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# PROCEEDINGS of the International Seminar

The Council of Rector of Indonesian State University (CRISU)  
and The Council of University President of Thailand (CUPT)

**"EXPLORING RESEARCH POTENTIALS"**

Editors:

A. Muslim (Indonesia); Siti Herlinda (Indonesia); Nurly Gofar (Malaysia);  
Melanie Boursnell (Australia); K.T. Tantrakarnapa (Thailand);  
Judhiastuty Februhartanty (Indonesia); Misnaniarti (Indonesia);  
Najmah (Indonesia); Suci Destriatania (Indonesia)

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SRIWIJAYA UNIVERSITY  
PALEMBANG, INDONESIA, 20-22 OCTOBER 2011

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Research Potentials, Palembang, 20-22 October 2011

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Sriwijaya University:

Jl. Palembang-Prabumulih Km. 32, Ogan Ilir, Indralaya, Indonesia  
Telephone +62711580069, 580169, 580645, facsimile: +62711580664

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## FOREWORD

Dear special guests:

Minister for National Education, Ambassadors of Thailand for Indonesia, Ambassadors of Indonesia for Thailand, all delegates from The Council of Rector of Indonesian State University (CRISU) and The Council of University President of Thailand (CUPT), Government of South Sumatra and Palembang City, and all The 6<sup>th</sup> CRISU-CUPT Conference, International Seminar and Exhibition participants

On behalf of the Sriwijaya University as Host University, I would like to extend my warmest welcome to all of the participant of The 6<sup>th</sup> CRISU-CUPT Conference, International Seminar and Exhibition, held on 20<sup>th</sup>-22<sup>nd</sup> October 2011 at Sriwijaya University Palembang with the join theme "Exploring Research Potentials".

There will be many challenges and opportunities in higher education in the Asean Community in the next decade. This is, therefore, considerable significant will arise from the The 6<sup>th</sup> CRISU-CUPT Conference, International Seminar and Exhibition. The previous five CRISU-CUPT conferences have been significantly deepening the relationships and come up with very fruitfull discussion in various subjects of collaboration and cooperation, for example, global warming, global mobility, academic interaction and cross-fertilization. The 5th conference was held in Chiang Mai, Thailand on July 7<sup>th</sup>-9<sup>th</sup> 2010 and appointed Sriwijaya University as a host for the 6th conference.

The 6<sup>th</sup> CRISU-CUPT conference will include many agenda, with not only include the meeting of the President Forum, the Dean Forum, and the Student Forum, but also will include international Seminar and Exhibition. This conference, therefore, might come up with more fruitfull conclusion and deepest commitment among participants.

With regard to considerable conference agenda, we greatly appreciate any support and sponshorship derived from any govermental as well as private institutions for the success of the conference. Great appreciation is also handed to organizing committe of the conference for any voluntarily effort that bring to the succes of the conference.

The 6<sup>th</sup> CRISU-CUPT Conference, International Seminar and Exhibition is being attended by about 600 participants. I hope you enjoy the beauty of Palembang City as one of the oldest city in Indonesia which is 1318 years old, established during the glory of the vast Sriwijaya Kingdom. The city also have variety of interesting culture and places.

Palembang, October 2011  
Chairperson,



Prof. Dr. Badia Perizade, M.B.A.  
Rector of Sriwijaya University

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## Plant Clinic: Driving Farmer Profit Partners

Chandra Irsan, Suwandi, A. Muslim, Siti Herlinda

Department of Plant Pests and Diseases, Faculty of Agriculture, Sriwijaya University

### Abstraks

Plant Clinic was established and given to the community as a supporting component of agricultural development. Farmers often face constraints in addressing pests and plant diseases in farming practices that they do. In general, the constraints that they settle upon the experiences and results vary widely. Through IbKK (Insentive bagi kreativitas kampus) activity, we find that there are still many farmers who had difficulty in determining the status of organisms that interfere with their plants as pests or diseases. The difficulty in determining the bully farmers as a pest or disease that can affect their success in the exercise control over their plant pests or deseases. Therefore, farmers need a friend in solving problems they face. The presence of plant clinic is expected to be a partner in the practice of crop farmers that they are doing and can improve the quantity and quality of the harvest. Furthermore, farmers can prosper. It is expected that the government shoud to adopt the concept of plant clinics and set it up in every district as concern for the government to assist farmers and support the PPL in carrying out its duties and functions as an agricultural extension in Indonesia. Lecturers in universities are expected to devote their knowledge to society through education, research, and community service. In this article discussed what has been done, the implementation constraints that occur in society and the solutions are expected to cope.

