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INTERNATIONAL  
PEPPER COMMUNITY



MINISTRY OF AGRICULTURE,  
REPUBLIC OF INDONESIA

PROCEEDINGS OF  
**THE INTERNATIONAL WORKSHOP  
ON BLACK PEPPER DISEASES**

3 - 5 December 1991

Bandar Lampung - Indonesia



ANAN DIGITAL  
KALTENG  
5 Palangka Raya

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AGENCY FOR AGRICULTURAL RESEARCH AND DEVELOPMENT  
RESEARCH INSTITUTE FOR SPICE AND MEDICINAL CROPS  
BOGOR - INDONESIA

1992

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## CONCLUDING REMARKS

During this workshop, the following activities were carried out and discussed:

1. Opening address of honourable Governor of Lampung
2. Address by the Executive Director IPC.
3. Keynote address of His Excellency Minister of Agriculture
4. Keynote paper on Current Status and Future Outlook of Pepper Economy, by Dr. H.P. Smit.
5. Four Country Papers
6. Three papers on *Phytophthora* foot rot disease
7. Four papers on yellow/slow decline disease
8. Three papers on stunted disease
9. Gladly, three topics (other than diseases)
  - 9.1. Research progress on important insect pests of black pepper in Indonesia.
  - 9.2. An overview of pepper cultivation at private sector in Thailand.
  - 9.3. An overview of pepper cultivation in the Philippines.
10. Visit to Research Institution and Country side:
  - 10.1. Natar Sub Balitro, at Natar
  - 10.2. Black pepper smallholdings in central Lampung
  - 10.3. Elephant Training Center at Way Kambas

The following conclusions were drawn from the above materials.

1. This workshop has been fruitful in reviewing research development and has made recommendations for future programmes of managing diseases of black pepper. The recommendations are :
  - (1) *Phytophthora* Diseases (by *Phytophthora capsici*)
    - Management guidance
    - Standardized experimental design
    - Integrated control

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- (2) Slow Decline Disease
- The causal agents are almost certain: biotic agents and abiotic factors, except other-wise stated under specific environmental conditions and agricultural practices.
  - In depth investigation are needed to standardize effective disease management practices, with emphasis on integrated approach (resistant varieties and biocontrol agents).
- (3) Disease of Unknown Etiology
- More studies are needed on (1) symptomatology (2) etiology and (3) epidemiology leading to better approach for the disease management.
2. During the workshop various integrated control measures for (1) Phytophthora foot rot (2) Slow decline and (3) Stunted disease were recommended by various scientists from India, Indonesia and Malaysia. However, farmers in these countries are not receptive and thus the control measures are not fully adopted. The workshop felt that the following approaches should be taken up by the authorities of these countries to transfer the technologies to the farmers to reduce the disease incidence :
- a. Hand books on disease control in black pepper in simple language of each country should be produced for the benefit of farmers, planters and students.
  - b. Extension workers should be trained to understand the control measures and in turn, they should be sent to train the farmers to tackle the disease problems.
  - c. Research scientists in the discipline should undergo exchange programmes to update the disease management in the member countries under IPC.
3. Workshop considers the TCDC programmes among the pepper growing countries is of strategic importance in implementing technological recommendations, through to users/ planters in an integrated approach in Plant protection, plant production, marketing and post harvest technology. The IPC need to continue as a coordinating agency in this.
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4. The programmes of exchanged visit of researchers, publications and information etc. among the member countries should be actively pursued by the IPC.
  5. It is realized that IPC has the responsibility to produce technological publications. IPC may therefore initiate action to publish articles on black pepper contributed by the scientists from member countries.
  6. It was strongly suggested that in the future IPC meetings, wherever it may be held, besides policy makers, research scientists such as Plant Phathologists, Entomologists, Pepper Agronomist, Pepper Breeders and Pepper Botanists should be invited to attend and to assist in decision making.
  7. Based on the analysis of past data on supply and demand the future of pepper commodities, in terms of world price and demand, are promising. However, more studies are needed on data availability on: (1) area and supply, (2) price, (3) stock, (4) trade and (5) demand in each of the producing countries.
  8. All materials presented, discussed and recommended in this workshop will be fully documented in the coming Proceedings.

