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Golden Jubilee Celebration (1959 - 2009)
Faculty of Agriculture Padjadjaran University



Program

International Conference

AGRICULTURE AT THE CROSSROADS

November 25-26, 2009

Ruang Ruminansia Universitas Padjadjaran
Dipatiareg, Bandung, Indonesia



GEDUNG BELAJAR
FAKULTAS PERTANIAN
UNIVERSITAS PADJADJARAN



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FAPERTA-UNPAD

LEMBAR PENGESAHAN

Judul : FARMER'S RESPONSE TO *Jatropha curcas* L.
DEVELOPMENT IN KETIBUNG DISTRICT,
LAMPUNG PROVINCE

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Jurusan : Sosial Ekonomi Pertanian / Agribisnis

Fakultas : Pertanian, Universitas Lampung

Publikasi : Seminar Program
International Conference on AGRICULTURE AT THE
CROSSROAD
November 25-26, 2009
Bale Rumawat, Universitas Padjadjaran
Jl. Dipatiukur 35 Bandung – Indonesia

Bandar Lampung, 4 Februari 2010

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FOREWORD FROM THE DEAN OF FACULTY OF AGRICULTURE PADJADJARAN UNIVERSITY

Faculty of Agriculture Padjadjaran University in its 50th years contribution has marked significant impact to the development of agricultural sciences in Indonesia, higher education in agriculture as well as to the national agricultural development.

Several lecturer staffs and alumni have received national awards, recognitions, and patents. Several alumni also have become high rank official at the Ministry Agriculture as well as at regional agricultural offices. The Faculty of Agriculture curriculum of sarjana (S1) degree study programs, agro technology and agribusiness, are now become the national reference for similar study programs.

We believe that in the future, the more complex and differs demand for agricultural products will require high quality seeds that produce all the intrinsic values that consumer and user want. Thus, we are determine to develop "the Seed Center" which will be expected to be also the main reference for seed re-production technology development in Indonesia in the near future.

This conference is marking one step further toward the realization of the above dream, where the internationally recognized experts on the subject gathered and share their expertise. We really appreciate our colleagues in the field of agricultural sciences who is willingly respond to our invitation and becoming invited speakers and key note speaker in the conference.

We highly appreciate the organizing committee for putting such an interesting and important program in celebrating the Faculty of Agriculture historical 50th anniversary.

The Dean of Faculty of Agriculture,

Prof. Yuyun Yuwariah AS

FOREWORD FROM THE RECTOR OF PADJADJARAN UNIVERSITY

First of all, on behalf of the university, i would like to welcome you all to the Padjadjaran University main campus in Bandung.

Agriculture has always been the key sector in Indonesian economy, since it is not only provides food for more than 200 million peoples but also become the main source of income of about 30 million farmers, mostly with limited land holding. The university has a long history of contribution to the national development, including in the agricultural sector since the green revolution era.

The Faculty of Agriculture was among the pioneer in the university in term of academic research and post graduate programs. It is our main goal now to improve our research quality in a pathway to become the world class research university. Thus, I felt that this conference is very crucial and have an important contribution to the overall university goal.

I am very pleased and congratulate the Faculty of Agriculture which celebrating its 50'th years anniversary and successfully organizing this very important and timely conference. I am very hopeful that this conference will spark a new frontier of knowledge in contribution to the Indonesian agricultural development.

To the speakers and participants of the conference, I would like to congratulate you all for the contribution to this important event, have a good and most fruitful conference.