Keywords: Clinical plants, organic fertilizers, biological agents

### Preliminary

Research were conducted lecturers have been very much. Development of further research focused on applied research that can be applied. Therefore, the development of research results should be used by the public. Department of Palnt Pests and Diseases, Faculty of Agriculture, Sriwijaya Univiersitas have some research that continues to be developed and to ultimately produce a product that can be given to the public. To support this plan, Department of Pest and Plant Disease made unit was named Plant Clinic HPT-FP-UNSRI. Plant Clinic has become an important part in doing community service.

Farmers is the figure of individuals working in agriculture. In life and daily activities, they are always associated with the plant. During the run the profession as a farmer a lot of things or experience they found. The findings provide a lesson that is known by the term experience. Of course the farmers have a lot of experience. Experience of the farmers were closely related to knowledge and their persistence, environmental conditions and habits or learning they had received directly from the elders in the family.

The experience of the farmer-specific, typical for the region or specific place, a more specific experience it only for certain plants. Experience is the

best part in life that can be used as a basis for development in the future. So based on that experience, they built an activity that is productive and beneficial to themselves and their families, far more beneficial to the surrounding community and country in general.

In this article described the activities undertaken by the plant clinic HPT-FP-UNSRI. The experience gained during the run clinics and plant the recommended step forward for the advancement of agriculture in Indonesia. Plant Clinic HPT-FP-UNSRI invite farmers to become partners in increasing their income and help to preserve the environment.

### **Cooperation Partners for Farmers and Government**

Farmers are used to perform activities of pre-planting until the harvest. But in the course of planting and that farmers often face problems. Therefore, the Faculty of Agriculture opened PLANT CLINIC, which aims to help farmers cope with his problems when planting. The problem often faced by farmers in crop farming among other pests, diseases and weeds, soil fertility and plant growth is retarded, stunted, the plants wilt and die. In addition, Plant Clinic HPT-FP-UNSRI also will provide consulting assistance related to agribusiness. Plant Clinic HPT-FP-UNSRI invite farmers to become partners in getting security guarantees and benefits in agriculture. In order for this goal is achieved then the farmer is given the widest opportunity to access the Plant Clinic HPT-FP-UNSRI. Access is intended for information, guidance, direction on what action they should do for their plants to grow well and produce yields as expected. It required the support of other parties.

Hopefully the plan to support agricultural development in Indonesia and South Sumatra in particular can be realized. Farmers with Crop Clinic guidance and support of Bank BRI is expected to increase crop production. Increasing the quantity and quality of agricultural products that will further impact on improving the welfare of Indonesian people are farmers were working in agriculture.

### **Plant Clinic Profile**

Plant Clinic Department of Plant Pests and Diseases, Faculty of Agriculture UNSRI was launched in 1988, the time limited activities in the campus environment, serving a student consultation, occasionally into the field to monitor and assist farmers who are facing disruption plant pests organisms. Year 2004 Clinic plant reactivated and in 2007 introduced into Higher Education as part of the Department of Plant Pests and Diseases of communicating the results of the research staff of teachers to society. Plant Clinic in 2009 developed into a larger section with wider target. Plant Clinic The wide range of services expected to help farmers cope with problems or interference with the plants they cultivated.

Formula or produks which has produced the Department of Plant pests and diseases, Faculty of Agriculture based on research results are as follows:

Bio-fitalik, compost extract disease control and plant growth boosters and starter composting. Containing a complete nutrient and microorganisms that are facultative anaerobes. Acting through the mechanism of plant resistance

pengimbasan and acceleration of wound recovery. Effectively suppress a variety of diseases in annual and seasonal crops. (The production capacity of 12,000 liters per year)

Bio-para, the formulation of *Trichoderma* mikoparasit controlling white root fungus (JAP). Consisting of a combination of four strains of *Trichoderma virens* excel in a variety of genetically stable and can control the inoculum JAP JAP on wood in the soil. (Production Capacity 20,000 kg per year)

Biogrow Protector, the formulation of fungal antagonist hyper growing plants. Is a superior formulation of *Trichoderma* strains hyper growing plants, act as a solvent phosphate and control of soil borne pathogens with a mechanism of antibiosis and Parasitation. (Production capacity is 750 kg per year)

Bioverin, formulation of *Beauveria bassiana*, insect pest control and plant growth boosters. Consisting of an infective strain superior to the population of insect pests in South Sumatra. (Production Capacity 500 liters per year).