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## EDITORIAL

All materials of this Proceedings are believed to be urgently needed by and applicable to the level of planters of black pepper in all concerned countries. The country members of IPC together with some invited non member countries have represented their people and come to an excellent similar perceptions during the seminar on many important aspects concerning the position of black pepper producing countries in sustaining it as worlds commodities to the benefits of producers and consumers in the world.

Concluding remarks described in this Proceedings are especially presented as mutual understanding and were agreed to be followed up by each country into practice with special efforts pursued by IPC. The aims in the whole concluding idea are to emphasize the important position of black pepper in future potential trading commodities. Strong recommendations were given to strengthen IPC existance for both producer and consumer sites in the world.

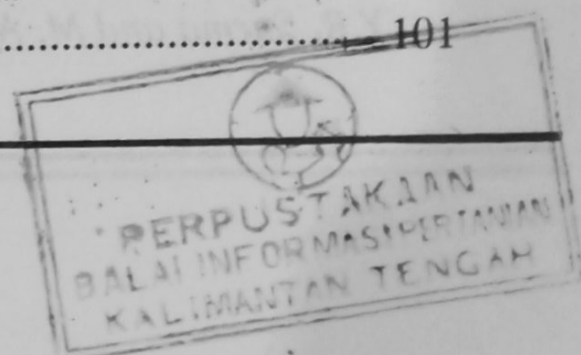
Hopes are due to all producer countries of black pepper to take great deal on our agreeable common interests to be practical tools in the future development of black pepper industries to achieve our high welfare with the beautiful black pepper. Mutual commitments of the seminar are the most wise pledge to be fulfilled by all concerned persons, bodies and institutions.

This Proceedings contains unlimited promises and hopes in its a warm world to the world we live in peacefully.

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This is all my expectations and I wish you all a great success and may God bless you.

Thank you for your attention, and

*Wassalamu'alaikum warohmatullahi wabarokatuh.*

**POEDJONO PRANYOTO**  
***Governor of Lampung***  
***Province***

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## ADDRESS OF EXECUTIVE DIRECTOR OF IPC

His Excellency Director General of Estate  
Dr. Rachmat Soebiapradja  
The Honourable Deputy Governor of Lampung Province  
Mr. Man Hassan  
The Director of Central Research and Development of Industrial Crops,  
Dr. Darwis S.N.  
The Chairman of the Organizing Committee,  
Mr. Suhirman Muljodihardjo  
Distinguished Representatives from International Organizations and Embassy  
Distinguished Participants  
Ladies and Gentlemen

On behalf of the International Pepper Community I would like to express my greatest thanks and gratitude to the Government of the Republic of Indonesia for the generosity in hosting the International Workshop on the progress and Development in the control of pepper diseases in the producing countries held here at Lampung, Indonesia and for providing the excellent host facilities through the Ministry of Agriculture, Indonesia.

This workshop is jointly organized by the International Pepper Community, the Ministry of Agriculture of Indonesia and the District Government of Lampung.

I would also like to take this opportunity to thank the Honourable Director General of Estate, Dr. Rachmat Soebiapradja for having spared his precious time to be with us this morning on behalf of the Honourable Minister of Agriculture to deliver his opening address and officially open the workshop. We feel greatly honoured and highly aspired and motivated to have you with us and your presence is a sufficient proof of your great interest to the global development of

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the pepper industry, particularly in the prevention and control of pepper diseases to stabilize production and improve farmer's income. I would also like to thank the Honourable Minister of Agriculture through you for hosting such a sumptuous welcoming dinner last night to the participants of the workshop.

