

EMPOWERMENT OF SIAMESE CITRUS FARMERS KAMANG NAGARI KAMANG HILIR, KAMANG MAGEK DISTRICT, AGAM REGENCY

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ABSTRACT

Siam Kamang citrus farmers, who are known for their JESIKA products in Nagari Kamang Hilir, Kamang Magek District, Agam Regency, have been cultivating oranges since 1962. During its development, Siamese citrus farming experienced a period of production failure due to the CVPD virus attack. Excessive use of pesticides has affected the development of Siamese orange agribusiness in Nagari Kamang. Community service activities in the form of disseminating research results on prospects for developing Siamese orange agribusiness and the financial feasibility of Siamese citrus business are carried out in an effort to empower farmers to develop Siamese citrus farming. From the FGD activities carried out, farmers finally realized that farming patterns that use pesticides as an effort to prevent pests and diseases incur large costs and have a negative impact on the development of JESIKA agribusiness. Farmers are advised to cultivate JESIKA in accordance with the recommended SOP and apply a polyculture cropping pattern with an organic farming system to increase production more optimally.

Keywords: Agribusiness, Siamese Oranges, JESIKA

PRELIMINARY

Citrus fruit is one of the fruit commodities that have economic value, both consumed fresh and processed. Citrus fruits have a high vitamin C content (Marti et al, 2009), are a source of minerals, especially potassium (Berk, 2016) and contain phenolics, flavonoids and antioxidants (Zhang et al, 2018). Siamese orange is one type of citrus that is widely cultivated in West Sumatra (Balitjestro, 2014). In Nagari Kamang Hilir, the community has been cultivating Siamese oranges since 1962.

In the period from 1962 to the end of 1989, Siam Kamang oranges had a positive impact on the economy of the people of Nagari Kamang Hilir. However, Siam Kamang oranges contracted the CVPD virus which damaged the leaves and fruit in 1990. The leaves of the citrus infected with this virus will turn yellow and the fruit will become small and hard. The condition has an impact on the economic heart of the people who generally try to cultivate Siamese oranges. To avoid continuous losses, since 1994 farmers have switched to vanilla and cassava. However, this farming does not provide satisfactory results for farmers. This is because the maintenance of vanilla plants is not easy and the cassava yields do not have a high selling value. In 2000, Gradually the farmers of Kamang Hilir began to try again to plant Siamese oranges in their yards and gardens (parak). The total planted area continued to increase to 63 Ha in 2017 where every hectare there are 400

Siamese oranges. Each Siamese orange can produce as much as 35 Kg per year. Thus the Siam Kamang Jeruk farming, which was later abbreviated as JESIKA, has revived the economy of the Kamang Hilir community.

JESIKA oranges have very good potential to be developed (Hokaryah, 2019). However, the deep experience as a result of the failure of Siamese citrus farming in the past made farmers to be overprotective in managing the cultivation of Siamese oranges. Farmers use pesticides, fertilizers and other drugs in excess to prevent plants from re-infecting the CPVD virus. Farming practices like this cause quite large production costs (Siregar, 2019). The research results of Hariance et al (2020) show that excessive use of pesticides has affected the development of Siamese orange agribusiness in Nagari Kamang. From the three research results, community service activities were carried out in the form of disseminating research results in an effort to empower farmers to develop Siam Kamang citrus farming.

METHOD

This activity was carried out with a Focus Group Discussion (FGD) pattern in July 2019 by inviting the Nagari Wali, Nagari officials, heads and members of farmer groups, community leaders and village youth. The activity was carried out at the office of the Mayor of Nagari Kamang Hilir which was attended by 20 participants. This activity is carried out in 2 stages, namely the preparation stage and the implementation stage. At the preparatory stage, the preparation of dissemination documents in the form of presentation materials, administration, coordination of time and location of activities is carried out. Then the second stage is the implementation of activities, namely the presentation of research results by Silatul Hokaryah and Mardiana Siregar, and followed by a FGD led by Mrs. Vonny Indah Mutiara, PhD.

RESULTS AND DISCUSSION

The implementation of community service activities begins with the presentation of research results which are divided into two materials. Material 1 is about the prospect of developing Jeruk agribusiness and material is about financial feasibility analysis of Jeruk Siam business (Figure 1). Dissemination of research results was carried out in an effort to assist the development of Siamese citrus farming in the Kamang Hilir village, Magek District, Agam Regency. This effort is to realize a better farming pattern so that farming is more efficient and can be developed into an agribusiness area which in turn can improve the welfare of the Nagari Kamang Hilir orange farmers.



