



## **Choosing sampling points for large area soil fertility monitoring**

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The present study is carried out for one of the agroholdings in Russian Federation and is tested in one of its divisions with arable land area of 27 kha. Up to now, soil sampling was carried out using one mixed sample in diagonal of a field.

Currently, soil sampling scheme is chosen with the aim to get required precision of site description using minimal number of soil samples. We analyse available maps, that are related to soil heterogeneity e.g. morphometric indices, yield, wetness maps. On these maps we choose largest possible, not necessarily simply connected contours with considered soil properties within a given spread. Number of contours is chosen, so that their coverage is at least a given fraction of total area of considered parcel of land. Covered part of the total area is defined by the threshold of rapid growth of heterogeneity tail in soil property. One mixed sample is to be taken from each of such contours.

A dependence of required amount of samples versus a soil properties spread in each contour is considered to make an economically effective choice of sampling strategy. Effectiveness of monitoring is expected to increase with time due to more data on soil heterogeneity become available from monitoring.