

Education and Implementation of Organic Compost in the Rose Garden Community

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Abstract. Organic waste management is one of the key issues in sustainable urban development. Improperly managed organic waste can lead to environmental pollution and increased greenhouse gas emissions. As a solution, organic compost offers an eco-friendly alternative that reduces waste accumulation while improving soil quality. The community service program titled Education and Application of Organic Compost at Mawar Garden Community was conducted in August 2025, involving students from Universiti Teknologi MARA Malaysia and Universitas Riau Islands Batam in collaboration with the local community. The methods included educational sessions, hands-on compost-making practice, and the application of compost to plants in Mawar Garden. The results indicated an increased awareness among residents regarding the importance of organic waste management, the acquisition of new skills in making simple compost, and the practical use of compost on community garden plants. Strong support from universities, local government, and community participation were key to the success of this program. Despite challenges such as limited time and participants' lack of prior experience, the activity successfully contributed to environmental preservation, strengthened social bonds, and supported several Sustainable Development Goals (SDGs), particularly in the areas of environment, food security, and sustainable community development.

Keyword: organic compost, waste management, community empowerment, community garden, SDGs

Abstrak. Pengelolaan sampah organik merupakan salah satu isu kunci dalam pembangunan perkotaan berkelanjutan. Pengelolaan sampah organik yang tidak tepat dapat menyebabkan pencemaran lingkungan dan peningkatan emisi gas rumah kaca. Sebagai solusinya, kompos organik menawarkan alternatif ramah lingkungan yang mengurangi penumpukan sampah sekaligus meningkatkan kualitas tanah. Program pengabdian masyarakat bertajuk Pendidikan dan Penerapan Kompos Organik di Komunitas Kebun Mawar dilaksanakan pada Agustus 2025, melibatkan mahasiswa dari Universiti Teknologi MARA Malaysia dan Universitas Riau Islands Batam bekerja sama dengan masyarakat setempat. Metode yang digunakan meliputi sesi edukasi, praktik pembuatan kompos langsung, dan penerapan kompos pada tanaman di Kebun Mawar. Hasil penelitian menunjukkan peningkatan kesadaran warga mengenai pentingnya pengelolaan sampah organik, perolehan keterampilan baru dalam membuat kompos sederhana, dan penggunaan kompos secara praktis pada tanaman di kebun komunitas. Dukungan kuat dari universitas, pemerintah daerah, dan partisipasi masyarakat merupakan kunci keberhasilan program ini. Terlepas dari tantangan seperti keterbatasan waktu dan kurangnya pengalaman peserta sebelumnya, kegiatan ini berhasil berkontribusi pada pelestarian lingkungan, memperkuat ikatan sosial, dan mendukung beberapa Tujuan Pembangunan Berkelanjutan (SDGs), khususnya di bidang lingkungan, ketahanan pangan, dan pembangunan masyarakat berkelanjutan.

Kata Kunci: kompos organik, pengelolaan sampah, pemberdayaan masyarakat, kebun komunitas, SDGs

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Introduction

The educational activities and application of organic compost were carried out using a participatory approach that emphasized active community involvement. This method was chosen because the success of the community service program is largely determined by the extent to which the community is part of the process, not simply a beneficiary. The initial stage of the activity is preparation. This includes coordination between students, supervising lecturers, and the Taman Mawar community. Coordination is carried out to agree on the time, location, and technical aspects of the activity. During this stage, community needs are also identified, both in terms of composting knowledge and available facilities. The identification results indicate that the Taman Mawar community is enthusiastic about learning, but lacks a basic understanding of composting techniques.

The second stage is theoretical education. Composting has been successfully implemented using kitchen waste such as vegetable scraps, fruit peels, and dried leaves. The resulting compost is applied to vegetable gardens, ornamental plants, and fruit trees. Students and lecturers presented material on the benefits of organic compost, the basic principles of composting, and the practical steps for making compost. The material was presented in simple language, using images, real-life examples, and demonstration tools. Participants were introduced to the concept of "green" materials (vegetable and fruit scraps, fresh grass) and "brown" materials (dry leaves, twigs, and discarded paper), which must be balanced to produce quality compost.

The third stage was a compost-making workshop. Participants were divided into small groups for focus. Each group was given materials such as vegetable scraps, dry leaves, and soil. They were taught how to layer the materials, maintain moisture, and turn them regularly. Students accompanied each group to ensure all participants understood the steps. The fourth stage was applying the compost to plants. After understanding the theory and practice, the community was invited to directly apply the compost to plants in the Taman Mawar Garden. Educational activities increase public understanding of the benefits of compost for soil, plants, and waste reduction. Educational materials also emphasize the importance of reduce, reuse, and recycle in everyday life. This was intended to demonstrate the tangible benefits of compost for soil fertility and plant health. By observing fresher, greener plants, participants became more convinced that organic compost is effective and feasible to use at home.

