

Lebenswissenschaftliche Fakultät

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Analysis and Evaluation of Composting Methods for Urban Farmers in Cape Town, South Africa

Bachelor-Arbeit im Studiengang: Gartenbauwissenschaften

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Summary

Considering the poor soil quality, food insecurity and increasing challenges of waste management in the townships in and around the City of Cape Town, South Africa, different composting methods have been examined in this research to deduce a good composting practice for urban farmers in the area. These included hot composting, vermicomposting, composting toilets and the use of EM in the composting process. Based on a literature research, an overview was given about the state of knowledge of the examined composting practices and their risks and potentials in the Capetonian context. In the field phase between February – April 2017, 16 interviews were conducted with different actors relating to compost production in the Cape Town area. Eight compost samples were taken from eight different composting sites, and analyzed for nutrient content, pH and heavy metals. The commercial producers showed the lowest levels of heavy metal contamination in the compost samples, but overall also lower levels of N, P, K and Mg, which were higher for non-commercial producers. The vermicompost of the OZCF showed the highest level of contamination with heavy metals, especially zinc. Results from the interviews revealed a rather emotional and partially uninformed perception of the different composting methods which limits their implementation, especially regarding composting toilets. The main motivations to practice composting were found to be increased fertility and plant nutrition as well as economic and environmental reasons. Hot composting was the most common practice followed by vermicompost. Compost toilets and application of EM were less widely used. Monitoring and controlling measures were regularly applied in the commercial production, but often neglected by small scale users. Compost materials were commonly based

on garden waste and manures, small scale compost often also included kitchen waste and paper or cardboard. The main challenges limiting the compost production were found to be access to information and low priority of the composting practices, as well as access of base materials. This last challenge might be overcome through promotion of networks and communication in the communities, with NGOs and the municipality. Based on all findings, a list of criteria for a good composting practice was created. For the demo plot a combination of hot composting and vermicompost was recommended, with a focus on regular application of measures and constant production. For a backyard farmer, vermicompost could be recommended due to its low requirements of space and base materials. The integration of the local communities was found to be crucial for the implementation of any composting projects, especially community based initiatives.

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