

Greenhouse Development to Increase Orchid Production Results of KWT Lembah Kuncung Trenggalek

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Abstrak

Kelompok Wanita Tani (KWT) Lembah Kuncung Desa Surodakan, Kecamatan Trenggalek, Kabupaten Trenggalek merupakan suatu lembaga yang melakukan budidaya tanaman anggrek. Dinas Pertanian dan Pangan Kabupaten Trenggalek menjadikan tanaman anggrek sebagai salah satu komoditas tanaman hias yang dapat menjadi mata pencaharian masyarakat Trenggalek, khususnya di wilayah Desa Surodakan. Dengan melakukan pembinaan Kelompok Wanita Tani (KWT) Lembah Kuncung, Dinas Pertanian dan Pangan menyediakan lahan sebagai media produksi tanaman anggrek. Budidaya tanaman anggrek yang dilakukan oleh KWT Lembah Kuncung belum bisa dikatakan maksimal, hal tersebut dikarenakan metode penanaman yang dilakukan masih konvensional yaitu mengandalkan air, matahari, tanah dan pupuk. Oleh karena itu hasil produksi KWT Lembah Kuncung sangat tergantung dengan keadaan cuaca dan iklim setempat. Teknologi greenhouse atau rumah tanaman merupakan sebuah alternatif solusi untuk mengendalikan kondisi iklim mikro pada tanaman. Green house pada prinsipnya adalah sebuah bangunan yang terdiri atau terbuat dari bahan kaca atau plastik yang sangat tebal dan menutup diseluruh permukaan bangunan, baik atap maupun dindingnya. Didalamnya dilengkapi juga dengan peralatan pengatur suhu dan kelembaban udara serta distribusi air maupun pupuk. Jadi dengan adanya greenhouse, para petani KWT Lembah Kuncung tidak perlu khawatir terhadap perubahan cuaca dan iklim akan mempengaruhi hasil produksi tanaman mereka.

Kata kunci — Anggrek, Greenhouse, KWT Lembah Kuncung, Produksi Tanaman

Abstract

The Women's Farming Group (KWT Lembah Kuncung), Surodakan Village, Trenggalek District, Trenggalek Regency is an institution that cultivates orchids. The Trenggalek Regency Agriculture and Food Service has made orchids one of the ornamental plant commodities that can provide a livelihood for the people of Trenggalek, especially in the Surodakan Village area. By providing guidance to the KWT Lembah Kuncung, the Department of Agriculture and Food provided land as a medium for orchid production. Orchid cultivation carried out by KWT Lembah Kuncung cannot be said to be optimal, this is because the planting method used is still conventional, namely relying on water, sun, soil and fertilizer. Therefore, the production results of KWT Lembah Kuncung are very dependent on local weather and climate conditions. Greenhouse or plant house technology is an alternative solution for controlling microclimatic conditions in plants. In principle, a green house is a building that consists of or is made of glass or plastic which is very thick and covers the entire surface of the building, both the roof and walls. It is also equipped with equipment for controlling air temperature and humidity as well as distributing water and fertilizer. So, with the greenhouse, KWT Lembah Kuncung's farmers don't need to worry about weather and climate changes affecting their crop production.

Keywords — Orchids, Greenhouse, KWT Lembah Kuncung, Plant Production

1. PENDAHULUAN

The Women's Farming Group (KWT Lembah Kuncung), Surodakan Village, Trenggalek District, Trenggalek Regency is an institution that cultivates orchids. The distance between Mitra (KWT Lembah Kuncung) and Malang State University is approximately 136 km, and can be reached by car in 4 hours 2 minutes (Rahayu, 2016).

Orchids are ornamental plants that attract the attention of many consumers, most of which are popular with mothers (Martoyo et al., 2022; Hajar & Asfah, 2023). This plant is much loved by Indonesian people as an ornamental plant because it has variety, uniqueness, aesthetics and attractive colors (Habibah et al., 2023; Adi, 2023).

