

山西天镇设施菜地土壤养分状况分析

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摘要: 为了研究山西天镇设施菜地土壤养分状况,以设施菜地相邻大田土壤为对照,选择当地有代表性的设施大棚 21 个,采用“S”型五点式采样,采集 0~20 cm 土壤样品进行分析化验。结果表明,与对照相比,天镇县设施菜地土壤 pH 值较对照(8.26)降低了 1.5~2.5,出现了明显酸化趋势;土壤有机质质量分数平均为 15.41 g·kg⁻¹,整体含量偏低,导致土壤养分得不到合理利用;土壤全氮质量分数在 0.4~0.6 g·kg⁻¹,有效磷质量分数小于 30 mg·kg⁻¹,依据菜地土壤养分分级标准,氮磷含量均属于严重缺乏;土壤速效钾质量分数大于 200 mg·kg⁻¹,超过了作物需求量,后期应严格控制钾肥施用量。总之,当地设施蔬菜生产中的不合理施肥,已导致土壤养分供应与蔬菜养分需求严重失调,今后应推广科学施肥。

关键词: 设施菜地;土壤养分;合理施肥

Soil nutrient status of vegetable-cultivated greenhouse in Tianzhen county of Shanxi

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Abstract: In order to clarify soil nutrient of vegetable-cultivated greenhouse in Tianzhen county of Shanxi, 0-20 cm soil samples from 21 representative greenhouses were conducted using a S- sampling trip pattern with 5 sampling points, and the adjacent open field soil was used as control. The results indicated that pH value of vegetable-cultivated greenhouse was lower 1.5-2.5 than control (8.26), which showed a clearly acidification trend. Soil organic matter content was lower (15.41 g·kg⁻¹), soil nutrients could not be effectively used. The content of soil total N was in the range of 0.4-0.6 g·kg⁻¹, available P content was lower than 30 mg·kg⁻¹, total N and available P contents were seriously deficient. Soil available K was more than 200 mg·kg⁻¹ which exceeded the normal demand for crops, and we should control the amount of potash fertilizer application in the future. In short, vegetable-cultivated greenhouse unreasonable fertilization has led to significant differences in soil nutrient supply and vegetables demand. We should promote scientific fertilization in the future.

Key words: Vegetable-cultivated greenhouse; Soil nutrients; Rational fertilization

随着我国社会的发展,人民对于生活质量的要求也越来越高。同时,由于设施蔬菜种植技术的进步与发展,越来越多的反季蔬菜出现在人们的餐桌上。设施蔬菜对于保证蔬菜周年供应、改善人民生活质量、提高农民收入起到了重要作用。土壤不仅是蔬菜生长发育的载体,也是蔬菜所必需营养元素的主要来源,土壤各种养分的供给水平直接关系到设施蔬菜的产量和品质^[1]。但是在设施蔬菜生产中,普遍缺乏相应的设施蔬菜施肥指导技术体系,盲目施肥现象很普遍^[2]。不合理施肥,一方面容易导致蔬菜养分供应不足,影响设施蔬菜产业可持续发展;另一方面容易导致土壤养分过剩,污染环境。

山西省天镇县属于大陆性北温带季风气候,年平均气温 6.4℃,无霜期 115 d 左右,当地水资源匮乏,农业发展受到极大制约。近年来,天镇县依托与北京东城区农产品产销对接合作,大幅增加农副产品直营店数量,扩大京津地区“菜篮子”基地规模。每年有近万 t 蔬菜供应北京市将近 20 家直销店,目前全县已经建成了无公害蔬菜大棚 2.3 万栋,设施菜地总面积近 1 400 hm²。然而目前还没有当地设施菜地土壤养分状况的报道。因此,笔者选取山西省天镇县设施菜地土壤为研究对象,通过监测土壤 pH 值和有机质、全氮、有效磷、速效钾含量状况,从而为当地设施蔬菜持续发展提供理论依据。

收稿日期: 2016-09-01; 修回日期: 2017-02-20

基金项目: 山西大同大学科研项目(2015K6)

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