



ETH zürich



Assessment of Alternative Phosphorus Fertilizers for Organic Farming: Compost and Digestates from Urban Organic Wastes

Organic wastes from urban areas include organic household wastes, food processing residues and catering wastes. These so called "Urban Organic Wastes" are important potential sources for nutrient recycling back to agriculture. Main waste treatment options for these sources are composting and anaerobic digestion. Both differ in the process performance – regarding for example emissions or energy balances – and in the characteristics of the final fertilizer product. This fact sheet describes the most important aspects of compost and digestates from urban organic wastes for use in organic farming.

Introduction

The phosphorus balances in arable organic farming systems are very often negative. This indicates the need for the implementation of strategies for their sustainable replenishment in order to avoid long term reduction of soil fertility of organically cropped fields. Phosphorus in organic wastes accounts for a relevant portion of the potential P resources for recycling in European societies.

In urban areas, different sources of organic (degradable) wastes are available, which all together can be referred to as Urban Organic Wastes (UOW):

- Green (biodegradable) waste from gardens or park areas, such as grass or flower cuttings, foliage and hedge trimmings;
- Source separated food waste from private households;
- Food waste from retail, often with high proportions of plastic and often including waste defined according to Regulation (EC) No 1069 / 2009 (animal by-products);
- Organic waste from food processing;
- Food waste from catering and institutions, including waste defined according to Regulation (EC) No 1069 / 2009 (animal by-products).

UOWs are usually processed by composting, anaerobic digestion (AD) or incineration. In some cases, materials are still deposited in landfills.