The Rector,

Prof. Gandjar Kumia

II.12.
**FARMER'S RESPONSE TO *Jatropha curcas* L. DEVELOPMENT
IN KETIBUNG DISTRICT, LAMPUNG PROVINCE**

Tubagus Hasanuddin
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Jatropha curcas L. has a strategic position in fuel shortages since the oil content of *Jatropha Curcas* L. is relatively high and can be used as alternative fuels. In South Lampung, the development of *Jatropha* has been initiated but the development are less encouraging. The aims of this study were to determine: 1) The farmer's response to the development of *Jatropha* as an alternative biofuel, 2) The factors influenced on farmer's response to the development of *Jatropha* , 3) Farm Income of *Jatropha* production, and 4) The prospect of *Jatropha* development in farmer's communities in Ketibung district, South Lampung, Lampung Province. The research method was an observation participations and the data analyzed were descriptive. The results of this research showed that 1) The farmer's response to development of *Jatropha curcas*. L are positively if *Jatropha* farm can increase farmer's income, 2) The factors of production prices, product marketing, government policies, incentives, and farmers' social interactions affect the response of farmers in developing *Jatropha*, 3) Farm Income of *Jatropha* not yet feasible economically ($R/C < 1$) , and 4) prospects to the development of *Jatropha* is very good if the government gives great help in providing production facilities and support the marketing production with high prices (Rp.5000,00/kg)

Key words: *Jatropha curcas* L, prospects, farm income, the farmer's response

ABSTRACT

FARMER'S RESPONSE TO *Jatropha curcas* L. DEVELOPMENT IN KETIBUNG DISTRICT, LAMPUNG PROVINCE

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Jatropha curcas L. has a strategic position in fuel shortages. This is because the oil content of *Jatropha Curcas* L. has a high relative and can be used as alternative fuels. In South Lampung, Lampung Province, the development of *Jatropha curcas* has been initiated since 2005, but the development shows that are less encouraging. Therefore, farmer's response to the development of *Jatropha curcas* L is important to know..

This study aims to determine: 1) The farmer's response to the development of *Jatropha curcas* L. as an alternative biofuel, 2) The influence factors to farmer's response to the development of *Jatropha curcas*. L, 3) Farm Income *Jatropha curcas*. L, and 4) The prospect of *Jatropha curcas* L development in farmer's communities.

This research is done in Ketibung district, South Lampung, Lampung Province. The study was conducted from February-September 2009. The total of Respondents are 60 person. The research method is a observation participations and the data analyzed were descriptive.

The results of this research showed that 1) The farmer's response to development of *Jatropha curcas*. L are positively if *Jatropha curcas* L farm can increase farmer's income, 2) The factors of production prices, product marketing, government policies, incentives, and farmers' social interactions affect the response of farmers in developing *Jatropha curcas*.L, 3) Farm Income of *Jatropha curcas* L not yet feasible economically ($R/C < 1$), and 4) prospects to the development of *Jatropha curcas* L is very good if the government gives great help in providing production facilities and support the marketing production with high prices (Rp.5000,00/kg)

Keywords: *Jatropha curcas* L, prospects, farm income, the farmer's response .

INTRODUCTION

Background

National petroleum reserves is scarcity to the future. Until December 2005, the national petroleum reserves only 9 billion barrels but the level of petroleum consumption increased. The high consumption of petroleum looks from the high petroleum exploitation of Indonesia reached 500 million barrels of year. Thus mathematically (calc. 2005), Indonesian petroleum reserves only last for another 18 years (Swastika, 2005). To overcome the energy crisis, Indonesia is required to develop alternative energy. However, these alternative energy must have some characteristics such as competitive, not damage the environment, and sustainable. One source of energy have the criteria of competitive and sustainable made from plant material (*Biofuel*).

Indonesia is rich biological resources likely to produce biofuel. According to research the Agency for Assessment and Application of Technology (BPPT), Indonesia has 60 species of plants that have the potential to be alternative energy. One crop a potential alternative energy is *Jatropha curcas* L. According to Sumarsih (2007), *Jatropha* has the advantage to produce biofuel than other crops because of the properties he owned, among others contain oil quite high (30-50%). However, despite of the *jatropha* has several advantages, eventually spreading to area development will be determined by whether farmers would cultivate the *jatropha*. Therefore interesting to know how farmers respond to the development of *Jatropha curcas* L?

Research Objectives

The research objectives are to know: 1) The farmers response to the development of *Jatropha curcas* L, 2) the factors that affect to farmers response to development of *Jatropha Curcas*.L, 3) farm income *Jatropha Curcas*. L, and 4) the development prospects to area development *Jatropha Curcas*.L.

Benefits Research

The Research of result is expected to provide basic information for those interested in developing *Jatropha Curcas*. L. In addition, the results of this study is

also expected to be useful in the diffusion of innovation *Jatropha Curcas.L* to farmers society.

