

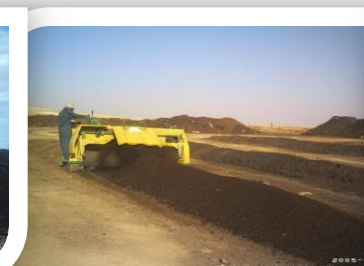
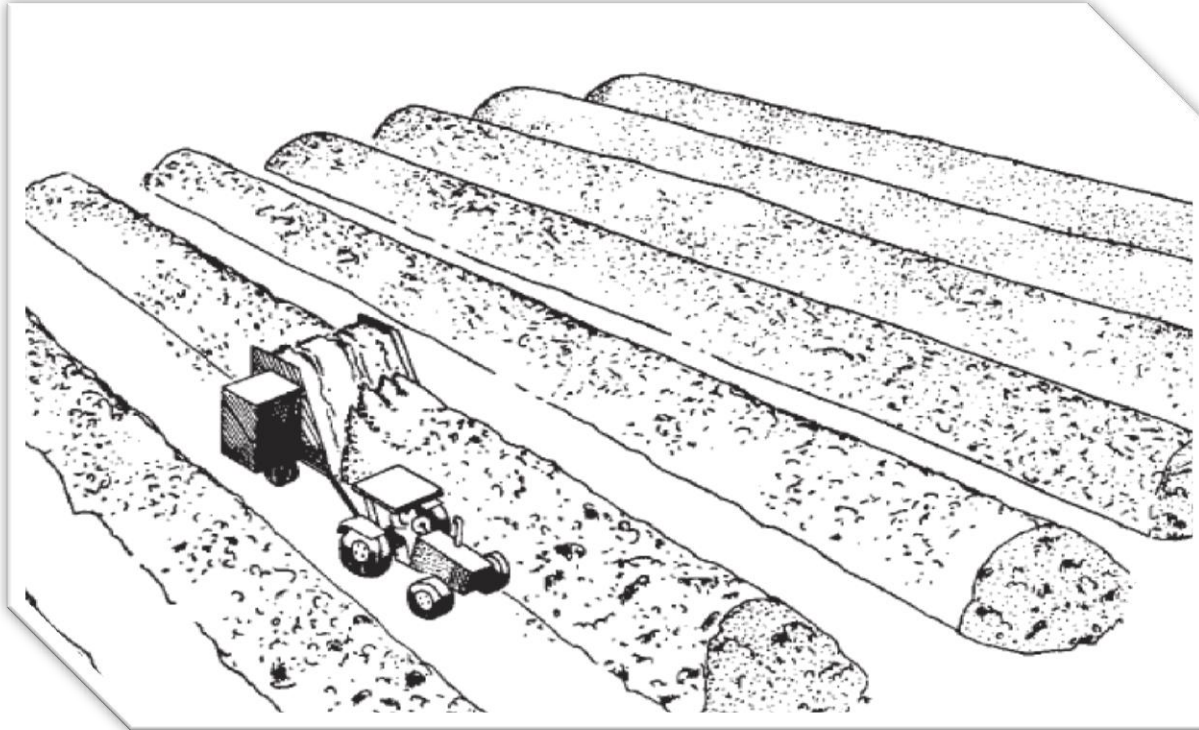
Animal Organic Waste Processing and Manufacturing of Compost

Summary Recent Experience in Jordan (Deir
Alla Organic Fertilizer Plant - Fertile Valley
Cooperative Society)

- Current practices have led the animal waste and remains (dung) that are produced in large quantities from poultry and livestock sector in Jordan, to be used in various agricultural activities to benefit from them in fertilizing agricultural soil and supporting the plants, causing a growing number of environmental problems and negative effects on the environmental elements such as the proliferation of houseflies, odors, pests and diseases and contamination of surface and groundwater resources and the deterioration of soil quality.
- Lack of factories or specialized stations to process with this waste in a sound and scientific manner and to produce good quality suitable for local cultivation with production capabilities that meet the needs of the local market.
- In 2006 the first specialized factory for the manufacture of organic fertilizers was established in the Jordan Valley under a royal initiative, it is being run by a local association in Deir Alla as a form of community involvement and enabling in terms of solid organic waste management. The factory adopts methods of natural aerobic processing to thermally sterilize such waste from all pathogens and eggs of flies, insects and seeds of weeds, and to improve its physical, chemical and biological properties, under certain operating conditions for the production of stable-structure, high quality organic fertilizer according to local and international standards.

