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A Strategic Study on Novel Technological Approaches for Transforming Agriculture and Industrial Bio-wastes into Bio-products in Egypt

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Where, agricultural and industrial bio-wastes are often insufficiently exploited in Egypt despite being a potential feedstock for value-added products with local applications. At the same time, these bio-wastes are caused many problems for human and animal healths and the environment. Where, these wastes caused spreading of Snakes, Scorpions, Rats, Mosquitoes and Flies; especially, Stable fly (*Stomoxys calcitrans*) which bleed the skin of human and animals in many places in Egypt. Therefore, the objective of the study was to develop biotechnological processes for converting two types of biodegradable wastes, i.e. agricultural and industrial bio-wastes into useful bio-products for different applications, e.g. animal feed, bio-char for soil properties amendment, fertilizers, bio-pesticides and bio-fuels. Numerous methods exist for this type of conversion processes. In this regard, some of these available methods are quite sophisticated, but, others could be adapted to the local conditions found in Egypt. Mainly, the sources of agriculture and industrial wastes (about: 55.000.000 ton/Y; 2020) are: A) Seasonal pruning of trees. B) Vegetable crops-wastes C) Field crops-wastes. D) Industrial bio-wastes. Therefore; the main objective of this study are: A) Assess biotechnological methods adapted to the socio-economic and environmental conditions in Egypt for the conversion of bio-wastes such as Pyrolysis Systems (cost benefit analysis of the new techniques). B) Development goals by improving the management of bio-wastes in Egypt and thus reducing their potential adverse impacts of human and animal healthy, the environment and the economy. C) Impact of use of bio-char as soil properties amendment; especially, in sand soils with aim to enhance and/or increasing water and fertilizer use efficiency. In this regard; the water requirements of many crops were reduced by 30% to 45% depending on the nature of the crop and its root system.

Keywords: Bio-wastes, Pyrolysis System, Bio-char, Bio-pesticides

Biography:

Magdy Mohamed completed his PhD. In Institute of Plant Breeding and Acclimatization, Radzików, Warsaw, Poland. He is Editor in the following International Journals:

1. De-Witty Journal of Agricultural Sciences (DJAS).
2. International Journal of Research-GRANTHAALAYAH (Scopus).
3. International Journal of Applied Agricultural Research. (IJAAR).

He got the: World's Best Teacher and World's Best Boss; In: Bio-char Systems for Africa International Workshop. World Agro-forestry Centre; Nairobi; Kenya; 01-03.03.2016. He is major participant in the varieties invention of some forage crops (Varieties Invention).