Apart from that, orchids also have high and stable economic value when compared to other

ornamental plants (Khasim et al., 2020; Wardoni et al., 2023; Ulinnuha et al., 2024). The Trenggalek Regency Agriculture and Food Service has made orchids one of the ornamental plant commodities that can provide a livelihood for the people of Trenggalek, especially in the Surodakan Village area (Diantoro et al., 2023). By providing guidance to the Kuncung Valley Women's Farming Group (KWT), the Department of Agriculture and Food provided land as a medium for orchid production. The cultivation of orchids carried out by KWT Lembah Kuncung cannot be said to be optimal, this is because the planting method used is still conventional, namely relying on water, sun, soil and fertilizer.

Therefore, their production results are very dependent on local weather and climate conditions. Current climate change has caused the Kuncung Valley KWT to experience many losses. Erratic weather conditions cause poor planting seasons and orchid cultivation results (Diantoro et al., 2023; Samudin et al., 2024). Orchid plants that are not properly exposed to sunlight will experience yellow leaves and flowers that cannot grow (Karoy et al., 2022; Monikasari et al., 2017) as shown in Figure 3. This is because KWT Lembah Kuncung finds it difficult to predict the weather in breeding and caring for orchids. Of course, this affects production results and has an impact on the farmers' economy. KWT Lembah Kuncung needs a breakthrough to help overcome these problems.

Greenhouse or plant house technology is an alternative solution for controlling microclimate conditions in plants. In principle, a green house is a building that consists of or is made of glass or plastic which is very thick and covers the entire surface of the building, both the roof and walls. It is also equipped with equipment for controlling air temperature and humidity as well as distributing water and fertilizer (Minanda et al., 2021). So with a greenhouse, farmers don't need to worry about weather and climate changes affecting their crop production.

2. METHOD

Schedules

Greenhouses are done in Surodakan Village, Trenggalek District, Trenggalek Regency within a period of 5 months. Activities start from observation to handover the greenhouse by the Malang State University Physics service team to KWT Lembah Kuncung. The schedule for a series of service activities is presented in Table 1.

Table 1. Schedules

Activities	Date
Preliminary survey	Saturday, 27 th April 2024
Needs analysis	Monday, 29 th April 2024

Program preparation	Monday – Sunday, 6 th -12 th May 2024
Program implementation, installation, and delivery	25 th June – 27 th July 2024
Monitoring and evaluation	Saturday, 7 th September 2024

Data Collection Techniques

Community Service Program Greenhouse to increase orchid production, there is a data collection stage which consists of the following stages:

a. Identification of Problems

The service team and KWT Lembah Kuncung jointly identified problems and planned the right time and place for implementing the service program as shown in Figure 1.



Figure 1. Observation and Identification of Problems with KWT Kuncung Valley, Trenggalek Regency

During the discussion and survey, data was collected on the length, width, and height of greenhouse's frame. These frames have a length of 5 meter, width of 10 meter and height 4 meter.

b. Needs Analysis

The service team and KWT Lembah Kuncung jointly determine the needs needed to implement the service program. Because the partner's location is in the open air, the greenhouse walls are also equipped with screen nets so that insects do not easily enter and keep the orchids moist. The greenhouse is made elongated with the not too high roof to facilitate the distribution of sunlight so that it can spread throughout the room. The arrangement of orchid plants is made efficiently so that humidity and sunlight can be distributed evenly.

c. Program Preparation

The priority programs are: (a) Educate the public regarding greenhouses, and (b) Carrying out installations or greenhouses on the Kuncung Valley KWT land.

d. Implementation, installation, and delivery

Handover of the greenhouse by the service team leader to the Trenggalek Regency Agriculture and Food Service. Handover of the greenhouse and all

The network visualization results on the social science research map show the size of the nodes with the dominant quantity. The keywords selected through network visualization in Figure 6 show that there are several keywords that appear frequently and are widely used for social science research. Some keywords that are often used for research on social science topics include citation impact, index, and ranking.

4. CONCLUSION

From this activity, partners received tools and knowledge in greenhouse maintenance for cultivating orchids. It is hoped that the greenhouse can increase orchid cultivation results by improving the quality of plants that are resistant to extreme temperature conditions. This community service activity has indeed been carried out up to the stage of implementing a greenhouse for cultivating orchids. It is hoped that KWT Lembah Kuncung can make good use of the greenhouse, so that the quality of the orchid plants will be better and have a high selling value.