Fig. 1 Submission of research results

The main points of research results presented by the presenters are as follows:

1. Material 1: Prospects of Agribusiness Development of Siam Kamang Oranges

In this material, the results of the research are presented (Hokaryah, 2019) that:

- 1) JESIKA's farm in Nagari Kamang Hilir has the prospect of being developed into an Agribusiness area because it has greater strengths and opportunities compared to existing weaknesses and threats.
- 2) Separately, each component of the agribusiness subsystem is already available in Kenagarian Kamang Hilir but is still not well integrated.
- 3) It is recommended that parties related to JESIKA's agribusiness development planning can develop an aggressive development strategy, namely using strength to seize existing opportunities (Figure 2)

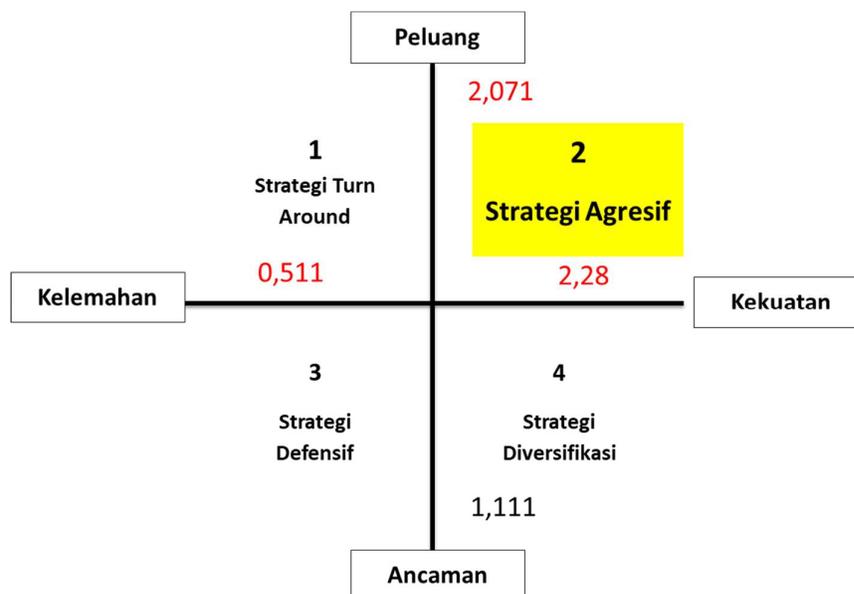


Fig. 2 JESIKA . Agribusiness Development Strategy (Hariance et al., 2020)

2. Material 2: Analysis of the Financial Feasibility of the Siamese Orange Plantation Business

This material describes the results of research which show that the farming practices carried out by JESIKA farmers in Nagari Kamang Hilir are inefficient because they incur large costs.(Siregar, 2019). The material presented is as follows:

- 1) JESIKA farming is carried out personally by farmers who are members of the Manis Sejahtera farmer group
- 2) The average land owned by farmers is 0.25 Ha
- 3) The cultivation techniques implemented are still not in accordance with the Standard Operating Procedures (SOP) from the Agriculture Service of Agam Regency.
- 4) From the assessment of the investment criteria, the results of the B/C calculation are 1.65 where with farming behavior that uses excessive pesticides and drugs, farmers still get a profit of 0.65 from every 1 unit cost incurred.
- 5) It is recommended for farmers to cultivate JESIKA in accordance with the recommended SOP and apply an organic farming system to reduce the amount of high residue in the citrus fruit produced.

After the presentation of the material, the activity continued with FGD activities with farmers, community leaders, and the village guardian of Kamang Hilir (Figure 3).



Fig. 3 FGD with farmers, community leaders and Wali Nagari Kamang Hilir

From this activity the results obtained that:

- 1) Farmers carry out farming patterns using quite a lot of pesticides and drugs in the form of preventive efforts (prevention) of diseases and pests that attack citrus plants.
- 2) Farmers have not found a better effort in preventing pests and diseases on citrus plants other than the use of drugs.
- 3) Farmers have tried to make pest kits, but these are still not effective in controlling pest attacks on citrus plants (Figure 4).

- 4) FGD participants hope that universities can help find better farming patterns in order to prevent pest and disease attacks on citrus plants.

