

Source separated food waste collection system from hotels for animal feed production – the F4F Life project

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Keywords: Food waste collection system, hotels, animal feed

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Within the F4F LIFE project (taking into consideration the Food Waste Management Strategy) aiming at the utilization and transforming separated food wastes, mainly from hotels (and generally from the hospitality industry and restaurants), into animal feed, a source separated food wastes collection system has to be developed. This collection system should not affect the quality of the collected food wastes, especially in relation to the presence of NON food wastes and the capacity of hand sorting to remove them (mainly by avoiding compression). During this LIFE+F4F project the main aim is to collect about 150 to 200 tn of food wastes, during a touristic season in Crete (between April and October). It is anticipated that 2.5 to 3 tn of food wastes will produce about 1 tn of animal feed.

The food wastes will be collected using a refrigerator truck that will enable the storing of the food wastes in temperatures of less than 10°C, with an ambient temperature of about 35°C. The truck will collect the required quantity (about 1 to 1.5 tn of organic wastes per day from the hospitality sector) within 4 hours, for seven days a week (similar to the existing wastes collection system). The hotels will be served by this system completely, leaving only general wastes and recyclables to be collected by the ordinary and existing collection systems.

The selection of the hotels or/and the restaurants that will be cooperated within the project, will be done according to specific criteria. One of the final criteria that will decide which hotels will be selected, except their obvious interest in proper waste management, will be the available space for the refrigerator truck, the compatibility of the tools used for the food separation (bins for the organic wastes collection) with that of other hotels and the existence of a refrigerating storage area for these wastes (improves the quality of the raw material). Bins containing the food wastes will be placed inside the air-cooled rooms and stored there until their collection by the truck. Empty and cleaned bins will be placed in the truck for replacing those used by the hotels. Each bin will be transferred to the pilot unit where it will be emptied in a conveyer belt. There, four (4) workers will hand sort any foreign objects from the food wastes.

Test routes will be developed with the use of GIS/GPS technology in order to estimate the required time and effort with accuracy for the involved hotels. This collection process will be closed monitored for reasons related with the scale-up / transferability requirements. Also based on the time required for serving the participating hotels, real simulations for serving an initial number of hotels originally evaluated in the area will be tested. An optimum collection scheme will be developed and the cost and requirements for its implementation will be recorded. This optimum routing process and the relevant time and effort requirements are one of the most important deliverables towards full scale units, either through scale up of the pilot unit or developing of new units in other areas (replicability/transferability).

ACKNOWLEDGMENTS

This research is funded by EU (LIFE15 ENV/GR/000257: “Food for Feed: An Innovative Process for Transforming Hotels’ Food Wastes into Animal Feed”).