

The use of *Hermetia illucens* in bioconversion and biodegradation of waste and by-products of the agri-food industry

Summary

At a time of increasing global demand for protein by the food and feed industry, farming of insects such as *Hermetia illucens* is an efficient and promising method of protein acquisition. It is also an environmentally sustainable method of management of waste, mainly from the food industry. The larvae of this insect are highly capable of converting organic matter into valuable protein and fat, which can be successfully used in animal feeding or biofuel production. The bioconversion efficiency and productivity of larvae is influenced by a number of environmental factors, including air temperature and relative humidity, substrate type and pH, and light conditions, as well as nutritional factors: content of crude protein, crude fat, and water in the feed and the presence of mycotoxins and toxic metals.

KEY WORDS: *Hermetia illucens*, bioconversion, degradation of waste, 4R, innovative feed materials