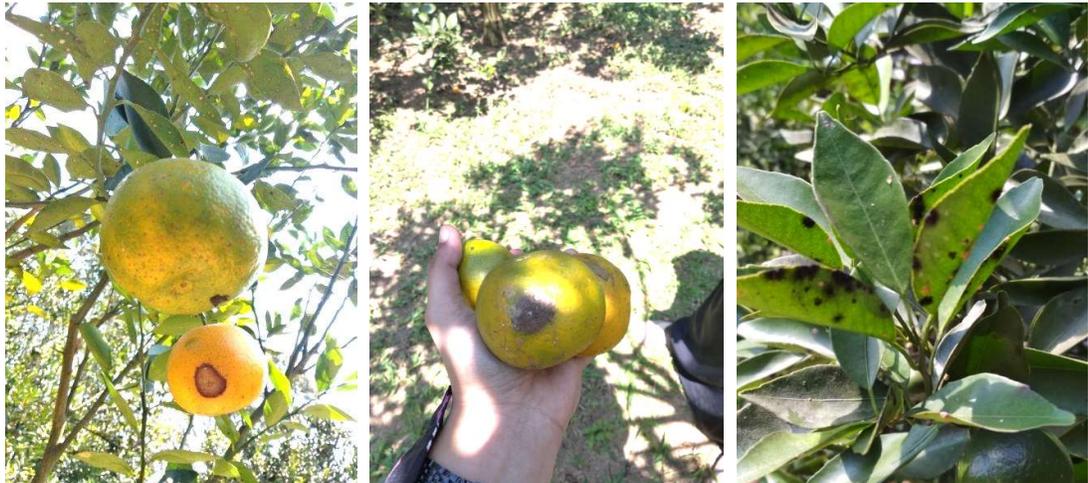


Fig. 4 Pest and disease attacks on Siam Kamang Citrus plants

- 5) Based on information obtained through FGD with farmers, it was found that the pattern of using pesticides and drugs was carried out by farmers at the age of 2 years of citrus plants, namely at the time of the first fruit. At this time, farmers apply a mixed cropping pattern with horticultural crops such as eggplant, cabbage, chili and other crops. The citrus harvest at this time was not attacked by fruit fly pests (Figure 5).



Fig. 5 Polyculture Cropping Patterns with other horticultural crops

- 6) However, farmers only cultivate plants in polyculture until JESIKA is 3 years old after planting. Fruit fly pest attacks began to occur after farmers stopped the polyculture cropping pattern, which resulted in farmers experiencing significant loss of crop yields.

CONCLUSIONS AND SUGGESTIONS

From this service activity, farmers can find out the condition of the JESIKA farming business that has been carried out. Farming patterns that use drugs and pesticides as an effort to prevent attacks from pests and diseases cause considerable costs for farmers. However, from the Focus Group Discussion activities carried

out, it can be seen that the polyculture farming pattern carried out by farmers at the age of 1-3 years can prevent fruit fly pests. Therefore, this cropping pattern should be implemented during JESIKA's economic life so that it can increase production more optimally. In addition, it is necessary to conduct further training on organic farming management in order to prevent excessive use of pesticides and drugs.

THANK-YOU NOTE

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REFERENCES

- Berk, Z. (2014). Citrus fruits processing. (1st edition). Academic Press. DOI:<https://doi.org/10.1016/C2014-0-03617-3>
- Research Institute for Citrus and Subtropical Fruits (Balitjestro). (2014). Distribution of tangerines in Indonesia. Ministry of Agriculture. <http://balitjestro.litbang.pertanian.go.id/sebaran-jeruk-keprok-di-indonesia/>
- Hariance, R., Hokaryah, S., & Mutiara, VI (2020). Identification of Factors Affecting the Development of Siamese Citrus Agribusiness in Nagari Kamang Hilir, Kamang Magek District, Agam Regency. In A. A, RM Rukka, L. Fudjaja, & NM Viantika (Eds.), Agribusiness National Seminar on Agribusiness Development in Realizing Food Security in the Industrial Age 4.0. Agribusiness Study Program Department of Socio-Economic Faculty of Agriculture Unhas.
- Hokaryah, S. (2019). Development Prospect of Siamese Orange (*Citrus nobilis* LOUR var. *Microcarpa* Hassk) in Nagari Kamang Hillir, Kamang Magek District, Agam Regency. Andalas University Faculty of Agriculture.
- Marti, N., Mena, P., Canavoz, JA, Micol, V., & Saura, D. (2009). Vitamin C and the role of citrus juices as functional food. *Natural Product Communications*, 4(5), 677-700. <https://doi.org/10.1177/1934578x0900400506>
- Siregar, M. (2019). Analysis of the Financial Feasibility of Siam Orange Plantation Business in Nagari Kamang Hilia, Kamang Magek District, Agam Regency. Faculty of Agriculture, Andalas University.
- Zhang, H., Yang, Y., & Zhou, Z. (2018). Phenolic and flavonoid contents of mandarin (*Citrus reticulata* Blanco) fruit tissues and their antioxidant capacity as evaluated by DPPH and ABTS Methods. *Journal of Integrative Agriculture*, 17(1), 256-263. [https://doi.org/10.1016/S2095-3119\(17\)61664-2](https://doi.org/10.1016/S2095-3119(17)61664-2)