Wine production management at Srikandi Vineyard, Jati Agung District, South Lampung Regency

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ABSTRACT: The purpose of this study is to find out an overview of the Srikandi Vineyard business and understand the management of wine production in the Srikandi Vineyard. The activity was held on February 28, 2022 to April 23, 2022 at the Srikandi Jatimulyo Vineyard, Jl. P. Senopati, Gg. Rajawali, Jatimulyo Village, Jati Agung District, South Lampung Regency, Lampung Province. The activities carried out for approximately 2 months (8 weeks) at the Srikandi Jatimulyo Vineyard are related to the management of grape crop production, the products produced are grapes and grape seedlings. However, in this paper, the author focuses on writing reports on production management, namely the preparation of grapevine planting media, replanting old plants into new seedlings, pruning vines, sanitizing the greenhouse environment, and making photosynthetic bacteria (PSB). The conclusion of this activity is that Srikandi Vineyard is a home industry whose output is grapes and grape seedlings, the type of cultivated grapes is imported types of grapes, the greenhouse area of Srikandi Vineyard is 400 m2. Srikandi Vineyard also serves the manufacture of greenhouses and their care until they bear fruit. Grape production management from initial inputs to ready-to-harvest fruits, inputs consist of land, planting media, seeds, fertilizers, and agricultural tools. The process consists of the manufacture of planting media, planting, applying fertilizers, pruning, and fruiting. Harvesting of vines can be carried out after 6 months from the beginning of the seedlings are planted, and the berries are stored in a cooling device so that the berries are kept fresh.

Keywords: grape; harvesting; management; production; wine

INTRODUCTION

Consuming grapes has excellent benefits for health. Grapes contain vitamin C which is known as a growing compound needed in important processes, antibacterial and antiviral compounds, as well as triggers immunity. According to the Central Statistics Agency (2020), grape production in Indonesia in 2019 was 13,724 tons and in 2020 it was 11,905 tons. Grape production in Indonesia from 2019 to 2020 showed negative growth due to the Covid-19 pandemic and the decreasing number of grapevine cultivators. This is very unfortunate even though the vine has very good prospects for development in Indonesia because it has a climate that is in accordance with the growing requirements of vines, especially vines with ninel, trans, and jupiter varieties. Ninel, trans, and jupiter varieties of grapes have the advantages of being easy to bear fruit or genjah, the dompolan is dense, the taste of the fruit is sweet and fresh, the degree of adaptation is high, it is able to grow and bear fruit well in the territory of Indonesia. Currently, the center of wine development in Indonesia is in the Probolinggo, Buleleng, and Jeneponto areas. Even though the potential for the development of vines is still very wide open to be developed in various parts of Indonesia (Nuni Anggraini, Yolandika, et al., 2022) (Natalia et al., 2022).

One of the efforts to increase the production of ninel, trans, and jupiter varieties of vines is by propagating seedlings in a milky manner, because the results of vegetative propagation of seedlings are faster in flowering and fruiting compared to seeds produced by generative propagation. Vines can also be planted in pots so that it is easier to care for both the planting media, the plant, and it is easy if you want to move it. Vines have their own charm for fruit lovers, although the price of grapes and grape seedlings is quite expensive when for daily consumption, but grapes still have many enthusiasts either for the purposes of...
welcoming events, or also as decorations in the yard of the house. In production activities it is necessary to carry out with good management. Production management is carried out in order to obtain products that the market is interested in including inputs, processes and outputs. Therefore, it is necessary to discuss production management at the Srikandi Jatimulyo Vineyard. The purpose of this study is to find out an overview of the Srikandi Vineyard business and understand the management of wine production in the Srikandi Vineyard (Yama, 2022).

