THE LEVEL APPLICATION OF GAP-SOP ON FARM ACTIVITY FOR PRODUCT QUALITY IMPROVEMENT: A CASE STUDY ON FARM PONDOH ZALACCA IN SLEMAN

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Abstract
In order to produce zalacca in accordance with quality standards requires a planning process that ensures the production of fruit obtained in accordance with established quality standards. The production process includes a set of norms of good application or often referred to as GAP (Good Agricultural Practice) SOP (Standard Operating Procedure) farming. This study aims to determine the level of application of the GAP-SOP farming pondoh zalacca and the factors that affect the application of GAP-SOP. The study was conducted by interviewing the farmer’s survey methods and techniques of statistical analysis using rank spearman correlation test. The results showed that levels of GAP-SOP application of the pondoh zalacca farming in the District Turi is already quite high, but several sub-activities need to be improved, such as: irrigation, pest control and harvesting. Farming experience are factors that affect the level of GAP-SOP application at sub thinning activities and control of plant pests, while the scale of farming activities affect the sub-pollinating flowers.

Key words: SOP-GAP, Farming, pondoh zalacca.

INTRODUCTION
Zalacca is one of favored native to Indonesia and has good prospects for the undertaking as one of the commodity in the fruit agribusiness development and has also been directed as an export commodity. But in fact, the production quantity and quality of these fruits have not been able relied upon to be the prima donna of the national fruit. This condition is caused partly by a system of farm management, cultivation; harvesting and post harvest are not yet in accordance with the rules of proper cultivation. On the other hand, at the moment consumers are demanding quality standards of products primed with the consumption of a guaranteed safety. This condition needs to be anticipated by the producer zalacca by applying the rules of the right cultivation, to ensure fruit quality and food safety (Rustijarno, 2008).

Based on the data obtained, the condition of fruit agribusiness in Indonesia experienced an increase in the number of production or availability. Quality products also increased with marketed fruit in the supermarket or fruit shop. Tjiptono and Diana (1995), defines the quality is fitness for use, while according Fergenbaum (1992), is the quality control procedures to achieve quality objectives industry. Despite this low level of fruit consumption that is equal to 30 kg / cap / yr. This is because in general the fruit crop not yet managed optimally in particular commodities zalacca (Thamrin, 2005).

Production of fruit crops in Sleman dominated by zalacca plant, especially species of pondoh zalacca plant. Tempel Subdistrict is one of zalacca pondoh production center in Sleman that can supplies fruits to markets inside and outside Yogyakarta. Pondoh Zalacca is a leading commodity in the Province of Yogyakarta (Anonymous, 2003).

At this time, some farmer groups pondoh zalacca in Sleman have implemented the Standard Operating Procedures of Good Agricultural Practicing (SOP-GAP), so that
their products are certified Prima III, which means it is safe for consumption. Pondoh zalacca cultivation is done organically or without the use of chemical fertilizers and pesticides. (www.deptan.go.id / Secretariat General, 2008).

Managed farm enterprises (Djuwari, 1994) is a management, it can also be interpreted as a science that studies how to make and implement decisions on a farm can be influenced by external factors only, as well as internal factors or factors both at once.

In an effort to penetrate export markets, it has made efforts to include registration of the garden zalacca, implement Standard Operating Procedures of Good Agricultural Practicing (SOP-GAP) and Integrated Pest Management (IPM), availability Pest List, and Packing House which has been registered (www.deptan.hortikultura.go.id, 2008). Problems faced in order to export fruits, among other zalacca plantations that have implemented GAP-SOP is limited so that the ability of producers to supply the needs of export is also limited. Also the prices offered by the importing country is too low so that less profitable farmers, given the results of production still get a certificate Prima III, not yet all products will be certified Prima II or even Prima I. Based on the above issues necessary to study the extent of application of cultivation technology based on the zalacca pondoh GAP-SOP and what factors are affecting the level of the application of cultivation technology pondoh zalacca so that the resulting production still get a certificate of Prima III.

