

## **THE IMPORTANCE OF SEPARATING AND COMPOSTING WASTE FOR THE AGRICULTURE SECTOR IN LEBANON**

Lecture held at the Zahle Agriculture and Food Fair, 13 September 1997

Fouad Hamdan  
Lebanon Campaigner of Greenpeace Mediterranean

Greenpeace Mediterranean has formulated an alternative waste management plan that can be applied for Lebanon, a country caught in a vicious circle of waste generation and pollution. As economic growth leads to more consumption, the Council for Development and Reconstruction (CDR) and the Environment Ministry are trying to end the waste crisis by incinerating or landfilling household, hazardous hospital and toxic industrial waste. Until now, there is no plan to separate waste at source on a national level. Even worse, the authorities do not have any plan to tackle the issues of hazardous hospital waste and industrial pollution.

Lebanon is in an urgent need of waste management policies focusing on waste reduction, separation at source, reuse and then recycling. The industry should implement clean technology methods and start reducing the amount of toxic waste it is producing. The long-term aim should be the introduction of clean production methods in all industrial processes. Incinerators must be shut down. Only non-hazardous, non-compostable and non-recyclable waste can be landfilled in controlled dumps.

Greenpeace proposes an alternative to the incineration of urban solid wastes (USW): an alternative based on the selective collection at point of origin of the two fractions making up USW: organic wastes (for composting) and inorganic wastes (for reuse, recycling or prevention).

### **COMPOSTING ORGANIC WASTE:**

Organic waste, if dumped in an uncontrolled way, is responsible for problems of the contamination of the aquifers due to the infiltration of leaching agents, unpleasant odours, the proliferation of rodents and the perils of spontaneous combustion due to emission of the methane that is formed in dumps.

Until the beginnings of the science of the mineral nutrition of plants, in the mid-nineteenth century, the application of organic materials formed the basis of agricultural production. The very structure of agricultural establishments and rural society and economy ensured the return of organic wastes to the agricultural land. Currently, the more intensive use of the soil and the use of barely adequate cultivation methods has given rise to a reduction in the organic material content of soils, currently well below the optimum level. This low level of organic materials in the soil alters its chemical and biological equilibrium and has been accompanied by a degradation in its physical structure and a reduction in its fertility.

The close relationship between the organic material content in a soil and its fertility is a well proven fact and universally accepted. Effectively, the organic material improves the stability of the soil, increasing its porosity and capacity to retain water, thus encouraging interchanges of gases and water and the exploratory capacity of the root system of plants. The soil's capacity for cationic interchange is also raised, creating favourable conditions for the fixation of nutrients and keeping them available to the vegetables for a longer time. The state of aggregation of the soil and the development of its microbial flora are also encouraged.

The organic material also plays an important role in the regeneration of soils affected by erosion. The countries in the Mediterranean area suffer serious problems of erosion and the risk of desertification due to natural climatic conditions accentuated by bad use of natural resources and by the climatic change caused by greenhouse gases

The environmental and social advantages of compost do not come alone from the direct application of organic materials to soils. According to a cost-benefit analysis drawn up by the California Futures/Global Futures group, investigating the environmental economy of California, this US state could save 132 million dollars a year by increasing the use of compost 900% (41). This saving would come from the following factors:

- \* Reduction in dumping costs.
- \* Increase in crop yields.
- \* Saving of irrigation water.
- \* Reduction of the use of fertilisers.
- \* Reduction of the use of insecticides and herbicides.

In spite of its obvious advantages, the compost obtained from SUW does not have a favourable image. The traditional poor image of compost among farmers has mainly been caused by the manufacture of compost while omitting selection at the point of origin and the selective collection of the organic fraction of SUW, resulting in a high proportion of inert elements and heavy metals from cells and other toxic domestic wastes.

Among the public living around composting plants, compost has become associated with problems of unpleasant odours. These unpleasant odours arise when the high humidity of the organic wastes causes the appearance of aerobic processes that cannot be controlled for lack of oxygen. This is a problem that can be completely avoided by, for example, turning compost heaps over periodically. One thing we can be sure of is that these problems have limited the options for the application of compost.

In spite of everything, a low-quality compost made from SUW that were not selected at the point of origin can be applied without problems in green belts, forest plantings, anti-erosion measures, vineyards, olive groves etc. if the presence of heavy metals, the most critical factor, is controlled. For use in horticulture, high-quality compost obtained from organic wastes uncontaminated with other elements is required. For this reason, Greenpeace proposes the production of compost of two qualities

## **SELECTIVE COLLECTION (SEPARATION AT SOURCE)**

The main reason for the failure of many recycling installations constructed all over Europe during the 1970s was the absence of prior selective collection. Despite its high cost, the complex technology of these installations, which received wastes that had not been selected at the point of origin, were much less efficient than the more modern and less costly installations that classified for recycling those wastes arriving from selective collection.

Nowadays it is well established that, without selective collection, the possibilities for recycling are limited and costly. A recycling strategy should begin with a plan for selective collection, involving the public in the separation of wastes at the point of origin. A higher quality and quantity of public participation means there is less need for technology and lower costs.

The alternative plan proposed by Greenpeace attempts to reach the objective of the selective collection of 80% of the inorganic fraction of USW in three years, as well as ensuring collection by separation of the toxic components of domestic rubbish so that uncontaminated compost may be produced using the organic fraction.

To reach this objective, the following phases have been envisaged:

- \* Phase I: introduce Green Points (centres where people can deliver waste) and special containers in the street for paper and glass
- \* Phase II: introduce the selective collection of inorganic wastes
- \* Phase III: initiate the selective collection of toxic domestic wastes
- \* Phase IV: transform the organic fraction of SUW into compost

During all phases of the development of the alternative programme, public participation must be ensured, because it is fundamental to the success of that programme.

END