RESEARCH ARTICLE OPEN ACCESS

Information Systems of Extermination Plant Pests and Diseases for Agriculture Extension

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ABSTRACT

As an agrarian country in the tropics, premises have different types of crops and varieties that very much and spread across many islands. Mentoring done by agricultural extension workers to farmers in Indonesia are devoted only to the issue of cultivation. While the duty to educate pest and disease problems, the designated officer is alone Extension Plant Pests.

Often resulting in delays in handling problems of pests and plant diseases. It certainly will cause a delay in treatment, so the impact on the spread of pests and diseases as well as the vulnerability of success of treatment against pests and plant diseases as a result of delays in the presence of a plant pest extension.

Other problems besides that is, area farmer groups assisted the agents and coupled with limited facilities and access to a variety of Information about the handling of pests and plant diseases are being attacked in an area.

To help these problems, the need for a computer program that is able to be a bridge for agricultural extension in order to have a practical knowledge about handling the problem of pests and plant diseases.

The program will have to be able to provide various information about the handling of pests and plant diseases that occur on plants farmers

Keywords:- Bakorluh

I. INTRODUCTION

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To help these problems, the need for a computer program that is able to be a bridge for agricultural extension in order to have a practical knowledge about handling the problem of pests and plant diseases.

The program will have to be able to provide various information about the handling of pests and plant diseases that occur on plants farmers.

The resulting software will be delivered master freely to the government through a coordinating body extension (Bakorluh) Bengkulu Province as a pilot project of the program management information systems to control pests and plant diseases. While the use of the training program will be held following the schedule set by Bakorlah after receiving instructions from the provincial government. The general objective of this study was to achieve an increase in productivity of agriculture in each area farming groups get assistance from counselors who have been equipped with the knowledge of prevention of various pests and plant diseases. In other words, its relevance to the increase in household income after the farmers free of pests and plant diseases. So that the agricultural extension instructor can answer the various issues raised by farmers in terms of the symptoms caused by pests and diseases that attack the crop and countermeasures in accordance with the recommendations of experts through this program.

Based on the above facts, then that need attention later on is the level of completeness of the data and information relating to the issue of pests, diseases that attack the crop and at the same time various procedures for handling. Thus updating the data and the information was continuously indispensable for renewed (updatable) and delivered to farmers belonging to the groups of farmers.

II. MATERIAL AND METHODS

Information systems

Information is a collection of data that is processed into a form that is more useful and more meaningful for those who receive. Without the information, the system will not run smoothly and will eventually die, in other words, is the data source for the information. The information system is a system within an organization reconcile the needs of the processing of daily transactions that support the function of the organization's operations that are managerial in strategic activities of an organization to be able to provide to outside parties certain information necessary for decision-making and may also be information for all levels in such organizations whenever necessary. An information system is a collection of hardware and computer software and hardware man will cultivate and use. In addition the system can be defined following information:

A system created by humans which consists of components within the organization to achieve a goal that is present infornasi.

A set of organizational procedures when implemented will provide information for decision makers and or to control the organization.

Reconciling the needs of transaction processing, support the operation, managerial and strategic activities of an organization and provide certain outside parties with the necessary reports.

Plant Pests and Diseases

The pest is a plant cultivated vermin eg rice, wheat, potatoes, mangoes, apples and so on. While the disease is causing the plant to be sick, such as bacteria, fungi, viruses, lack or excess of water. While the pain is a condition deviating from normal. Having knowledge of pests and diseases has been held, further control of pests and diseases will provide very good impact on crops and productivity. While the action taken is in the form of biological by providing pest predators. (Pracaya, 2007).

Model designing a system reveals that there are several models that can be used, namely :

1). Waterfall Model (Waterfall), which is a model that describes the system design complete stages ranging from analysis and requirements definition, system design and software, implementation and unit testing, integration and system testing, operation and maintenance.

2). Evolutionary Development Model, which is a model which is based on the idea and initial diimplemetasi then offered to customers to be explored and commented upon. Then gradually revised in accordance with the wishes of the user.

3). Literature study, which searches a variety of information on plant pests and diseases that have been published by the experts and latest.