RESEARCH METHODS

The research on the application of SOP-GAP on pondoh zalacca farms is a descriptive study of a method that focuses on an object to expose a factual, systematic and accurate information about a situation (Nazir, 2003). The application technique is to use survey methods to study the facts in getting the level of application of the SOP-GAP on pondoh zalacca farms and the factors that influence it.

The study conducted in the District of Turi, Sleman because that location is one of the largest development centers pondoh zalacca in Sleman. Samples taken from the peasant farmers who have implemented GAP-SOP on the farms pondoh zalacca in the garden that has obtained registration by the Directorate of Quality and Standardization Directorate General of Processing and Marketing of Agriculture Production. Farmers' groups who have implemented GAP-SOP is a group of farmers "Si Cantik" located in the Bangunkerto Village. All members of the group is taken (the census) as respondents.

Primary data that was taken are the data about the application and the factors that influence the level of application of GAP-SOP on the farm zalacca pondoh, namely: farming experience, level of formal education, land, availability of capital, labor in the family, and the price production.

The level of GAP-SOP application on farms of zalacca pondoh measured based on the intensity of conformance between the application of cultivation techniques with the standard requirements have been determined. The frequency is measured by scoring, namely: 1 for answers that never fit, 2 for rarely appropriate answer, 3 for answers that are sometimes appropriate, 4 for the answer that is often appropriate, 5 for an answer that is always appropriate. Then the results of the scoring were made a category level of GAP-SOP application based on interval with the formula:

\[ \text{Interval} = \frac{\text{Highest score} - \text{lowest score}}{\text{Number of category scores}} \]
Table 1. Determination of the application of GAP-SOP on the zalacca pondoh farms

<table>
<thead>
<tr>
<th>Scores</th>
<th>Scores Achievement</th>
<th>Level category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 5</td>
<td>3.67 – 5.00</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>2.34 – 3.66</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>1.00 – 2.33</td>
<td>Low</td>
</tr>
</tbody>
</table>

In order to determine the relationship between the level of GAP-SOP application (dependent variable Y) with an influential factor (independent variable X), the data were analyzed by using rank spearman correlation analysis.

RESULTS AND DISCUSSION

The application of GAP-SOP on the pondoh zalacca farms in details is the technique of cultivation starting from land preparation to harvest and post harvest. Based on field observations and interviews with the farmers was found that the activities of GAP-SOP application in details are the leaf pruning, the thinning of plant buds, the organic fertilization, irrigation, the flowers pollination, the fruit spacing, pest control, harvesting and post harvest.

Table 2. The application level of GAP-SOP on pondoh zalacca farms

<table>
<thead>
<tr>
<th>No</th>
<th>Activity</th>
<th>Scores</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>The leaf pruning</td>
<td>4.00</td>
<td>High</td>
</tr>
<tr>
<td>2</td>
<td>The thinning of tree buds</td>
<td>3.09</td>
<td>Medium</td>
</tr>
<tr>
<td>3</td>
<td>The organic fertilization</td>
<td>4.00</td>
<td>High</td>
</tr>
<tr>
<td>4</td>
<td>Irrigation</td>
<td>2.02</td>
<td>Low</td>
</tr>
<tr>
<td>5</td>
<td>The flowers pollination</td>
<td>4.09</td>
<td>High</td>
</tr>
<tr>
<td>6</td>
<td>The fruit spacing</td>
<td>3.82</td>
<td>High</td>
</tr>
<tr>
<td>7</td>
<td>Pest control</td>
<td>1.98</td>
<td>Low</td>
</tr>
<tr>
<td>8</td>
<td>Harvesting</td>
<td>2.70</td>
<td>Medium</td>
</tr>
<tr>
<td>9</td>
<td>Post harvest</td>
<td>4.09</td>
<td>High</td>
</tr>
<tr>
<td>Mean Scores</td>
<td></td>
<td>3.31</td>
<td>Medium</td>
</tr>
</tbody>
</table>

Pruning. The results showed that all the farmers cut the leaves of zalacca plants in accordance with the GAP-SOP on pondoh zalacca farming. Compliance level that undertaken is in accordance with the score value of 4.0. This shows that the intensity of the plants treatment in organic farming of pondoh zalacca is pretty good, especially on leaf pruning activities. It’s caused that the leaf zalacca is an important part in the formation of flowers and fruits.

