalis* was found on rhizomes and roots of potato plants in GOSM greenhouses in 2007. The major aphids as potato pests were considered to be *M. persicae* and *A. gossypii*, and *A. fabae* to a lesser extent. To our knowledge, this is the first report of *A. fabae* and *R. rufiabdominalis* infesting potatoes in Syria.

Key words: *Myzus persicae, Aphis gossypii, Aphis fabae,* yellow pan, *Potato Virus Y*

J. ISSAAS Vol. 14, No 1:60 -66 (2008)

SPIDERS IN PADDY FIELDS IN NORTHERN THAILAND

Samaporn Saengyot[1] and Banpot Napompeth[2]

[1] NBCRC Upper Northern Regional Center, Mae Jo University
Chiang Mai 50290, Thailand
[2] National Biological Control Research Center (NBCRC), Kasetsart University
Bangkok 10900, Thailand

(Received: October 27, 2007; Accepted: April 14, 2008)

ABSTRACT

A survey of spiders in the paddy fields was carried out from October 2005 to August 2006 at Tambon Mae Faek Mai (approx.19° N, 99° E; 320 meters MSL), Amphoe San Sai, Changwat Chiang Mai, in the northern highland area of Thailand. The spider fauna thus found were *Argiope catenulata* (Doleschall) and *A. inustus* (L. Koch) (Araneidae); *Tetragnatha javana* (Thorell), *T. mandibulata* Walckenaer and, *T. maxillosa* Thorell (Tetragnathidae); *Runcinia acuminata* (Thorell), *Thomisus labefactus* Karsch and *Thomisus* sp. (Thomisidae); *Oxyopes javanus* Thorell and *O. lineatipes* (L. Koch) (Oxyopidae); *Pardosa* (*Lycosa*) *pseudoannulata* (Boesenberg and Strand) (Lycosidae); and *Atypina* (= *Calitrichia*) *formosana* (Oi) (Linyphiidae). All of these were generalist predators of the rice stem borers and rice leaf folder, the dominant lepidopterous pests of rice, and other less important and occasional pests such as rice cutworm, rice caseworm, rice skipper, green rice leafhoppers and rice brown planthopper. The population densities of these insect pests of rice were all below the economic threshold levels and not causing any observable or significant damage during the investigation. These results indicated that the spiders present in the paddy fields served as effective biological control agents.

Key words: generalist predators, biological control agents, rice pests

J. ISSAAS Vol. 14, No 1:67 -79 (2008)

CURRENT VULNERABILITY OF THE RICE PRODUCTION SECTOR TO RAINFALL VARIABILITY AND EXTREMES IN THE PROVINCE OF CAMARINES SUR, PHILIPPINES

Michael A. Cuesta[1] and Roberto F. Rañola, Jr.[2]

[1]Research Associate, Ateneo Social Science Research Center, Ateneo de Naga University
[2]Professor, Department of Agricultural Economics, College of Economics and Management, University of the Philippines, Los Baños, Philippines

(Received: September 11, 2007; Accepted: April 3, 2008)

ABSTRACT

This paper discusses the results of a study on vulnerability of the rice production sector to rainfall variability in the Province of Camarines Sur. Results of the study show that the province has become more exposed to climate hazards caused by the increase in rainfall variability during the period 1976-2005. It has become more vulnerable to drought, which reduced annual rice production output by nearly 20 percent. The analysis of risk of crop loss associated with drought also shows that this has been increasing over time, costing nearly P1.2 billion during the period 1996-2005. These results suggest that the increase in rainfall variability puts the province at risk of food insufficiency if no mitigating or adaptation measures are instituted.

Key words: risk, drought, climate change

J. ISSAAS Vol. 14, No 1:80 -91 (2008)

UTILIZATION OF DAIRY CATTLE MANURE-RICE HULL COMPOST USING MICROBIAL INOCULATION

Bayani M. Espiritu, Lovely B. Willauer and Mannix S. Pedro

National Institute of Molecular Biology and Biotechnology (BIOTECH)
, University of the Philippines Los Baños (UPLB), College, Laguna, Philippines

(Received: September 26, 2007; Accepted: April 10, 2008)