RESEARCH METHODS

This Research conducted in Katibung Sub-district, South Lampung, Lampung Province. The research was conducted from April-October 2009. The data was collected through interviews and Focus Group Discussion (FGD). Respondents were selected purposive and many as 60 people. The data were analyzed using *path analysis methods*

RESEARCH FINDINGS

Farmer response to an innovation has been influenced by various factors. One of the factors influencing the response is farmers characteristics. Based on the research that respondents have a low education level (SD), experience in a long time farm business (20 years), land owned are large, low household income, low education level, less cosmopolitan, and low participation in group activities.

Although the government's attention to the development of *Jatropha Curcas.L* increase, but the farmers response in Katibung less effort to the development *Jatropha Curcas.L*. The low farmers response to development *Jatropha Curcas.L* caused by no realization of the cost for maintenance *Jatropha* and marketing product difficult and low production price (in the 2005 year only Rp.500,00/kg, and in the 2003 was only Rp. 1000/kg). Thus, despite of the government's attention to development *Jatropha Curcas.L* increased, but farmers response are unhappy.

Advantage is relatively small from farm business *Jatropha Curcas.L* ($R/C < 1$) was also affected willingness extension officers to disseminate the *Jatropha Curcas.L*. In addition, the marketing agency that has not been available, the low price of production, and competition with the other farm business also affected to *Jatropha Curcas.L* area development. Therefore based on the facts that were found most farmers had a "business orientation" (semi-commercial).

From 2005-2008 year, diffusion of invasion *Jatropha Curcas.L* cultivation was increase but since 2009 seen decrease caused by the development of other

commodity market prices . The factors as advantage is relatively small, price product of low, and marketing agency not been available caused of "prestige" *Jatropha Curcas. L* decline. Thus Scott (1983) opinion who said that the farmers most attention "subsistence security " were to be found this research. As one example, to produce 1 liter of oil required *Jatropha Curcas. L* seed approximately 4-5 kg whereas to produce 1 liter of oil need the amount of labor very much, since from plucking fruit from the tree, drying, pressing, and so on. Therefore if the price product of *Jatropha Curcas.L* only 1000,00 - Rp. 1500,00/kg as this present moment, it is still far from the expectations of farmers. The farmers said that the price of *Jatropha Curcas.L* seeds Rp.5000,00/kg are enough. Details of the development of the planting area *Jatropha Curcas. L* in the Babatan village, Katibung district, South Lampung regency of the year 2005-2009 can be seen in Figure 1.