III. EXPERIMENTAL RESULT AND DISCUSSION

The results obtained in this study was the establishment of an information system program pest control and plant diseases. The display of the program after the run looks as follows :

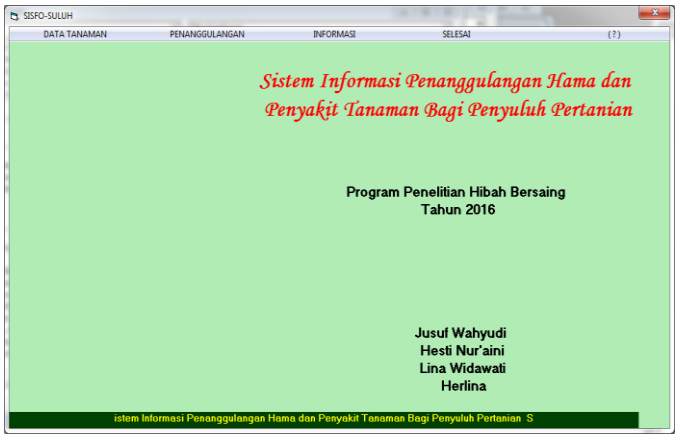

Figure 1: Main Program

Based on the display as figure 1 above, visible program has several menu options like Crops, Eradication, Information and Done. The following:

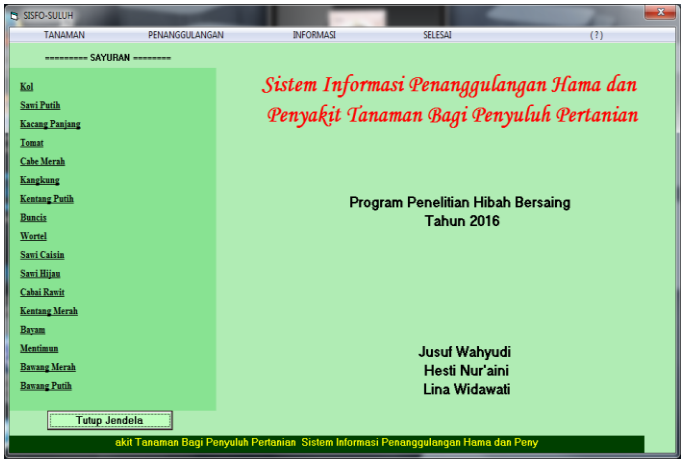

Figure 2: Submenu Crops - Horticulture - Vegetables

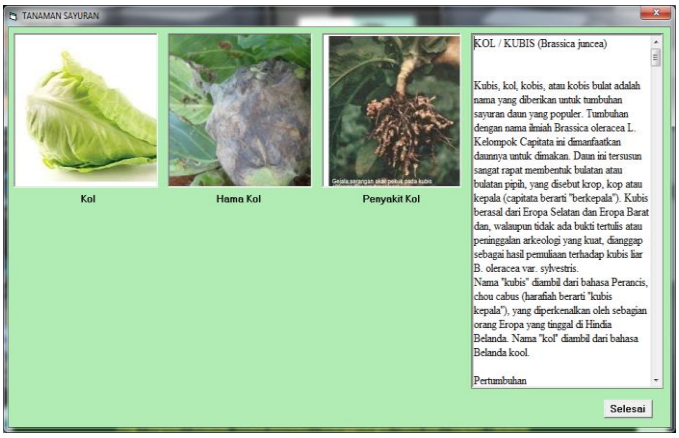

Figure 3: Example of Vegetable Cabbage with Pests, Diseases and short explanation

