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中文摘要:

在黄河三角洲滨海一农田试验田共采集3期(春、夏、秋三季)EM38表观电导率数据,运用经典统计学和地统计学方法,分析试验区盐分时空分布特征。结果如下:垂直方向电导率相关系数均大于0.8,具有强相关性,水平方向相关系数在-0.2至0.2之间,相关性很弱。土壤盐分分布呈底聚型。变异系数比较显示,同期数据中,表层变异强度最强,底层变异强度最弱。半方差分析中各层块金值与基台值之比大多在25%~75%,盐分空间上偏向于中等空间相关性。棉花长势赋值后生成空间插值图,对比同期电导率插值图,将盐渍化程度划分成4个等级。分析按等级重分类后的栅格插值图中各盐渍土等级所占比例值,表层中非盐化土所占面积比已由初期的5.54%增加至11.93%,轻度盐化土所占面积比增加了42个百分点。

英文摘要:

Using a portable Geonics EM38 electromagnetic soil conductivity meter, electrical conductivity of an experiment field at the Yellow River delta was measured in spring, summer and autumn to. Study the temporal-spatial distribution of soil salt .With the help of classical statistics and geostatistics, analysis was performed of the measurements. Results show that the correlation coefficients were all higher than 0.8 and hence in the category of strong correlation, while horizontally, they were in the range of -0.2 ~ 0.2 and the hence in the category of weak correlation. Soil salt was found to be accumulated in the bottom soil layer. Comparisons of coefficients of variation indicate that among the data collected at the same time, the variation was the highest in the surface layer and the lowest in the bottom layer. Semi-variance analysis shows that the nugget/sill ratios of the soil layers were all in the range of 25% ~ 75%. Spatial distribution of salt tended to be moderate in spatial correlation. Spatial interpolation diagrams were formed after values were assigned to cotton growth, and the diagrams of the same season were compared. Soil salinity was sorted into four grades. Proportion of each grade of soil salinity in the grid interpolation of the re-sorted salinity grades was calculated, and shows that the proportion of non-salinized soil has increased from 5.54% to 11.93% in the surface soil layer and that of slightly, salinized soil increased by 40%.

孙运朋,陈小兵,张振华,吴从稳,颜 坤,张立华.滨海棉田土壤盐分时空分布特征研究[J].土壤学报,2013,50(5):891-899.Sun Yunpeng,Chen Xiaobing,Zhang Zhenhua,Wu Congwen,yYan Kun and Zhang Lihua.Temporal-spatial distribution of soil salt in coastal cotton field soil [J].Acta Pedologica Sinica,2013,50(5):891-899

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