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REFERENCES

- Adi, I. A. S. P. (2023). Ragam Rangkaian Bunga sebagai Penghias Lobby Hotel di Kawasan Wisata Ubud, Bali. *Jurnal Bisnis Hospitaliti*, 12(1), 1-13.
- Diantoro, M., Nasikhudin, N., Pujiarti, H., Arya, N. D., & Setyawan, D. (2023). Perintisan Usaha Budidaya dan Pembibitan Anggrek di Lembah Kuncung, Trenggalek. *Prosiding Seminar Nasional Pengabdian Kepada Masyarakat (SINAPMAS)*.
- Habibah, N. A., Rahayu, E. S., Anggraito, Y. U., & Sasi, F. A. (2023). Diversifikasi Produk Griya Anggrek Mekar Sari Kalisegoro Gunungpati Semarang. *Abdimas Toddopuli: Jurnal Pengabdian Pada Masyarakat*, 5(1), 1-12.
- Hajar, A., & Asfah, I. (2023). Pelatihan Budidaya Anggrek Bagi Mahasiswa Bahasa Inggris Terapan D4, Fakultas Bahasa Dan Sastra, Universitas Negeri Makassar. *Jurnal Gembira: Pengabdian Kepada Masyarakat*, 1(06), 1500-1514.
- Khasim, S. M., Hegde, S. N., González-Arnao, M. T., & Thammasiri, K. (Eds.). (2020). *Orchid Biology: Recent Trends & Challenges*. Springer Singapore. <https://doi.org/10.1007/978-981-32-9456-1>
- Karoy, E. R., Kainde, R. P., & Pangemanan, E. F. (2022, January). Inventarisasi Anggrek Hutan Di Tahura Gunung Tumpa. In *COCOS* (Vol. 1, No. 1).
- Martoyo, A., Hendrawan, S. A., & Hesnananda, R. (2022). Perencanaan strategi pemasaran tanaman hias Taman Anggrek Ragunan di masa Pandemi Covid-19. *Jurnal Sekretari Dan Manajemen*, 6(2), 114-122.
- Minanda, M. A., Idris, I., & Sumardi, D. (2021). Design and Simulation of Smart Greenhouse for Agrivoltaics Microclimates Optimization. *2021 International Symposium on Electronics and Smart Devices (ISESD)*, 1–6.
- Monikasari, I. N., Anwar, S., & Kristanto, B. A. (2017). *Keragaman Ml Tanaman Hias Bunga Matahari (Helianthus annuus L.) Akibat Penyinaran Iradiasi Sinar Gamma* (Doctoral dissertation, Fakultas Peternakan Dan Pertanian Undip).
- Rahayu, M. (2016). *Negotiation of local and global identities in "Nggalek. Co."* <http://repository.uin-malang.ac.id/2482/>
- Samudin, M. N., SARI, D. N., Suharyadi, S., Maulidda, R., & Rosadi, H. (2024). Inovasi Sosial PT. Pertamina EP Pendopo Field dalam Konservasi Tanaman Anggrek untuk mewujudkan Desa Wisata Anggrek di Desa Selangit, Kabupaten Musi Rawas. *Dharma Sainika: Jurnal Pengabdian Kepada Masyarakat*, 2(1), 1–9.
- Ulinnuha, Z., Farid, N., & Dinuriah, I. (2024). Pemberdayaan Santri Melalui Pendampingan Budidaya Anggrek Di Pondok Pesantren Nurul Qur'an, Desa Kebulusan, Kabupaten Kebumen. *PESARE: Jurnal Pengabdian Sains dan Rekayasa*, 2(1), 33-42.
- Wardoni, I., Widarni, S., & Kusnaman, D. (2023). Kepuasan konsumen tanaman anggrek di Kebun Sekar Gumilang Desa Ketenger Kecamatan Baturraden Kabupaten Banyumas. *AGRIFITIA: Journal of Agribusiness Plantation*, 3(1), 32-45.