**METHOD**

The activity was held on February 28, 2022 to April 23, 2022 at the Srikandi Jatimulyo Vineyard, Jl. P. Senopati, Gg. Rajawali, Jatimulyo Village, Jati Agung District, South Lampung Regency, Lampung Province. The activities carried out for approximately 2 months (8 weeks) at the Srikandi Jatimulyo Vineyard are related to the management of grape crop production, the products produced are grapes and grape seedlings (Chaterine Yolandika, 2022)(Anggara et al., 2022)(Hardiyanti, 2022). However, in this paper, the author focuses on writing reports on production management, namely the preparation of grapevine planting media, replanting old plants into new seedlings, pruning vines, sanitizing the greenhouse environment, and making photosynthetic bacteria (PSB) (Cahyati et al., 2022)(Hutasoit, 2022).

**RESULT AND DISCUSSION**

**Grape Growing Overview**

*Preparation of the planting medium of the vine*

The preparation of grapevine planting media is very important for the growth of the vine itself both for nutrient needs and to facilitate root growth, the grapevine planting medium consists of a mixture of planting, husks, and goat manure in a ratio of 1:1:1 (Yama & Unteawati, 2022).  

*Replanting of vines*

The replanting of the vine is carried out because the old vine wants to be replaced with a new variety, the old mother plant is mostly CRV, Julian, Trans, Ninel varieties, and will be planted with other varieties and there are also new ones, namely NSM, Moondrop, and there are also old plants that are still being maintained as mother plants, namely Trans and Ninel. Replanting is also carried out to reduce residues on the soil, which was previously the mother vine planted directly in the soil of the column in the green house, now the mother plant is planted using a 100-liter planter bag, this is also done so that the roots of the vine do not stick too deeply into the soil and may even damage the floor (Nuni Anggraini, Anggara, et al., 2022).

*Pruning of vines*

Cutting on this vine has several purposes, including to obtain a stronger and stockier stem of the vine, so that a good basic shape of the vine is obtained, gets more lush branches and twigs and is also healthy in large quantities (Wulandari & Warningsih, 2022)(Natalia et al., 2022).

*Environmental sanitation of green houses*

Sanitation is an effort to foster and create a good state in the field of health, especially public health. The definition of sanitation is an environment that is a way to nourish the human environment, especially the physical environment, namely soil, water, and air. In general, the purpose of sanitation is to ensure the cleanliness of the human environment so that conditions are realized that are in accordance with the health community and to restore, improve, and maintain human health. Sanitation in the greenhouse environment is carried out in order to reduce pests and weeds, as well as to keep the environment clean free from diseases (Clara Yolandika et al., 2017b) (Nuni Anggraini, Yolandika, et al., 2022).
Manufacture of photosynthetic bacteria (PSB)
Photosynthetic bacteria (PSB) are autotrophic bacteria that can photosynthesize. PSB has pigments called bacteriophages α or β that can produce red, green, to purple color pigments to capture solar energy as photosynthetic fuel. The ability of bacteria to carry out photosynthesis activities, so this bacterium is known as photoautotrophic bacteria, which are bacteria that can make their own food using energy derived from sunlight through the process of photosynthesis (Clara Yolandika et al., 2015)(Utoyo & Yolandika, 2018a). The pigment that plays a role in capturing sunlight for photosynthesis is bacteriochlorophylls that are on the photosynthetic membrane. This bacterium has a membrane system formed as a result of invagination of the cytoplasmic membrane. These bacteria can live in aerobic and anaerobic conditions, and can carry out photosynthesis and fermentation (Utoyo & Yolandika, 2018b) (Sofyani & Yolandika, 2021).

Production Management
Production management is an arrangement of the process of converting raw materials into a product or service that has a selling value. Production management is also a part of the field of management that has a role to coordinate various activities so that business goals can be achieved. To regulate production, it is necessary to have decisions that have something to do with achieving goals. Thus, the goods and services produced are in accordance with what has been planned.
Production management is closely related to decisions regarding the production process so that the goals of the organization can be achieved. In addition, there are two factors affecting production management. In addition, it is the division of labor that is a factor in the proper division of duties. Thus, the products produced are of high quality and can be well received in the market. The division of labor will help the production process to be more effective and efficient. Etymologically, the production function is related to accountability in processing and transforming inputs or inputs into outputs or outputs that have the form of goods and services so as to provide income for a company. Its implementation requires a series of activities regarding interrelationships and convergence and comprehensiveness in a system. This activity is related to the production function performed by several parts that are inside an enterprise.

