

黄土高原地区长期施用微肥土壤Cu、Zn、Mn、Fe含量的时空变化

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Temporal and spatial variation of Cu,Zn,Mn and Fe content in soils with long term trace fertilizer application on the Loess Plateau

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摘要 以19年微肥定位试验为基础,研究了长期施用微肥条件下冬小麦土壤Cu、Zn、Mn、Fe含量的时空变化。结果表明,长期施用微肥能增加土壤耕层相应微量元素含量,施铜肥的土壤耕层有效Cu含量增加5倍以上;施锌肥的土壤耕层有效Zn含量增加3.58倍。从剖面变化看,不同处理土壤有效Cu的变化趋势一致,且耕层以下各土层有效Cu含量低于耕层,土壤有效Zn的变化趋势与之相似;土壤有效Mn在80cm土层含量较高,80cm以上以及下面的土层中Mn含量明显低于80cm土层,在土壤剖面上有效Mn存在淋溶和累积现象。施用不同微肥对土壤有效Fe含量的影响各不相同。

关键词: 长期定位试验 微量元素 剖面分布 黄土高原 长期定位试验 微量元素 剖面分布 黄土高原

Abstract: Based on the 19 years fix position experiment on microelement fertilizer application on the Loess Plateau, the distribution of trace elements on soil profile was studied in this paper. The result showed that the content of available trace element was increased in topsoil after 19-year application of microelement fertilizer, in which the content of available Cu and Zn was increased by more than 5 times and 3.58 times, respectively. In term of the spatial variation in the profile, the change tendency of available Cu of all treatments was unanimous, and the available Cu content under the topsoil was lower than that on the topsoil. The change tendency of available Zn showed a similar pattern to that of Cu. The highest content of Mn on soil profile was observed in the layer of 80cm, the content of available Mn in other layers were obviously lower than that in 80cm soil layer, indicating that eluviations and accumulation of available Mn occurred. The effect of microelement fertilize application on the content of available Fe was divergent.

Keywords:

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