

新鲜土样和改进ASI浸提剂对土壤有效养分测试的影响

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Effects of fresh soil samples and modified ASI extractant on soil available nutrient determination

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摘要

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摘要 通过分析基于风干土样和新鲜土样、ASI (Agro Services International Inc., ASI) 浸提剂和改进ASI浸提剂进行测量的土壤有效养分含量的相关性, 探索一种基于新鲜土样和联合浸提剂进行土壤有效养分测试的方法。结果表明, 利用ASI浸提剂测量的北京潮土新鲜土样的NO₃⁻-N和NH₄⁺-N、有效P、K、Ca、Mg、Cu、Fe、Mn、Zn、有机质含量、及pH值, 与风干土样的测量值均呈显著的线性相关关系, 经该线性方程回归检验的测量相对误差小于5%~9%; 利用改进ASI浸提剂测量的新鲜土样和风干土样的NH₄⁺-N、有效P、K、Ca、Mg、Cu、Fe、Mn、Zn含量与基于ASI浸提剂测量的也呈显著的线性相关关系, 经该线性方程回归检验的测量相对误差小于5%~8%。因此, 基于新鲜土样和改进ASI浸提剂测量石灰性土壤有效养分含量是可行的, 可为车载式土壤养分检测提供一种快捷的土壤浸提前处理方法。

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Abstract: In order to meet require of pre-treatment of soil samples before measurement in soil nutrient testing for vehicle application, soil available nutrient determinations based on fresh soil samples and modified ASI (Agro Services International Inc., ASI) extractant were explored and compared with that based on air-dried soil samples and ASI extractant. In the soil available nutrient determinations based on ASI extractant for fresh and air-dried soils (fluvo-aquic soil) collected in Beijing, there are significant linear correlations between the available nutrient contents of NO₃⁻-N, NH₄⁺-N, P, K, Ca, Mg, Cu, Fe, Mn and Zn, organic matter, and pH value under the treatments of fresh and air-dried soils, and the relative errors are less than 5%~9%. In the soil nutrient determinations based on fresh and air-dried soils for modified ASI and ASI extractants, there are significant linear correlations between the available nutrient contents of NH₄⁺-N, P, K, Ca, Mg, Cu, Fe, Mn and Zn, and he relative errors are less than 5-8%. Therefore, the soil nutrient determination based on fresh soil sample and modified ASI extractant is an available way for supplying a suitable soil pre-treatment method in vehicle soil nutrient testing.

Keywords: color: black font-family: "Times New Roman" mso-font-kerning: 1.0pt mso-ansi-language: EN-US mso-fareast-language: ZH-CN mso-bidi-language: AR-SA mso-fareast-font-family: 宋体 air-dried soil)" href="#">mso-bidi-font-weight: bold">air-dried soil fresh soil modified ASI extractant soil available nutrient pre-treatment

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