Input
The initial input in the cultivation of grapes is the preparation of the growing medium, a good growing medium is recommended to use a mixture of bamboo soil, a good fertilizer is recommended to use rabbit urine. Places for planting vines are green houses, yards, gardens, pots, planterbags, polybags. The seedlings used are seedlings that have been spliced with rootstocks that match the planting to be planted, rootstocks can be of the type of kober 5 bb, or isabella, to top of which can use ninel, trans, and Jupiter types of grapes whose types of grapes are easy to bear fruit or spawn.
Soil for plants is a mixture of inorganic and organic solids, air, water, and microorganisms, all of which interact with each other. The reaction of organic and inorganic solids affects the quality of water and air in the soil; while water and air impute solids, while microorganisms catalyze some reactions in the soil. Not all soil is fertile, so it needs to be treated in order to create optimal conditions for plant growth and production. For this reason, it is necessary to have proper management; one of the management of soil fertility is by provision of media for plants, namely organic fertilizers. The soil under the bamboo tree obviously contains weathering from leaves, twigs, fronds, roots and possibly also weathered bamboo trees; the natural decomposition process results in very fertile soils especially containing the K (Potassium) element available to plants.
Rabbit urine or rabbit urine is one of the sources of organic matter that has a high content and benefits for plants, in the content of rabbit urine is stored micro and macro nutrients exceeding the content of other livestock. Many people do not know about the kadungan in the urine of rabbits which is very useful for plants, especially in agriculture. When compared to other grass-eating animals, rabbit urine has a high level of nitorgen due to its habit of rarely drinking water and consuming only forage.
Greenhouse is a building that has arrangements in it such as light intensity, temperature, air humidity, and wind speed to suit the growth needs of plants that are being cultivated. The function of the greenhouse as a plant protector from various disorders such as weather conditions and also disease pests

The selection and preparation of the ideal site during cultivation is the main factor that determines whether the plant can grow well or not, including the vine. To cultivate grapes the first effort that must be considered is the preparation of the planting site, whether it is in accordance with the conditions for growing it. Indeed, vines are one type of fruit that can be grown on any medium, but in cultivating grapes requires special care so that the results are good. To overcome this situation, many of the cultivators of this fruit plant make a climate engineering that suits the needs of plants by using a greenhouse made of UV plastic. Making a greenhouse is a good solution for plant cultivation media and engineering the physical elements of the environment to be the same as the climatic conditions the plant originated from. And this is what allows plants from certain areas to live and develop properly.

Production Process
The process of processing vines starts from the preparation of planting media, planting and arranging appropriate planting distances, it is also necessary to pay attention to the number of leaves that have grown, if there are many leaves, it is expected to immediately carry out pruning. Tabulampot vines need the addition of circular ajir for propagation of the vine. During the fertilization process if it has not entered 6 months, pruning is routinely carried out, namely 1 time every 2 weeks, so that a sturdy stem and good grapes are obtained.

Vine propagation also needs to be arranged so that the vine does not overlap which can be the cause of the onset of fungus on the vine, use tapetool so that the vine propagates as expected. Psb also needs to be done in order to get the desired fruit with a sweet and fresh taste.

If the land is in accordance with the growing conditions required by the vine, the next step is the selection of seedlings. When selecting seedlings, there are criteria that are used as a benchmark to assess the quality of grape seedlings. At this stage, it is an important thing that must be done properly, because it will have an impact on the quality of the plant and grapes later (Berliana et al., 2018)(Clara Yolandika, 2016).