Bionema, formulations, plant pest control nematodes. Consisting of superior strains that are adaptive in the agroecosystem of South Sumatra. (Production Capacity of 6,000 ampoules per year)

Vita-neem, neem extract formulation in the extract of compost to control insect vectors of viruses and viral disease resistance. (Production Capacity 1,000 liters per year)

Formula is ready developed with a larger scale. When this formula already established their production and use in society is the Bio-fitalik, Bio-para, Bioverin and Bionema. Another formula that there is no demand in farming communities and is currently in the process of recognition in society.

### **Clinical activity of plant**

Plant Clinic HPT-FP-UNSRI do some activities. Activities started from a product, give it to people, help solve the problem of pests or diseases that disrupt their plant communities, monitor the use of products of plant clinics in the community.

Produce liquid organic fertilizer "Bio-Fitalik". Formula liquid organic fertilizer which is obtained through various research, then implemented by producing the product. Products made in test its efficacy through a variety of experiments. Experiments conducted in farmers' fields and observed their development. Farmers who do the testing required to report the effect of liquid organic fertilizer on growth and crop production.

Increase the biological agents that are categorized as fungi and entomopathogenic nematodes. Entomopathogenic produced given the name "Bio-verin and Bionema .. Bio-verin contain active fungus *Beauveria bassiana* and Bionema *Stereonema* contain active nematodes. Biopesticide produced in the form of liquid formula. Products made granted to farmers for their land tested in the affected group of insect pests. Farmers were asked to report the results of the application of bio-pesticide to control pest organisms.

### **Examination of plant pests.**

Farmers are facing problems at the plant disturbance, are welcome to bring the problem to the plant clinic HPT-FP-UNSRI. Examples of plants brought by the farmers examined in the laboratory, then look for the name of the causative organism. Then providing a way to control their alternatives that they can be done under its control.

Conduct counseling to the community through instusi government and farmer groups. Government agency that has a counseling program and the program that there is material relating to the protection of agricultural crops or organic, then the plant clinic staff will be pematerinya and deliver extension materials. Farmer groups or communities who face the problem of interference in plants can send a letter to the LPM / Dean of the Chancellor and forwarded to the Plant Clinic. Then plant clinic staff will visit communities and provide solutions to the problems they face at once the practice to overcome it. Provide guidance / direction to the farmers who have difficulties in plant cultivation. People who grow plants, then make efforts for the maintenance and fertilizing plants grow well and produce a satisfactory crop. If in the way they deal with obstacles, then told they are welcome to contact the plant clinic and ask for guidance / advice how to strive for plants to grow normally.

### **Results of clinical testing plant**

Products manufactured by the Plant Clinic-FP-UNSRI HPT have been studied and applied to the crops cultivated by the community. The results vary, there are good and some are ordinary. But the big sebahagian Plant Clinic product users average satisfying comment and enjoy using the products tested. This information indicates that HPT Plant Clinic-FP-UNSRI can provide a relatively good service to the community.

One thing that is done by a plant clinic HPT-FP-UNSRI is to help farmers solve peraalannya with products produced by the plant clinic HPT-FP-UNSRI. It is an advantage Plant Clinic HPT-FP-UNSRI. For farming communities whose territory or place of residence away from Unsri, The problem that they face treated with conventional solutions. They suggested using a pesticide that is in their territory in accordance with the recommendations provided by the Plant Clinic HPT-FP-UNSRI.

