

Preface

Landfilling is still the main way to cope with industrial and municipal wastes in Poland. Though many new technologies are still developed to recycle or process waste components, new dumps are being founded causing threat to humans and environment. This monograph has been prepared to enlighten some harms caused by improper waste storage. The first chapter specifies treats coming from municipal solid waste landfills and describes modern strategies in waste management and landfilling techniques to decrease the impact of waste storage on the environment. The problem of soil and water contamination by waste landfill is further developed in Chapter 2. The authors present results of their own experiments conducted in Polish conditions. Valuable is the discussion on fate of the contaminants leaching out of the waste landfill. The problem of the reaction of soil microbial life on the municipal landfill has been discussed in Chapter 3. Changes in numbers of microorganisms in the soil environment depending on the distance from the dump landfill has been shown. Anyway, no significant differences in soil microbial abundance or hydrolytic and respiratory activity between the new and reclaimed landfill have been detected.

Quite often the old waste landfill becomes the area of town green after sowing grass and planting bushes and trees. Chapter 4 indicate the species that have been shown to be resistant to the residues of harmful compounds in the soil and can grow, bloom and even fructify favourable being planted on an old town municipal waste dump. Another interesting problem has been discussed in Chapter 5. There is a general opinion that municipal waste dump must be a source of pathogenic contamination. The authors document that a modern landfill management do not produce heavy microbial contamination of the environment. Friendly for the environment system of animal carcass thermal destruction is described in Chapter 6. The system cases no air contamination and is also a source of a fertilizer rich in nutrients and with low content of heavy metals. Chapter 7 present a method to reduce environmental contamination with persistent pesticides from old dumps. This nasty problem concerns many countries that banned usage of organochlorine pesticides in 60's and 70's of the XXth century and used to put

the superfluous preparations into defectively built graveyards. The rain and ground waters have washed out the harmful residues out of the store.

Since long time storage was the main method of utilizing the products of coal combustion. The authors of chapter 8 discussed the possibility of using fluidal ashes from fluidized bed coal as a fertilizer increasing the content of basic physiological groups of microorganisms, associated with the transformations of carbon and nitrogen. Studies on the influence of pesticide dump on animal organisms proved usefulness of veterinary pathomorphologic examinations to detect buried hazardous wastes dump; this is presented in Chapter 9. These very important achievements should help to searching the hidden or lost wastes leaching into environment and elevating its contamination. The last chapter presents the idea of “an earthworm ecological box” as a method to decrease the amount of wastes produced in every house. This procedure offers everybody the possibility to participate in organic waste management in accordance with the principles of sustainable development diminishing the negative effects of biowastes stored at landfills.

Passing the monograph to the readers I do hope that the presented scientific description of some aspects of environmental impact of waste dumps would strengthen human efforts towards more safe environment.

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