Ninel is a type of imported wine originating from Ukraine. In Indonesia itself, especially the islands of Java and Sumatra, Ninel grapes have many enthusiasts. This is not without reason because ninel grapes are among the grape varieties that are able to bear fruit densely and are able to bear fruit up to perfect maturity in the Indonesian climate. Ninel grapes are known to have a beautiful fruit appearance, which is red with a distinctive sweet taste. Ninel vines are also suitable for cultivation in pots to beautify the yard of the house. Transfiguration wine is an imported type of wine that is already quite popular. The wine is a fruit that is suitable for direct consumption, or is not a type of wine to be used as a drink. This table wine has a unique color, and excellent taste and quality (N Anggraini, Berliana, et al., 2022).

Jupiter grape seedlings are the most favorite in Indonesia because of their genjah nature, aka easy to bear fruit. In addition, Jupiter grape seedlings are the most sought after because they have a seedless variant. Jupiter Seedless grapes are table grape varieties that produce strong purple fruits. The sweet taste of the fruit makes it one of the most sought-after grapes. The skin of Jupiter grapes is purplish-red when it is ripe, and oval-shaped. Other features of Jupiter grapes are crispy textured, thick bua flesh, and seedless. For the price itself, the price of Jupiter grape seedlings ranges from Rp. 80,000 to Rp. 200,000 (Handayani et al., 2017)(Clara Yolandika et al., 2016).

Grape Seedling Seeding
Quality high-yielding seedlings if they have already been obtained, after which you can carry out the seeding process. This seeding process aims to make the process of caring for seedlings easier to monitor. Other than that, seedlings must obtain sufficient and not excessive nutrient intake (Hendrik et al., 2021)(Bathara et al., 2021).
Grafting Techniques
Breeding vines using seeds generally takes a long time and does not necessarily produce quality crops. To overcome this obstacle, we can use another way, which is the grafting technique. Grafting is a technique of combining two plants into one. In general, a wound is made on a plant and then another plant is inserted into the wound so that the tissues of the two parts of the plant can grow together. Not only on grapes, grafting can also be done on other woody plants (Sutarni et al., 2019)(Handayani et al., 2018).

Tillage
After the vine seedlings have finished going through the seeding stage, the next step is to prepare the planting land as a medium for planting grapes.

Planting Grape Seedlings
During the planting process, there are several things that must be considered so that the vine grows optimally (Hendri et al., 2022):
• It must be ensured that the seedlings are already 2 months old.
• There are 2-3 leaf blades and strong roots.
• Plant and tightly close the planting pit.
• Install a propagation medium 2 meters long.

Pest Control and Plant Diseases
Grapevine control is carried out every day, by watering, checking the plant whether it is attacked by pests or other plant disturbing organizations. Bulking of the soil also needs to be carried out in order to avoid residues from fertilizers and chemicals used. Fertilization is also necessary when the plant looks wilted and to stimulate the growth of the vine so that the vine grows well. For the stage of care that is one of the important stages and must be considered in the cultivation of grapes. Because, if not properly cared for, the vine can be prone to damage, even death (Utoyo et al., 2018)(Clara Yolandika et al., 2021).

Harvesting
Harvesting is carried out when the fruit is already visible, the vine can harvest within 6 months after planting. Vines that have been harvested should be pruning so that they can bear fruit again and grow several new branches. Harvested grapes are recommended to be stored in a cooling machine in order to maintain their freshness (C Yolandika et al., 2021)(Clara Yolandika et al., 2017a).

CONCLUSION
Srikandi Vineyard is a home industry whose output is grapes and grape seedlings, the type of grapes cultivated is an imported type of wine, the greenhouse area of Srikandi Vineyard is 400 m². Srikandi Vineyard also serves the manufacture of greenhouses and their care until they bear fruit. Grape production management from initial inputs to ready-to-harvest fruits, inputs consist of land, planting media, seeds, fertilizers, and agricultural tools. The process consists of the manufacture of planting media, planting, applying fertilizers, pruning, and fruiting. Harvesting of vines can be carried out after 6 months from the beginning of the seedlings are planted, and the berries are stored in a cooling device so that the berries are kept fresh.

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Wine production management at Srikanji Vineyard, Jati Agung District, South Lampung Regency
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