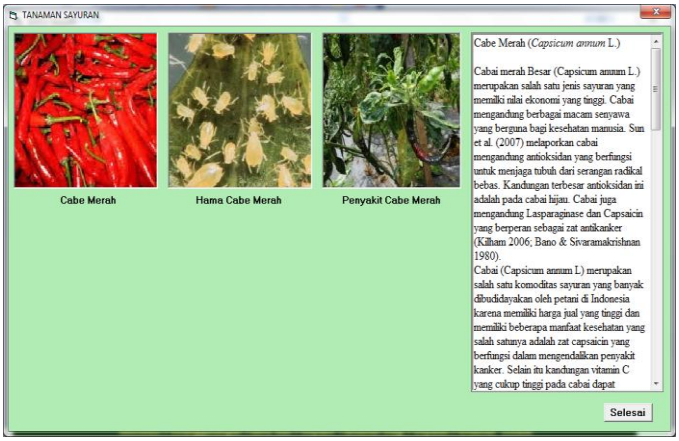

Figure 4: Example of the Red Chili Plant Pests, Diseases and shorT explanation

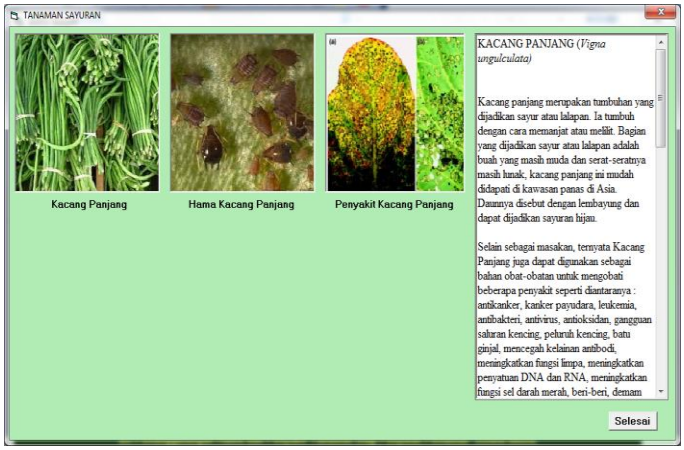

Figure 5: Example Vegetable Long Bean with Pests, Diseases and short explanation

The following figures are shown some examples for fruit crops:

