



University : Assiut University
Country : Egypt
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[3.5] Organic waste treatment

Organic waste is primarily concentrated in the Faculties of Agriculture and Veterinary Medicine, though it can also be found in varying degrees across other university faculties. Organic waste includes by-products from animal and poultry production, which are considered a type of organic fertilizer desired for agricultural land. In addition to waste from livestock farms, there are also waste products from plant farms, including residues from sorghum and maize, as well as all types of straw from legume and grass crops. The safe disposal of this waste at the Faculty of Agriculture is managed as follows:

- **3.3.1** For maize and sorghum waste, it is used as green fodder for livestock farms. Dried waste is shredded and used as bedding for animals and poultry.
- **3.3.2** Most types of straw from legume and grass crops (wheat straw, fava bean straw) are used as dry fodder for animals, while the remaining types of straw are used as bedding for animals and poultry.
- **3.3.3** If livestock and poultry farms do not need certain types of straw, or if there is excess production, it is added to agricultural land as a type of organic fertilizer.
- **3.3.4** Animal waste (bedding, manure, poultry litter) is removed from barns, dried in designated areas, and distributed to the college's farms based on priority and requests for its use.
- **3.3.5** Tree pruning waste, palm tree residues, and other organic waste are processed by the college into industrial organic fertilizer.
- **3.3.6** Organic waste in other faculties, such as food waste, is collected and disposed of by contracted waste handlers under the supervision of the Gardens Department and the General Administration for Environmental Projects at the university. Trash bins are provided in each office, including faculty, administrative, and staff offices, as well as in lecture halls and teaching rooms. Students are also reminded to dispose of food and drink waste in designated bins. At the end of each day, this waste is collected by workers.



- **3.3.7** Additionally, some student projects adopted by the university focus on producing biofuel through the recycling of solid agricultural waste, particularly rice straw, sorghum husks, and other agricultural residues that farmers typically burn, leading to harmful greenhouse gas emissions and environmental pollution. The concept relies on using anaerobic bacteria in the fermentation process to convert this waste into biogas as the primary product, with secondary products like animal feed. The "Eco-Fuel Innovators" team won second place for their project on recycling solid agricultural waste, particularly rice straw, sorghum husks, and other agricultural residues. The student team included: Shomoos Abdelsamie (Faculty of Science), Dina Gamal Abdelnasser (Faculty of Engineering), and Boulos Franc Habib (Faculty of Engineering).

This student project was implemented as part of Assiut University's encouragement of green projects, a key outcome of the "Green Assiut University Initiative." Two student teams from the initiative won second and fourth places in the global "Climathon" conference organized by the Ministry of Environment in cooperation with the European Union and the German International Cooperation Agency in Egypt on October 30-31, 2023, under the title "Climathon Upper Egypt – Towards Localizing Egypt's National Climate Strategy 2050." The event was supervised by Professor Ahmed El-Minshawi, the university president, and Professor Mahmoud Abdel-Aleem, Vice President for Community Service and Environmental Development.

Faculty of Agriculture

The faculty has a program for recycling most of the waste generated within the college. The disposal protocol for this waste depends on its nature due to the diversity of waste produced, including animal and poultry production waste, plant production waste, laboratory waste, and waste from the college's campus environment. The following outlines the disposal method for each type of waste according to its nature:

- **Animal Production Farm Waste:**
 - Animal waste and manure are used to produce silage, an organic fertilizer that is sold to the college farms or traders depending on the available quantity.
 - Dead or slaughtered animals that are unfit for human consumption are handled by a committee that writes a report and transfers them to the animal burial site in Beni Ghaleb.
- **Poultry Farm Waste:**
 - Poultry litter is sold to external traders or the college farms. In the future, with expected increases in quantity, the litter will be processed into biochar at the planned waste recycling unit.
- **Al-Ghareeb/Guidance Farm/Departments:**



- **Wheat By-product (Straw):** The straw is sold to traders, with part of it used in the college's poultry and animal production farms as feed or bedding.

- **Maize (Secondary Product – Stalks):**

- A portion is used to feed animals at the livestock production farms.
- The remaining part will be directed to the biochar unit.

- **Tree Leaves and Branches Waste:**

These will be sent to the biochar unit that is planned to be established at the faculty. Waste from the university's gardens is collected by the Gardens





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