Ladies and Gentlemen,

The workshop that we are conducting here in Lampung is a follow up to the first Workshop of the same nature that was held in Goa, India from 27 - 29 October 1988. While the first Workshop was focussed on the "Joint Research for the Control of Black Pepper Diseases", the second Workshop will focus on the "Progress and Development in the Control of Pepper Diseases"

Some 120 participants comprising of leading scientists, policy makers, implementors, extension personnels, academicians, exporters and producers from India, Malaysia, Thailand, Philippines and Indonesia are taking part in the workshop. I would like to congratulate the host country, Indonesia, for sending the largest number of participants. Let this be the shining example that need be followed and maintained.

I am glad to inform that we also have with us here this morning representatives from FAO, Free University Amsterdam and the Royal Thai Embassy Jakarta. To them I extend my thanks for the strong support given to the Workshop and to the International Pepper Community, and I urged them as well as the other International Organizations to continue with their support to the IPC.

Ladies and Gentlemen,

Some of the diseases in pepper such as foot rot disease/wilt disease, diseases of unknown etiology and slow decline/yellow disease have been consistently causing damages and losses in tremendous amount of pepper production in some pepper areas:

In Brazil, Fusarium diseases has caused considerable production losses. Once infected, black pepper plants decline and die. More than 1.2 million plants

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were destroyed since the appearance of the disease, which corresponds to a loss of about US\$ 18 million basing the actual price of USS 5000/ton at that time. The epidemic disease reduced the productive life of the plantation from 20 to 6 - 8 years. The productivity fell from 3.0 to 1.5 kg/plant.

As for India some 20 - 30% of vine death has been recorded up to 1977 in Cannanore and Calicut districts of Kerala due to Phytophthora disease. In 1984 and 1986 the result of crop loss survey in Calicut and Cannanore has shown that foot rot incidence is 3.7% and 9.4% respectively causing total vine death of about 1.2 million vines amounting to an annual total loss of 1,000 metric tonnes of black pepper in Calicut and Cannanore districts of Kerala which corresponds to US\$ 5 million.

In the case of Indonesia the Phytophthora foot rot and slow decline diseases infecting the pepper plantations have caused an enormous economic loss of about Rp. 10 billion (US\$ 5.4 million) every year. Aproximately 40,000 ha of pepper plantation in Lampung, Bangka and West Kalimantan were infected by Phytophthora foot rot disease, of which 2,000 ha or 5% had died.

As for Malaysia, diseases and pests are the most serious problems affecting production and productivity of pepper. Total loss on a farm due to the foot rot disease is not uncommon. The annual crop loss due to that disease alone was estimated at between 5 - 10%. Other diseases also cause considerable damage to the pepper crop in Malaysia.

Ladies and Gentlemen,

The objective of having this workshop is to bring together the research scientists from the pepper producing countries so that we can :

- (a) Discuss, review and exchange information on the progress and development of research achieved so far on the prevention and control of pepper diseases in the producing countries, and,
- (b) Formulate plan for joint research that can serve as an international programme for the control certain important diseases as identified by the Workshop.

The goal will be to develop a simple, acceptable and most economical

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package of technology that can effectively control pepper diseases and ensure that such technological package be transferred to farmers through systematic extension services that will motivate farmers adoption of the technology package, thus giving them better economic return.

Ladies and Gentlemen,

This workshop is implemented under the TCDC Programme. ESCAP has provided international air fares for four of the participating scientists to the Workshop. I take this opportunity to thank ESCAP for funding the international air fares.

I would like also to thank the various institutions, organizations, agencies and departements in the participating countries for funding their scientists to participate in the Workshop. By so doing, they have contributed a great deal to the success of the Workshop while at the same time benefited through the cross-fertilization of ideas in light of the experiences of the participants.

To the Honourable Governor of Lampung Province I would like to extend my thanks for the hospitality extended to the participants of the Workshop and for hosting the coming farewell dinner.

Dr. Hidde P. Smit, Divisional Chief Economic Research, Economic and Social Institute, Free University Amsterdam will be contributing the first paper this morning which is the keynote paper entitled "Current Status and Future Outlook of Pepper Economy". I would like to express my thanks to Dr. Smit who has responded positively to the request of the Workshop Steering Committee and was able to readjust his heavy schedule to support and be with us this morning to present his keynote paper.