The final stage is evaluation and reflection. All participants gathered to discuss their experiences during the activity. They shared their impressions, challenges, and further ideas. From this discussion, an agreement emerged to form a small group, the "Rose Garden Composting Community," tasked with continuing the routine composting practice. This methodology is integrative: combining theory, practice, direct application, and social reflection. With this flow, it is hoped that the program will not stop at ceremonial activities but will continue as a community habit.

Results and Discussion

The educational and implementation activities for organic composting at the Taman Mawar Community Garden have had a significant impact. In terms of knowledge, the community has gained a new understanding of organic waste management. Before the activity, most residents considered food scraps and leaves to be discarded. However, after the education,

they realized that organic waste is a resource that can be processed into natural fertilizer. The composting process was the most engaging part for participants. They were able to see firsthand how simple materials that are usually thrown away can be arranged into a useful pile.

Some residents even expressed their intention to try making compost at home on a small scale using buckets or barrels. This demonstrates a change in behavior and a willingness to try new innovations. The tangible impact is also visible on the plants in the Rose Garden. The applied compost makes the soil appear looser and moister. Plant leaves appear fresher just a few weeks after application. The residents involved expressed satisfaction in seeing the results of their work bring tangible changes to the community garden. Socially, this activity strengthened the relationship between students, lecturers, local government, and the community. Working together to process organic waste created a sense of community. Children actively participated in collecting dry leaves, while parents assisted with mixing and arranging the compost. This intergenerational synergy strengthened social bonds and served as an educational tool for the younger generation. The discussion also revealed several challenges. First, the composting process requires time and patience, as it doesn't produce instant fertilizer. Second, some residents are still reluctant due to concerns about the unpleasant odor.

Third, composting facilities are still limited, so compost production capacity is insufficient for all gardens. However, this obstacle can be overcome with continued mentoring, simple guidance, and the provision of additional facilities. Compared to similar programs in other areas, this initiative is unique because it is implemented in a high-density urban community. While composting is typically practiced in villages or agricultural areas, this initiative demonstrates that organic waste management can also be implemented in urban areas. This opens up new perspectives on the potential for urban farming to thrive with the support of simple technologies like composting. For sustainability, the community has agreed to form a volunteer group to continue the program.

Students and their supervising lecturers also developed a regular monitoring plan to ensure composting was being implemented effectively. Future developments include developing compost-based micro-enterprises, such as selling organic fertilizer to local residents or marketing environmentally friendly products in local markets. Thus, the results of this activity not only provide ecological benefits but also open up social and economic opportunities. Education and the implementation of organic compost have proven to be relevant, effective, and capable of encouraging communities towards a sustainable lifestyle.



Figure 1. Introduction of corn seeds used by local communities to Community Service participants.



Figure 2. Photo documentation after the activity of picking corn from the trees to be collected in full by Community Service participants.



Figure 3. Taking photos/pictures of corn from Community Service participants which were collected together in a black plastic bag.



Figure 4. The process of making planting media by Community Service participants for corn planters.



Figure 5. The process of cutting banana tree trunks that have been removed from the planting medium by participants in the Community Service Program at the University of Riau Kepulauan



Figure 6. Taking photos/pictures of Community Service participants and being guided by the local community after completing all activities in the compost garden.

Conclusion and Recommendations

The community service activity entitled Education and Application of Organic Compost in the Taman Mawar Garden Community has proven to be able to provide multidimensional positive impacts. Knowledge-wise, the community now understands the importance of organic waste management and basic composting techniques. Practically, they are directly involved in making and applying compost to plants, resulting in tangible results. Socially, this activity strengthens togetherness, builds intergenerational solidarity, and fosters a sense of ownership of the community garden. Despite challenges such as limited time, facilities, and concerns about odor, the program continues to run smoothly thanks to the support of all parties. The community's commitment to forming a composting volunteer group is a testament to the program's sustainability. Thus, this activity not only achieved its objectives but also paved the way for further development. Going forward, it is hoped that the community will develop composting as part of their daily lifestyle, even as an environmentally friendly business opportunity. UiTM Cawangan Johor Pasir Gudang, along with academic partners and the local government, is expected to continue supporting this program so it can be expanded and become a model of sustainable community service.

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