



## **A strategy for the survey of urban garden soils**

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In France and all over the world, there is no systematic data available on the quality (fertility and contamination) of garden soils. Nevertheless, there is a growing need for a typology and for a method dedicated to national and international garden soil survey. This inventory is much needed in the context of environmental risk assessment, to predict the potential impact on human health of the direct contact with garden soils and of the consumption of vegetables from gardens. The state of the art on the international knowledge on garden soils, gardening practices and food production, shows that gardens remain poorly known and very complex ecological, economical and social systems. Their global quality is the result of a wide number of factors including environment, history, specific characteristics of the gardens, gardeners and their practices, plant and/or animal productions and socio-economic context. The aim is then to better know the determinism of the agronomic, environmental and sanitary properties of gardens as a function of gardening practices and their impact on the quality of soils and plants. We propose a definition of “garden” and more generally of all the field “garden”. The system “garden” is represented by attributes (soil and plant characteristics) and factors with various impacts (e.g. environment > soil parent material > former land uses > age and sex of gardener > gardening practices > socio-professional group > type and proportion of productions > climate > age of the garden > size of the garden > education, information > cultural origin > functions of the garden > regulations). A typology of gardens including 7 selected factors and associated categories and a method for describing, sampling and characterizing a population of gardens representative (for a country) are proposed. Based on the statistical analysis on regional databases, we have determined and proposed an optimum size for the collected population of garden soils. The discussion of the results highlights the main indicators of soil quality and the method for a survey of garden soils is proposed. These results and the resulting approach might be validated and used on a worldwide scale to collect garden soil samples with the objective of agronomic, environmental and sanitary studies adapted to this type of urban agriculture.