Thinning of trees buds. The buds thinning of tree that be done by the farmers are at varying levels of Compliance by the score between 2.0 to 4.0. Thinning was done to keep in order to avoid excess plants that can causes plant nutrient deficiency. Thus, it thinning will keep the growth of stem plants grow optimally.

Fertilization of plants. Fertilization of plants on pondoh zalacca farms is in accordance the GAP-SOP by using organic fertilizers. A good organic fertilizer is made from goat manure. In the application of pondoh zalacca farm all of the farmers apply organic fertilizer according to the GAP-SOP with the value score of 4.0. The high application level of fertilization which is due to the availability of enough fertilizer and the applications that is relatively easy to do.
Irrigation. In general, zalacca plants do not much require intensive irrigation. Irrigation is done by making a trench on the sidelines of zalacca block. The trench is useful for irrigation and drainage tract during floods in the rainy season. The ground beneath the plant is closed by zalacca leaves so the soil humidity is maintained well. In addition zalacca plants relatively tightly so that evaporation can be reduced. Thus, irrigation is rarely done by the farmers. This low intensity irrigation makes irrigation farmers unusual conduct in accordance with SOP-GAP so the application level is low by an average score of 2.02.

Flowers Pollination. Pollinating flowers is an important step that must be considered in the cultivation of pondoh zalacca. To get the maximum production of zalacca, zalacca flowers must be pollinated for good conception. The GAP-SOP application level of pollination ranged is at a relatively high between 4.0 and 5.0 with a mean score of 4.09. This occurred because the farmers try to make the production of zalacca could be higher and qualified. Besides, if it is not done conception, it production will be very low even out of production because the zacalca of male and female flowers separately.

Fruit spacing. Fruits that grow in bunches need to set amount of it in each bunch. To get fruits by the desired size of the market, then in setting fruits do fruit spacing if the fruit bunches are too dense. This is done in order to the fruits are uniformly size and not too small to fit the market demand. The research results show that the application of spacing fruit by the farmers is happening diversity of SOP-GAP application level which ranged between 2.0 to 5.0. This indicates that farmers do not yet fully the fruit spacing because of different perceptions of the farmers about the importance of spacing the fruit. Some farmers think that the fruit spacing will reduce the fruits production. It will affect the production of zalacca that are not uniformly size and maturity level. However, the mean score of the SOP-GAP application level on the fruit spacing is still relatively high at 3.82.

Pest control. In the application of pondoh zalacca farm also need to be considered pest control techniques in accordance by the GAP -SOP for production and quality of the zalacca that produced in accordance with the wishes of the market. The problems that often occur in pest control is pondoh zalacca fruit rot disease. The level of control is also not yet maximal. Therefore the level application of the GAP -SOP in pest control is still quite low ranging from 0.0 to 3.0 with a mean score of 1.98.

Harvest. The accuracy of the harvest to see the level of fruit maturity, fruit size, harvesting techniques and the hanging fruit of the land to the collection point will affect the quality of fruit produced. The GAP-SOP application level on the harvest activities that conducted by the farmers is diverse ranging from 0.0 to 4.0. However, most farmers carry out the application of GAP-SOP with the level of suitability score of 3.0. The average score of the GAP-SOP application level is 2.7 including the medium category. Fearing the price down and their life necessities are often urged, the farmers sometimes pick fruits while prices are still high because of supply in the market was still a little whereas the demand was high. This is what causes the level of GAP-SOP application on the harvest activities has not been high yet.