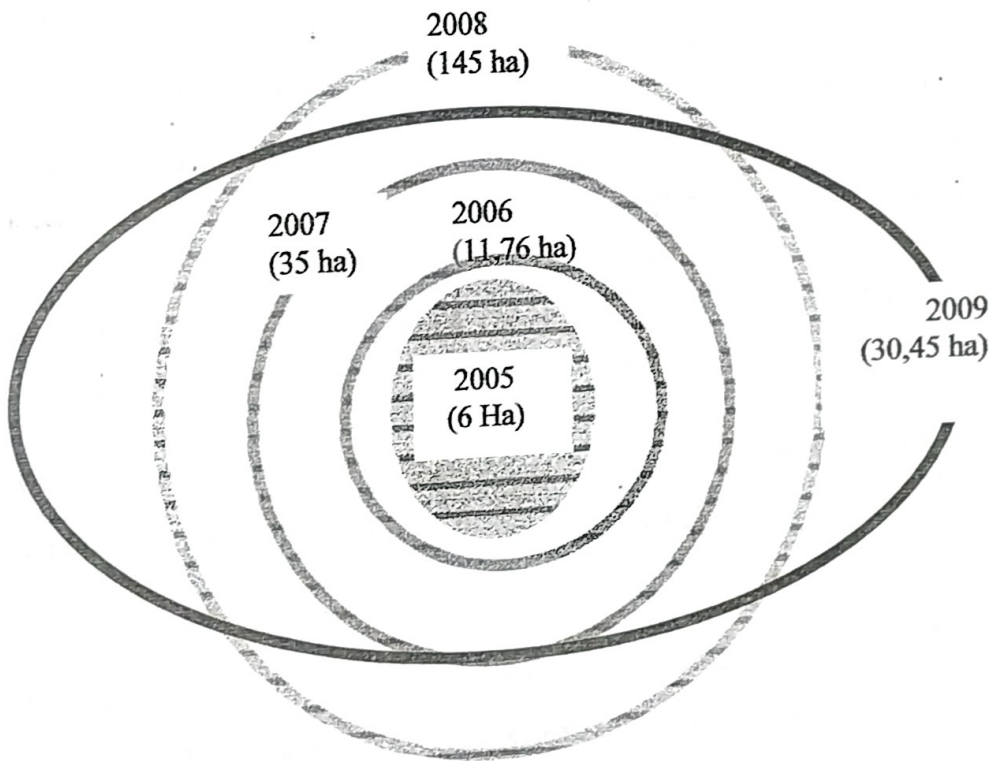


Figure 1. Development Area planting *Jatropha (Jatropha curcas. L)*

in the Babatan Village, Katibung, South Lampung

Base on the Figure 1 was that the amount of the total area *Jatropha Curcas.L* planting shows a decrease. This fact indicates that the farmers response to the development of *Jatropha Curcas .L* unhappy. The Farmers response are low influenced by many factors. The research result shown that the characteristics of innovation is more influential, but the characteristics of farmers, the social interaction between farmers, the comparative advantage innovations, marketing products, and government policies had influenced to farmers respond to *Jatropha Curcas.L*. area development. Thus in this case, the diffusion of innovation *Jatropha Curcas.L*, it seems must be considered the characteristics of innovation, the system of cultural values in the society, the characteristics of farmers, availability of institutional linkages and marketing of innovations introduced, and farmers' response to these innovations. However according to a study done has been that farmers response to *Jatropha Curcas.L* area development is correlations with the needs of farmers subsistence life.

Associated with the variables correlation studied seemed that the courage to take risks, sources of information, the innovation charateristics, and encouragement of local community most influence on the farmers response to *Jatropha Curcas.L* development.. Therefore, in order to develop the area should consider this variables. The influence of each variable to the farmers response *Jatropha Curcas. L* developing in Katibung District can be seen in the models listed below.

$$Y = 0,694 + 0,006 X_1 + 0,000 X_2 + 1,712 X_3^* + 0,729 X_4^* - 1,470 X_5 - 10,610 X_6^* + 7,594 X_7^* + 0,004 X_8 + 9,194 X_9^* + 0.071 X_{10} + 0,818 X_{11}^* + \epsilon$$

Note:

X_1 = Size of land

X_8 = farm business time

X_2 = Level of Household Income

X_9 = Encouragement of local communities

X_3 = The courage to take risks

X_{10} = Level farmers of cosmopolitness

X_4 = Participation in the group

X_{11} = extention agricultural activities

X_5 = activity for new ideas

Y = Diffusion of Inovation *Jatropha Curcas.L*

X_6 = Sources of information

* = Significant at the 95% confidence level

X_7 = The characteristics of innovation


Based on the above analysis it appears that the courage to take risks, farmers' participation in group activities, activities look for information and new ideas, sources of information, the characteristics of innovation, encouragement of local communities, and extension activities is very influential on the farmers response to *Jatropha Curcas. L* development. But if viewed from the aspect of regression coefficients (which means show these variables influence the amount of the diffusion of innovation) it appears that risk-taking variables from the farmers, the characteristics of innovation and encouragement of local community most influence to the farmers response to developing *Jatropha Curcas. L* farm business..

CONCLUSION

The research result showed that the courage to take risks, farmers' participation in group activities, activities look for information and new ideas, sources of information, the characteristics of innovation, encouragement of local communities, and extension activities is very influential on the farmers response to *Jatropha Curcas. L* development. Therefore, in order to develop the area *Jatropha Curcas.L* should be consider this variables.

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In recognition and appreciation of his/her participation as :

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Prof. Dr. Tualar Simarmata
Chair of Golden Jubilee Celebration



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