

The F4F Life Project – An Innovative Process for Transforming Hotels’ Food Wastes into Animal Feed

K. Bordoudaki¹, I. Giakoumaki¹, P. Panteli¹, M. Georgiou¹, N. Stylianidis¹, C. Mamoulakis¹,
G. Zervas², J. Zentek³, K. Lasaridi⁴ and T. Manios⁵

¹Eniaios Syndesmos Diaheirishs Aporrimation Kritis (United Association of Solid Waste Management in Crete),
Archiepiskopou Makariou 22, Heraklion, 71202, Crete, Greece

²Agricultural University of Athens, Iera Odos 75, 11855, Athens, Greece

³The Department of Veterinary Medicine, Freie Universität Berlin, Kaiserswerther Str. 16-18, Berlin, 14195, Germany

⁴Harokopio University, 70 El. Venizelou, 17671 Kallithea, Athens, Greece

⁵Laboratory of Solid Waste & Wastewater Management, School of Agricultural Technology, Technological
Educational Institute of Crete, Heraklion, 71500, Crete, Greece

Keywords: Food waste; animal feed; solar drying; pet food

Presenting author email: kborb@esdak.gr or giakoumaki-i@esdak.gr

The main aim of the Food for Feed (F4F) project is to evaluate, through a pilot scale realisation, an innovative, low technology and emissions, process that allows the safe transformation of source separated food wastes, mainly from hotels (and generally from the touristic industry including restaurants), into animal feed, utilizing an altered solar drying process.

The main components of the process are: a) non invasive, refrigerated, separate collection, b) hand sorting / removal of non food wastes, c) gridding, d) solar drying / pasteurizing of the mixed food, and e) mixing with other animal feed (eg corn) for achieving high quality standards. These will be tested, in pilot scale, in order to determine the quality of the animal feed produced in relation to both the source separation system existing and operating in hotels (and secondarily in restaurants), and the suggested innovative drying and pasteurising methodology, based on the solar drying technology. In experimental scale, where the wastes used were in small amounts, easily sorted by hand, and the drying system components were operated mainly manually (without the use of automated mechanical turners / mixers), the results were exceptional, including the quality of end product.

However, the technical success of the solar drying / pasteurising process, does not necessarily mean that the product will be consumed by animals. Extended feeding trials will take place, where at the same time an effort will be made to determine a range of quality standards that will help lifting a relevant legal barriers for the utilisation of such products in poultry and pigs.

Evaluating the economical parameters related to the process, in order to be able to evaluate its commercial viability of a real size application, is also part of the project. Two basic questions need to be answered here: a) the optimum size of a commercial unit, and b) the real complete cost per tn of produced feed. Finally, evaluating the environmental parameters related to the process is necessary, as well as its potential role in waste minimization and reuse of non-recyclable wastes, as part of an integrated solid wastes management scheme

ACKNOWLEDGMENTS

This research is funded by EU (LIFE15 ENV/GR/0002057: “Food for Feed: An Innovative Process for Transforming Hotels’ Food Wastes into Animal Feed”).