

Abstract

Plastics are currently widely used material. Their disadvantage is bad environmental sustainability. Therefore, since the 1970s new materials have been searched for that would be able to replace the old ones. The most successful is the production of so-called biodegradable plastics (or in general bioplastics). We get them mainly from plant substrates, they have great diversity (300 types) and quite different properties. Currently they have been implemented into practice but their production does not exceed 1% of total plastic production so far.

The thesis deals with the question how to handle these materials at the end of their life.

In the first part the behaviour of biodegradable plastics in particular end devices and their consequences are outlined. The objective is to choose the best possible disposal option.

Comparing recycling with conventional plastics, composting, anaerobic digestion, incineration or landfilling, the best option is to lead their waste stream to energy recovery facilities. Several bioplastics degrade well in aerobic conditions of composting plants or anaerobic reactors of biogas plants. However, surface disposal is in a universal way is possible due to different properties only by the burning process.

The second, final part deals with the optimization of the operation of biodegradable plastics in the waste management system. Various potential solutions including (separate) recycling are discussed. The most promising seems to apply these materials in packaging technologies or disposable products.

Key words: biodegradable plastics, waste, waste management system