- Currently, there is no policy for organic animal waste management (dung), but current practices for managing these animal waste are based on current relative environmental laws, regulations and legislation, operative in the kingdom. (The comprehensive cycle includes licensing procedures, production, storage, transport, treatment, disposal, and even use).
- The most important relevant laws are: The Environment Protection Act 52/2006, The Agriculture Act,
- The most important related instruction are: Ministry of Environment Instructions regulating the storage, transportation, processing of compost and dealing for the year 2009, Solid Waste Management Instructions 27/2005, Prevention of Dirt Gatherings, soil protection instructions, Ministry of Agriculture's Instructions, instructions on licensing and production of organic fertilizers, and organizations of plants growing.
- Technical specification No. 962/2011 on organic fertilizers and soil conditioners.
- Key partners in the sector: Ministry of Environment, Ministry of Agriculture, animal waste producers (ranchers), associations and relevant bodies.

Aerobic treatment Piling and Aerobic flipping system



- During organic fertilizer manufacturing process, the animal waste are entered as main inputs for production so that they are processed and converted into good quality processed organic fertilizer subject to local and international standards and meeting the diverse agricultural needs and as soil conditioners. Those waste materials may be properly utilized rather than using them in landfilling or storing them in the form of random piles that may cause environmental problems or health aversive.
- The current modern experiments in Jordan is aimed to introduce modern technological methods of organic fertilizer production by best methods of aerobic treatment, to produce a high quality product that meets local market needs. These modern stations allow for the training of Jordanian competencies on the different applications in manufacturing and multiple uses of organic fertilizers.
- The extensive use of processed fertilizers, will lead to reducing the environmental issues resulting from traditional uses of animal waste such as odors, flies, diseases and contamination of water sources.
- Using processed organic fertilizers will reduce the increased use of chemical fertilizers that are harmful to the environment.
- Organic fertilizer industry provides jobs for local manpower and develop their own competencies, contributing to development of the local community and the different agricultural sectors
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- The organic fertilizer production plants have become an urgent necessity in the Kingdom, especially after the instructions by the Ministry of Environmental prohibiting the use of untreated manure in agriculture and the need to be treated properly under the Jordanian standard. Here we must take into account several factors to ensure continuity, such as geographical location of the plant, quality of the product, farmer's purchasing power, having incentives and rewards for technical staff working in the field. The cost of transportation plays a key role in the economic viability of the processed product.
- Activation of legislation and supervision on the use of unprocessed animal manure in agriculture (whether in terms of manure producers or the users) plays a key role in regulating the sector and encouraging the manufacture of processed fertilizers at the national level.
- Provision of training programs and transfer of knowledge and experience to the technical workforce, enabling them to optimally run those plants and to produce high-quality fertilizers in productivities to meet local market needs.
- Intensification of awareness and various education programs within the local community to encourage the use of processed organic manure and to convince local farmers of its importance and the need to reduce usage of chemical fertilizers only, achieving numerous environmental and economic benefits.

To convey this experience and increase its scope at the national level require the following steps:

- Development a strategy for management of animal organic waste at the local level and to identify the geographic scope for the sites of organic fertilizer plants so as to be close to animal farms producing such animal waste. The sector needs to be restructured starting from production of the waste through their utilization in agricultural activities.
- Allocation of land by the government to set up such plants will encourage the expansion of processed organic fertilizers industry and reduces the necessary capital costs for building and construction . Involving local municipalities and local associations and the private sector in the organic fertilizer manufacturing projects which promotes community involvement within the concepts of solid waste management and creating more job opportunities and exchange of experiences.
- Identification of local and strategic partners for such projects based on the scope of the work, the roles and responsibilities.
- Development of an action plan for the project including a feasibility study and standard operating practices and technical specifications required during the preparation of materials, and processing, and the properties of the finished product.