

微生物腐熟菌剂对牛粪堆肥产品中低分子量有机物的影响

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Effect on low-molecular weight organic matters of cow dung composted production by micro-inoculants

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摘要 利用固相微萃取—气相色谱—质谱(SPME-GC-MS)技术对奶牛粪堆肥产品中的低分子量有机物质进行了定性分类和定量分析,结果表明奶牛粪堆肥产品中含有大量的低分子量有机物质,其中低分子量有机酸多达16种,并且还含有醛、醇、酮、呋喃和吡嗪等低分子量有机物质。研究证实添加微生物腐熟菌剂的奶牛粪堆肥产品中醛类、醇类、酯类、羧酸类、呋喃类、吡啶类和含硫类等低分子有机化合物的相对含量比未添加NMF微生物腐熟菌剂分别增加6.5%、9.2%、5.7%、15.6%、9.8%、11.3%和28.6%,而酮类、脂肪族碳氢化合物的相对含量则分别减少11.4%和15.5%。添加NMF菌剂比未添加NMF菌剂的奶牛粪便堆肥产品中低分子有机化合物总量增加42.8%。为考察有机肥品质的客观指标和应用微生物调控有机肥对植物有正、负面影响的低分子有机物种类和含量提供基础资料。

关键词: 有机肥料 低分子量有机物质 微生物菌剂 SPME-GC-MS 有机肥料 低分子量有机物质 微生物菌剂 SPME-GC-MS

Abstract: An experiment was conducted to analyze on the low molecular weight organic matters(LMWOM) in cow dung composted production with/without NMF inoculants by Gas ChromatogramMass Spectrum(GC).The results have shown that there are a large number of low molecular weight organic matters in these productions.As far as these organic matters are concerned,there are as much sixteen kinds of low molecular weight organic acids and Aldehyde,Alcohol,Ketone,Carboxylic acid,Carboxylic acid,Furan,Pyrazine,Fat hydrocarbon,sulphide and so on.The results have also shown that the content of Aldehyde,Alcohol,Fat hydrocarbon,Carboxylic acid,Furan,Pyrazine,sulphide in composted production amended with NMF inoculants increased 6.5%, 9.2%, 5.7%, 15.6%, 9.8%, 11.3% and 28.6%,respectively.But Carboxylic acid and Ketone decreased by 11.4%,and 15.5%.As far as the total content of low molecular weight organic matters were concerned,it increased by 42.8%.This study had supplied the basic materials for the judgement of quality of organic fertilizers.

Keywords:

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