Figure 6: Example Display sub-menu At Fruit Program

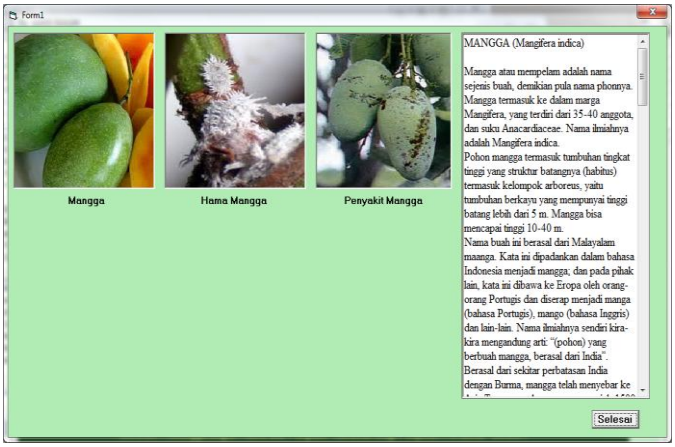

Figure 7: Example Fruit Mango with Pests, Diseases and short explanation

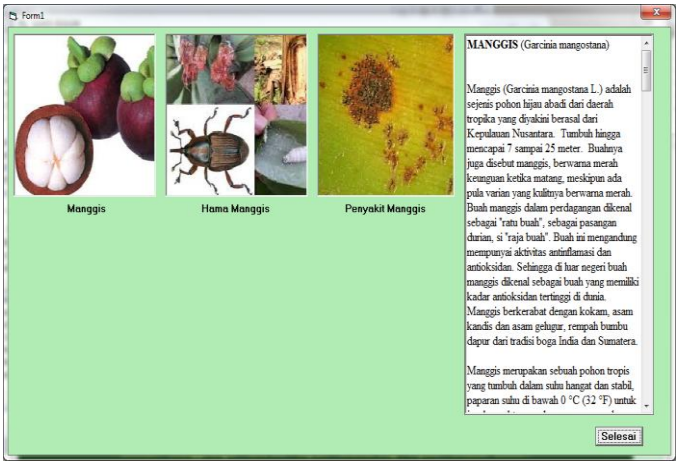

Figure 8: Example Fruit Mangosteen with Pests, Diseases and short explanation

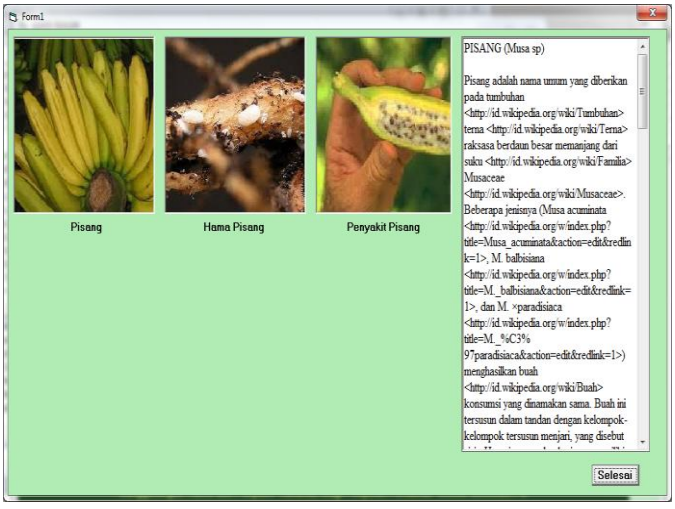

Figure 9: Example Fruit Banana with Pests, Diseases and short explanation

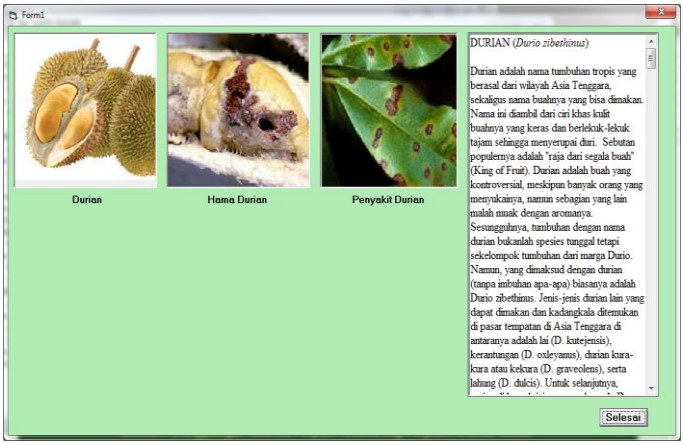

Figure 10: Example Fruit Durian with Pests, Diseases and short explanation

V. CONCLUSION

Based on the results of the testing program that has been created, the comments provided by the extension of plant pests and diseases can be described as follows:

1). Need additional information related to pests and diseases and tackling the various other plants.
2). So that the program can be optimized, it is necessary the addition of some facilities, such as printing brochures concise, facility updates and discussion forums

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REFERENCES

[1] Andri Kristanto. 2008. Design of Information Systems and Applications. Publisher Gava Media. Yogyakarta

[2] Anonymous, 2013. Agricultural Statistics Human Resources and Institutional Data Center 2013. Farmers and Agricultural Information System. Secretariat General of the Ministry of Agriculture

[3] Novia, A., 2007. The Windows Applications with Visual Basic Enterprise. Publisher. PT. Elekmedia Komputindo. Jakarta.

[4] Novi Dian Nathasia, 2013. Design Expert System Identification of Horticultural Crops Disease Prevention To Facilitate Hama. Journal of Information Technology. Volume 2. No. 2 of 2013. http: // lkppm. pradnya.ac.id/wp-content/uploads/2013/03/6.-pakar-tanaman-168-180.pdf. Downloaded on April 24, 2014.

[5] Pracaya, 2007. Plant Pests and Diseases. Revised Edition. Publisher: Penebar Organization. Jakarta. 434 Pages.

[6] Rusmawan, UUS., 2009. Collection Program Concept ADO VB 6.0. Publisher: PT. Elex Media Komputindo. Jakarta

[7] Sutanta, E., 2005. Introduction to Information Technology. Publisher: Graha Science. Jakarta.

[8] Siswanto, Abdul Fadlil, 2013, the Expert System for Diagnosing Plant Pests and Diseases Onion Using Certainty Factor. Journal of Bachelor of Engineering Informatics. Volume 1. No. 1. June 2013 e-ISSN: 2338 to 5197.

[9] Winardi, 2010. Principles of Management Principles. Publisher CV. Mandar Maju. Bandung.

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