I would also like to record my thanks to Dr. Pasril Wahid of Balitro Bogor and his staff for all the technical preparation made, to the writers of country papers and technical papers, to the Steering Committee and Organizing Committee of the Workshop, to the various departements and organizations that will be hosting lunches and dinners throughout the Workshop, to the participants themselves and last but not least to all those who have contributed in one way or another to the success of the Workshop.

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To conclude, I wish all the participants a fruitful discussion and hope that you will have a nice and a memorable stay here in the Pepper Province of Lampung.

Thank you.

**MOHAMED ISMAIL**  
*Executive Director of International Pepper  
Community*

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## KEYNOTE ADDRESS

Distinguished Guests  
Distinguished Participants  
Ladies and Gentlemen

Allow me, first, to extend the highest appreciation of the Government of Indonesia for choosing Indonesia as an honourable host for this very important Workshop and to welcome you all to Indonesia. I was informed that this Workshop is being attended not only by the distinguished participants of member countries but also by delegates from Asian countries who are interested and concerned on the same problems faced by pepper growing countries. When you return home, convey our appreciation to your Government that your active participations make this workshop more fruitful and successful.

Ladies and Gentlemen,

To many countries, pepper has had a very long history, almost as long as the civilization in the world, because of its high economic value and its importance to people welfare in the world. There is no doubt that in the future pepper would still be very important commodity, not only for the farmers and government of the producing countries but also for all people in the world who consume this spice. In Indonesia pepper is widely utilized and improved for many purposes in order to help achieve their role and added values for local farmers and traders.

In line with the improvement of pepper productivity, there is also a growing concern on constraints disturbing pepper industries on the whole. To mention a few, there are problems that have always been difficult to overcome such as

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diseases and pests in every place where pepper is cultivated, especially due to the fact that peppers is mostly cultivated by smallholders. On the other hand world trade requires higher standard at the cost of producer. For example, the quality of exported pepper grains are not only based on the appearance but also free from possible microorganism contaminations especially those which produce toxic materials.

What I would like to emphasize is, that at present the position of pepper producing countries should be strengthened in the world market, notably to pamper the high fluctuation of price. So that, the benefit to the farmers could be guaranteed through enumerated price. At the same time research on the diversification of pepper products should also be enhanced in order to boost pepper demand and improve its economic values. Such conditions could only be fulfilled if all countries involved in producing pepper commodities stand together and cooperate as one strong bond.

I understand that there have been a lot of technology achieved by scientists in each member country, however for certain reasons, many of the packages still need to be improved, so that farmers could apply them with their limited knowledge and financial capacity. This workshop, I presume, would appreciate such important issues and try to analyze any possible improvement to overcome disease constraints and which could be extended to pest problems also. This is the most strategic occasion for all scientists in discussing and exchanging experiences on these matters. All efforts on cooperation that have been started with exchange of varieties, TCDC Technical Cooperation and Workshop among developing countries should be made beneficial to each respective country, because the problems faced by each country seem to be similar and persistent.

Ladies and Gentlemen,

There are at least three very destructive diseases of pepper in the world namely the foot rot or pepper wilt, the yellows disease and the stunted growth. In Indonesia their causal agents have been identified as very dangerous pathogens either acting alone or in combination to cause damages and losses to pepper industry. All diseases seem to be continuously active and increasing every year. Great losses are still experienced by farmers despite intensive



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research on these diseases and extension applied to farmers, the findings are still insufficient for solving the problems. This explains the quality and quantity of causal agents of each disease such as *Phytophthora capsici* of foot rot, *Radopholus semilis*, *Meloidogyne incognita*, *Fusarium so-lani*, unfavourable soil conditions of yellows disease, and the micoplasm like organism (MLO) of stunted growth disease.