Post-Harvest. Post-harvest fruits handling aim to keep the zalacca produced is maintained the quality and the freshness. Post-harvest handling in detail are cleaning, sorting and grading. The grading intended that the resulting fruits grouped with a uniform size. Post-harvest handling of farmer's implementing GAP-SOP is high enough with a mean score of 4.09. This indicates that farmers trying to get the results of fruits selling by fruits cleaning and sorting in order to earn reasonable prices.
In general, the level of GAP-SOP application on pondoh zalacca farms in Turi District classified as medium. It can be seen from the results of the analysis that show a mean total score of 3.31. Therefore, some activities still need to be improved in the GAP-SOP on pondoh zalacca farms.

**The factors affecting the Level of GAP-SOP Application.** There are some internal and external factors affecting the level of GAP-SOP application on pondoh zalacca farms. These factors are farmers' education, farmers' experience, number of family members and farmers' land area. Rank Spearman correlation analysis results show that in general there is no significant influence of internal and external factors toward the level of GAP-SOP application. However, tracing the influence of internal and external factors toward the level of GAP-SOP application in detail indicates that exhibited significantly influence as can be seen in Table 3 as follows.

**Table 10. Correlation of Internal and External Factors toward the level of GAP-SOP Application on pondoh zalacca farms**

<table>
<thead>
<tr>
<th>Internal and External Factors</th>
<th>education</th>
<th>experience</th>
<th>number of family members</th>
<th>land area</th>
</tr>
</thead>
<tbody>
<tr>
<td>GAP-SOP Application</td>
<td>-.073</td>
<td>.278</td>
<td>-.146</td>
<td>.072</td>
</tr>
<tr>
<td>- The thinning of tree buds</td>
<td>-.228</td>
<td>.326(*)</td>
<td>.089</td>
<td>.043</td>
</tr>
<tr>
<td>- Pest control</td>
<td>-.172</td>
<td>.356(*)</td>
<td>.002</td>
<td>-.069</td>
</tr>
<tr>
<td>- The flowers pollination</td>
<td>-.265</td>
<td>.277</td>
<td>.089</td>
<td>-.300(*)</td>
</tr>
<tr>
<td>- The leaf pruning</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- The organic fertilization</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Irrigation</td>
<td>-.167</td>
<td>.160</td>
<td>.255</td>
<td>-.025</td>
</tr>
<tr>
<td>- Harvesting</td>
<td>.097</td>
<td>.039</td>
<td>-.157</td>
<td>.235</td>
</tr>
<tr>
<td>- Post harvest</td>
<td>.064</td>
<td>.177</td>
<td>-.022</td>
<td>.147</td>
</tr>
</tbody>
</table>

The factors that affect the level of GAP-SOP application on pondoh zalacca farms in detail are: 1) farmers' experience significantly influence the thinning of tree buds and the pest control. The experience of farmers has a positive correlation to the thinning of tree buds and pest control. It means the higher the experience level of the farmers then the level of GAP-SOP application on the thinning of tree buds activity will be higher or more intensive. Likewise, the level of GAP-SOP application on the pest control activities will be more intensive. 2) The land area significantly influences the level of GAP-SOP application on pollination activities. The farmers' land area negatively correlated to the zalacca flowers pollination. It means that if the land area is expanded, then the level of GAP-SOP application of zalacca flower pollination activity on the downside or the less intensive. This phenomenon can occur if land expansion is not matched by the availability of adequate labor workforce, especially for zalacca flower pollination. The
farmers will give priority to the utilization of its workforce outside the pollination activity so that become less intense pollination activity.

CONCLUSION

In general, the level of GAP-SOP application on pondoh zalacca farms in the Turi District still classified medium. Factors that affect the level of GAP-SOP application on pondoh zalacca farms in detail are the experiences of farmers towards activities of the thinning of tree buds and the pests control have positive correlation. Whereas, the land area negatively correlates the flower pollination activities. Based on the results of the research the application of SOP-GAP farming pondoh zalacca needs to be improved to produce higher quality zalacca products so it can fulfill the demands of export markets. Special efforts should be followed by an extension of land provision of the proper working tanaga so the application of SOP-GAP can still be implemented better

REFERENCES


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