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土壤养分变异与合理取样数量

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Soil nutrients variability and rational sampling quantity

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摘要 利用地统计学方法、地理信息系统技术,结合土壤养分状况系统研究法对一定条件下的土壤合理取样数量作了细致的研究。结果表明,大部分土壤养分都具有较为良好的半方差结构,空间自相关距都比较大。在平衡取样成本和精确度的前提下必须考虑土壤养分的空间变异程度。利用地理信息系统等手段可以充分表现土壤养分变异的分布情况,从而为设置取样点提供依据。在本研究条件下,利用分层取样的最适分配法获得34.5hm²耕地上的最佳取样数量,针对土壤速效钾的取样以95%的置信水平10%的相对误差为宜,取样数量为24个;针对土壤速效磷的取样以95%的置信水平20%的相对误差为宜,取样数量10个。

关键词: 地统计学 地理信息系统 取样数量 最适分配法 地统计学 地理信息系统 取样数量 最适分配法

Abstract: Rational sampling of soil under certain condition was studied by using Geo statistics, GIS and Systematic Approach for Soil Nutrients Status Evaluation The results showed that most of soil nutrients possess semi variogram structure with longer range It is essential to consider the spatial variability of soil nutrients in order to balance sampling cost and accuracy GIS could give us better information about soil nutrient variability and supply the theoretical basis for arranging sampling site In this study, the rational sampling quantity could be determined by using Stratified and Rational Distributed Sampling The rational sampling quantity for available K in 34.5hm² would be 24 under 95% significant level and 10% relative error and P would be 19 under 95% significant level and 20% relative error

Keywords:

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