Continuous researches done by many scientists have reached a perception as to what extent the constraints could affect the whole systems of pepper industry. Therefore, I once again would like to reiterate my sincere hopes on certain areas to enable the farmers to reduce even eliminate the disease problems as follows:

- (1) This Workshop is strategic to evaluate problems of pepper cultivation, diseases in particular.
- (2) A great deal of success has been achieved by researchers in many countries, however more efforts should be made in achieving a better control of all diseases.
- (3) Diseases have been the biggest issues in pepper cultivation of smallholdings, therefore more research in this field should be considered and encouraged.
- (4) Programmes both in research and exchange of technology and experience of all countries should be made reasonably applicable.
- (5) This workshop should be aware on the importance of all aspects concerning the future programmes of disease controls in each country through reasonable linkages.
- (6) Insect pests which are also very destructive in some pepper growing countries should also be considered as part of the future programmes of joint research.

Notwithstanding, may I draw the attention of the International Pepper Community to be more persistent in its capacity to ensure the world that pepper growers in pepper growing countries deserve enumerated price and profit to sustain their crops for the world to enjoy. Lastly, I would like to wish all participants every success in your deliberation as well as enjoyment throughout your stay here, including your field visit to the country side where pepper cultivation and diseases co-exist.

Finally I would like to thank the IPC, the Provincial Government of Lampung and everyone that make this Workshop possible.

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Ladies and Gentlemen,

Now I have the pleasure in declaring the "Workshop on the Progress and Development in the Control of Pepper Diseases in the Producing Countries" officially open.

Thank you.

WARDOJO  
*Indonesian Minister of  
Agriculture*

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**ADDRESS BY THE CHAIRMAN OF STEERING COMMITTEE  
ON CLOSING CEREMONY**

Director General of Estate  
Provincial Representatives  
Executive Director of IPC  
Distinguished Participants, Guests,  
Ladies and Gentlemen

The Workshop on pepper diseases was attended by about 120 participants coming from India, Malaysia, the Philippines, Thailand and Indonesia. Some topics on pepper diseases and other reports were discussed by grouping them into some technical sessions. The whole programme of the workshop covers technical session of Keynote paper; Country papers of Indonesia, Malaysia and India; technical sessions on Phytophthora foot root disease; slow decline disease, stunted growth disease, and the last technical sessions discussed other topics.

After intensive and fruitful discussions during our three day Workshop, I am pleased to state that this important Workshop has produced very important results in achieving the efforts on solving problems arising from diseases and insect pests of black pepper in all pepper producing countries.

The country papers suggest the importance of combating all efforts to help farmers/planters in cultivating pepper as important cash for many families.

Mutual understanding and active participation in doing (1) joint research, (2) exchanged experience between scientists, institutions, etc. under the coordination of IPC are urgently needed as most strategic approach in helping farmers from their problems, especially those caused by diseases and insect pests, and marketing.

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All concluding remarks yielded in this Workshop need follow ups and implementations as soon as possible in each black pepper cultivating country.

Let us together do hope, that the written theme of this workshop "By this workshop on pepper diseases we increase the ability of managing diseases and reducing crop losses", be fulfilled.

On behalf of the Committee members, I would like to express my sincere thanks to all of you in attending and collaborating this workshop. We apologize for any inconvenience during our meeting in this Workshop.

Finally I would like to say good bye and to see you again in the next Workshop. Have a nice and safe trip in going back home !.

Thank you.

DR. DARWIS S.N.  
*Director of Central Research and Development  
of Industrial Crops*

## STATEMENT OF EXECUTIVE DIRECTOR OF IPC

The International Workshop on Pepper Disease held at Bandar Lampung Indonesia from 3 - 5 December 1991 has been extremely useful to the International Pepper Community and its member countries. It has managed to pool together the leading research scientists from the pepper producing countries to discuss on the progress and development achieved on the prevention and control of pepper diseases. It has also facilitated the scientists in the formulation of plan of action for field implementation of the methods of prevention and control of pepper diseases in the producing countries.

To derive maximum benefit each country should develop an extension manual of pepper giving simple by step guideline to Extension Workers and Farmers in adopting the recommended package of technology.