Plant Clinic also conducts monitoring of the recommendations given to farmers to ensure that what has been recommended and carried out correctly. Biofitalik clinic produced by plants have been tested on many plants. The result of the application give very satisfactory results. Application to plant crops that can increase vigor. The increase occurred because the plants grow healthier, more crops and plant life becomes shorter or otherwise harvest time becomes longer. The test results can be seen in the following table

Table. Some test results of Biofitalik on same plants cultivated by farmers

No.	Plant	Given Biofitalik	Benefit trial	Year
1	Coffee	Leaf more green	Improve yields	2003-2004
2	Pepper	Vigor increased	growth of new shoots appear normal in a healthier	2004
3	Orange	Plants recovering	healed and improve plant vigor	2004
4	Orange	More green leaves of ordinary	Growing Number of flowers and fruits increased about 20%	2010
5	Rubber	Bark recovered 3 months	Grows ordinary latex are produced	2007
6	Cabbage	are thicker, larger crop Leaves dull	and ordinary Improving crop weight and improve crop plants performa	2004
7	Cilli	Live to be long	Production increased 25-30%	2004-2009
8	Caisin	thicker leaves	larger crop leaves a lot of common leaf spot affected Increasing the amount of harvest and crops can be harvested more quickly in	2004
9	Baby Corn	13-14 cob	Production increased around 30%	2008
10	Pady	Production 8.006 kg	Production increased around 20%	2008
11	Mung bean	Harvest 15 times	Production increased around 100%	2007
12	Soybean	Pods 180-219	Production increased around 25%	2008

### One problem faced Plant Clinic HPT-FP-UNSRI

Experience invites farmers to do the things they have not done very difficult. In general, farmers will respond to an innovation if it had seen evidence that innovation is good and managed to increase their crop production. Response was only limited response, they are still hesitant to start applying it to innovation in farming systems that they do, on the grounds that an experiment that has been in setting the conditions and circumstances. It requires a comprehensive solution.

The next step is to conduct repeated experiments on the same land with the same treatment. The results remain good and satisfying, not unlike the results of previous experiments. Lush plant growth, increased production and production costs can be reduced. Farmers who saw the evidence has become very enthusiastic. But what has happened. Beyond expectations they have not

moved to implement or take advantage of innovations that have proved good. Based on these phenomena, we study the question of what is actually happening in society. Monitoring results we can know that the causes are numerous, including:

1. Their confidence is low, they do not dare to try something new out of their habits. It was strongly influenced by their educational level. The level of education will affect the independence and courage to try something new.
2. Government policies often provide assistance to farmers become a bad precedent to make them independent. They often wait for government assistance programs.
3. They are not motivated to do something new because the issue price. Market. Guarantee the price became a very influencing their persistence in trying.
4. Security guarantees, is also a constraint in the welfare of farmers.

### **Plant Clinic HPT-FP-UNSRI Orientation in the future**

Plant Clinic is focus to develop Departemen Plant Pests and Diseases Faculty of Agriculture UNSRI remain as partners to increase farmers' income. It is expected that farmers with various problems they face will be helped by the Plant Clinic HPT-FP-UNSRI. To them are welcome to contact HPT Plant Clinic-FP-UNSRI through direct visits to his office in the Department of Plant Pests and Diseases Faculty of Agriculture, Sriwijaya University, or via the telephone office, manager, or via email.

Plant Clinic closer to the community. Efforts are made to support it is to establish branches Plant Clinic HPT-FP-UNSRI in districts in southern Sumatra. Plants that form a branch clinic will be led by alumni of the Faculty of Agriculture Unsri who are committed to serve for the betterment of agriculture which is oriented to the welfare of farmers.

Plant Clinic HPT-FP-UNSRI can be a partner for Government Agencies, Private, and Banking. Implementation activities isntansi government and private institutions to the community to take Plant Clinic HPT-FP-UNSRI as partners. Community empowerment programs of state-owned companies, enterprises or the other can involve HPT Plant Clinic-FP-UNSRI as partners. Banks are giving credits in agriculture can take Plant Clinic HPT-FP-UNSRI as partners in guiding farmers' bank loan recipients so that they can run the cultivation of their crops, so they can return the bank loan.

### **Resume**

Plant Clinic-FP-UNSRI HPT is a unit formed to jaxtapose Sriwijaya University Faculty of Agriculture, particularly with the community around him. Plant Clinic HPT-FP-UNSRI expected to be a component Tridarma colleges that benefits can be felt directly by the people (farmers). Academic community to develop the potential for them to devote their knowledge of science to the public. Plant Clinic HPT-FP-UNSRI also expected to become partners Government Office and the private sector in improving the accelerated development of agriculture.