ABSTRACT

The effects of seeding nitrogen-fixing bacterial inoculants into cattle manure-rice hull mixtures in composting were evaluated, particularly in terms of nitrogen gain in the substrate and level of survival of the bacteria. The effects of such compost on wetland rice as test crop was also determined. One hundred-gram weights of dry and screened dairy cattle manure-rice hull mixture (70/30, w/w) were placed in nylon bags and composted for 20 days in actual compost piles of the same materials. Burk medium (without glucose) was added to the substrates. Inoculation treatments of nitrogen-fixing bacteria *Azotobacter* sp. or cellulolytic fungi of *Trichoderma* sp. were imposed on the materials. Carbon loss (66.7 mg C/g vs. control's 59.7) was high and nitrogen gain (14.50 mg N/g vs. control's 7.02) was highest in those treated with nitrogen-fixing bacteria. The survival of the inoculant organisms was highest in those correspondingly treated compost. *Azotobacter* counts in treated compost were 4.22 x 10^6 cfu/g compost, significantly higher than the control with 1.13 x 10^6 cfu/g compost. The inoculated compost produced in this study was tested in wetland rice, and was found to significantly improve the tiller number, panicle number, and grain yield of the test crop at levels similar to those supplied with chemical fertilizers.

Key words: compost, cattle manure-rice hull mixture, nitrogen-fixing bacteria, *Azotobacter* sp., cellulolytic fungi, *Trichoderma* sp.

J. ISSAAS Vol. 14, No 1:92 -100 (2008)

PROTECTION OF HOT PEPPER AGAINST MULTIPLE INFECTION OF VIRUSES BY UTILIZING ROOT COLONIZING BACTERIA

Tri Asmira Damayanti and Trias Katerina

Department of Plant Protection, Faculty of Agriculture,
Bogor Agricultural University, Jl. Kamper, Darmaga Bogor 16680,
E-mail : triadys@yahoo.com

(Received: January 21, 2008; Accepted: April 17, 2008)

ABSTRACT

Mixed virus infection is a common phenomena in nature. It results in severe disease symptoms and yield loss. We utilized seven selected root colonizing bacteria (rhizobacteria) isolated from the hot pepper rhizosphere to improve the effectiveness of virus management. The efficacy of those rhizobacteria in inducing plant growth and systemic resistance (ISR) on hot pepper against multiple infection of *Tobacco mosaic virus* (TMV*)*, and *Chili veinal mottle virus* (ChiVMV) was evaluated in greenhouse trials. The rhizobacteria was applied as seed treatment and soil drench. All bacteria treated plants showed better growth character, milder symptom expressions than control and increased peroxidase enzyme activities and ethylene but these depended on the species. It affected slightly the accumulation of TMV, however it suppressed the ChiVMV accumulation. Based on the morphological characters and full length nucleotide sequences analysis of 16S r-RNA, *Bacillus cereus* (I-35) and *Stenotrophomonas sp* (II-10) were the potential isolates as PGPR.

Key words : multiple viral infection, rhizobacteria, *Bacillus cereus*, *Stenotrophomonas* sp, ISR

J. ISSAAS Vol. 14, No 1:101 -110 (2008)

TOXICITY OF *CYMBOPOGON CITRATUS* STAPF. (POACEAE) AGAINST THE DIAMONDBACK MOTH, *PLUTELLA XYLOSTELLA* L. (LEPIDOPTERA: YPONOMEUTIDAE) LARVAE

Dadang[1] and Kanju Ohsawa[2]

[1] Department of Plant Protection, Faculty of Agriculture, Bogor University of Agriculture
[2] Department of Bio-Science, Faculty of Applied Bio-Science, Tokyo University of Agriculture

(Received: January 10, 2008; Accepted: May 26, 2008)

ABSTRACT

Cymbopogon citratus Stapf. has been reported to possess antifungal, nematocidal, acaricidal, and insecticidal activities. Active compounds that possess insecticidal activity to the diamondback moth, *Plutella xylostella* L. (Lepidoptera: Yponomeutidae) larvae have not yet been identified. Therefore, this study was conducted to evaluate the efficacy of the extract of *C. citratus* aerial parts and to elucidate the structure of the active compound causing larval mortality to *P. xylostella*. Bioassay-guided fractionation led to the isolation of the active compound as an essential oil, 3,7-dimethyl-2,6,-octadienal or citral. The LD_{50} value of this compound was 7.7 µg/insect by topical application.

Key words: active compound, botanical insecticide, citral, insecticidal activity